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Schedule of Activities
June 20-23, 2007
Sheraton Rio Hotel and Towers
Rio de Janeiro, Brazil

On-Site Registration Hours

Tuesday, June 19	2:00 PM – 6:00 PM
Wednesday, June 20	6:30 AM – 7:00 PM
Thursday, June 21	6:30 AM – 7:00 PM
Friday, June 22	6:30 AM – 7:00 PM
Saturday, June 23	6:30 AM – 12:00 PM

Poster Sessions (Presenters in Attendance)

Wednesday, June 20	5:30 PM – 7:00 PM
Thursday, June 21	6:00 PM – 7:00 PM
Friday, June 22	5:30 PM – 6:30 PM

Speaker Ready Room Hours

Tuesday, June 19	2:00 PM – 6:00 PM
Wednesday, June 20	6:30 AM – 7:00 PM
Thursday, June 21	6:30 AM – 7:00 PM
Friday, June 22	6:30 AM – 7:00 PM
Saturday, June 23	6:30 AM – 12:00 PM

Cyber Café Hours

Tuesday, June 19	2:00 PM – 6:00 PM
Wednesday, June 20	6:30 AM – 7:00 PM
Thursday, June 21	6:30 AM – 7:00 PM
Friday, June 22	6:30 AM – 7:00 PM
Saturday, June 23	6:30 AM – 12:00 PM

Exhibit Hours

Wednesday, June 20	5:30 PM – 7:00 PM
Opening of Exhibits, Wine and Cheese Reception	
Thursday, June 21	10:00 AM – 4:30 PM
Friday, June 22	10:00 AM – 4:00 PM

Gala Dinner at The Copacabana Palace

Friday, June 22 8:00 PM – 11:00 PM

*Transportation will be provided by the ILTS, departing from the Sheraton Rio Hotel promptly at 7:30 PM.

Poster Viewing Hours

Wednesday, June 20	5:30 PM – 7:00 PM
Thursday, June 21	10:00 AM – 7:00 PM
Friday, June 22	10:00 AM – 6:30 PM

ILTS Business Meeting

Friday, June 22 12:30 PM – 1:00 PM

Travel Awardees

See Chan
A DECADE OF RIGHT LIVER ADULT-TO-ADULT LIVE DONOR LIVER TRANSPLANTATION: MID-TERM OUTCOMES.
(Abstract # 154)

K. Vasudevan
MANAGEMENT OF RECIPIENTS WITH PORTAL VEIN THROMBOSIS IN LIVE DONOR LIVER TRANSPLANTATION: EXPERIENCE FROM ONE CENTER.
(Abstract # 157)

Shawn Pelletier
EFECT OF INTRAOPERATIVE HYPERGLYCEMIA DURING LIVER TRANSPLANTATION.
(Abstract # 333)

Murat Dayangac
IMPACT OF INFLOW OCCLUSION IN ADULT RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION.
(Abstract # 335)

Hanaa Badran
EXTENSION OF MILAN CRITERIA TO 5-5 CRITERIA DOES NOT IMPACT SURVIVAL NOR HCC RECURRENCE AFTER LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA.
(Abstract # 341)

Jonathan Hind
AGE RELATED INCIDENCE OF ACUTE CELLULAR REJECTION IN PAEDIATRIC LIVER TRANSPLANTATION.
(Abstract # 343)

Mehmet Alper
MICROVASCULAR RECONSTRUCTION OF HEPATIC ARTERY: PERSONAL EXPERIENCE ON 300 CASES.
(Abstract # 355)

Eung-Ho Cho
BILE DUCT COMPLICATION AFTER DUCT-TO-DUCT RECONSTRUCTION IN ADULT LIVING DONOR LIVER TRANSPLANTATION.
(Abstract # 357)

Murat Kilic
DUCT-TO-DUCT BILIARY RECONSTRUCTION IN 150 CONSECUTIVE RIGHT LOBE LIVE DONOR LIVER TRANSPLANTATION.
(Abstract # 358)

Dmitriy Nikitin
15 YEARS FOLLOW-UP OF AORTOHEPATIC CONDUITS IN LIVER TRANSPLANTATION.
(Abstract # 360)

Julie Thompson
DOES CHOICE OF CALCINEURIN INHIBITOR MATTER IN PATIENTS TRANSPLANTED FOR HEPATITIS C (HCV)?
(Abstract # 363)

Shuji Nobori
OVERCOME GRAFT SIZE MISMATCH WITH PORTAL FLOW MODIFICATION IN LIVING DONOR LIVER TRANSPLANTATION.
(Abstract # 375)

Vivek Kohli
EARLY STEROID WITHDRAWAL FOLLOWING LIVER TRANSPLANT FOR AUTOIMMUNE LIVER DISEASE: UPDATED EXPERIENCE IN 100 CONSECUTIVE PATIENTS.
(Abstract # 384)

V. Corno
LESSONS LEARNED FROM 200 CONSECUTIVE PRIMARY PEDIATRIC LIVER TRANSPLANTATIONS WITH LEFT LATERAL SEGMENT SPLIT GRAFTS.
(Abstract # 399)

Kwang-Woong Lee
OPTIMIZING OUTCOMES IN PEDIATRIC LIVER TRANSPLANTATION BY GRAFT SELECTION: ANALYSIS OF UNOS/OPTN DATABASE.
(Abstract # 400)

Robert Venick
PREDICTORS OF SURVIVAL FOLLOWING LIVER TRANSPLANTATION IN CHILDREN LESS THAN 1 YEAR: A SINGLE CENTER ANALYSIS OF OVER 200 CASES.
(Abstract # 401)

Travel Awardees

Rachel Taylor
THE PSYCHOLOGICAL CONSEQUENCES OF LIVER TRANSPLANTATION DURING ADOLESCENCE.
(Abstract # 405)

Peter Horton
ALL POTENTIAL LIVING LIVER DONORS SHOULD UNDERGO LIVER BIOPSY PREDONATION.
(Abstract # 550)

Nienke Warnaar
IS INTRAOPERATIVE APROTININ PROPHYLAXIS ASSOCIATED WITH THE DEVELOPMENT OF RENAL DYSFUNCTION OR FAILURE AFTER LIVER TRANSPLANTATION? AN ANALYSIS OF 1067 PATIENTS.
(Abstract # 558)

Shinji Yamamoto
LONG-TERM CONSEQUENCES OF DOMINO LIVER TRANSPLANTATION USING FAMILIAL AMYLOIDOTIC POLYNEUROPATHY GRAFTS.
(Abstract # 561)

Notes

The International Liver Transplantation Society
13th Annual International Congress
June 20-23, 2007
Sheraton Rio Hotel and Towers
Rio de Janeiro, Brazil

The International Liver Transplantation Society
Day-at-a-Glance, Wednesday, June 20, 2007

9:00 AM – 5:00 PM	**Astellas Sponsored Symposium**
Page 9	*Room: Gavea A&B, 5th Floor*
5:30 PM – 7:00 PM	**Opening Wine and Cheese Reception & Opening of Exhibits**
Page 9	*Room: Copacabana, 5th Floor*
5:30 PM – 6:00 PM	**Poster Grand Rounds Session I**
Page 9	**Comments on Chosen Posters** *Room: Vidigal A&B, 5th Floor*
5:30 PM – 7:00 PM	**Poster Session I**
Page 9	**Presenters in Attendance** *Room: Leme, 5th Floor*

Wednesday, June 20, 2007

Astellas Sponsored Symposium
9:00 AM – 5:00 PM

Room: Gavea A&B, 5th Floor

Opening Wine and Cheese Reception & Opening of Exhibits
5:30 PM – 7:00 PM

Room: Copacabana, 5th Floor

Poster Grand Rounds Session I
5:30 PM – 6:00 PM

Room: Vidigal A&B, 5th Floor

Comments on Chosen Posters
Anil Dhawan, MD
Kings College
London, United Kingdom

Poster Session I
5:30 PM – 7:00 PM

Presenters in Attendance
Room: Leme, 5th Floor

1 **PROPOFOL PRETREATMENT ATTENUATES LIPOPOLYSACCHARIDE-INDUCED INFLAMMATORY CYTOKINE GENE EXPRESSION IN CULTURED HEPATOCYTES. (Abstract # 1)**
Bruno Jawan, Chao-Long Chen, Ying-Hsien Kao, Chih-Hsien Wang, Chia-Jung Huang, Kuan-Hung Chen, Yu-Fan Cheng, Chi-Chih Wang, Allan Concejero. Kaohsiung, Taiwan.

2 **A RARE ASSOCIATION OF LIVER TRANSPLANTATION AND TAKOTSUBO CARDIOMYOPATHY. (Abstract # 2)**
Camila Paiva, Leonardo Ferraz, Jose Augusto Marcondes de Souza, Rafael Pecora, Sergio Mies. São Paulo, Brazil.

3 **PULMONARY EMBOLISM IN DONORS UNDERGOING RIGHT LOBE HEPATECTOMY FOR LIVING DONOR TRANSPLANTATION. (Abstract # 3)**
Alexandre Teruya, Alexandre P. Oliveira, Flavio Takaoka, Rogerio P. Barbosa, Sergio Mies. Sao Paulo, SP, Brazil.

4 **SHORT-TERM PROGNOSIS IN LIVER TRANSPLANTATION PATIENTS ADMITTED TO INTENSIVE CARE UNIT ASSESSED BY PROGNOSTIC SCORING SYSTEMS. (Abstract # 4)**
Pedro Medeiros, Jr., Rodrigo Surjan, Telésforo Bacchella, Marcel Machado. São Paulo, SP, Brazil.

5 **EARLY EXTUBATION IN LIVER TRANSPLANT RECIPIENTS. (Abstract # 5)**
Alexandre Teruya, Flavio Takaoka, Rogerio P. Barbosa, Marcel V. Vitorelli, Sergio Mies. Sao Paulo, SP, Brazil.

6 **BISPECTRAL INDEX (BIS™) MONITORING AND END-TIDAL ISOFLURANE CONCENTRATIONS DURING ANESTHESIA FOR LIVER TRANSPLANTATION. (Abstract # 6)**
R. Schumann, J. Hudcova, C. Anderson, I. Bonney. Boston, USA.

7 **NASAL BRIDLE: A TECHNIQUE TO SECURE NASOJEJUNAL FEEDING TUBES IN LIVER TRANSPLANT CANDIDATES AND RECIPIENTS. (Abstract # 7)**
David J. Kramer, Juan M. Canabal, Lisa C. Arasi, Jaime Aranda-Michel. Jacksonville, FL, USA.

8 **IS LIMITED EFFICACY OF rFVIIa PREDICTABLE DURING OLT? (Abstract # 8)**
R. Schumann, J. Hudcova. Boston, USA.

9 **CAN PATIENTS WITH VALVULAR CONGESTIVE HEART FAILURE SAFELY UNDERGO ORTHOTOPIC LIVER TRANSPLANTATION? (Abstract # 9)**
Samuel A. Irefin, Brian M. Parker, Charles M. Miller, John Fung, Donald Hammer. Cleveland, OH, USA.

10 **PREOPERATIVE PREDICTORS OF EARLY EXTUBATION ON ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 10)**
Lucio Auler, Rodrigo Diaz Andre, Glauber Gouvea, Jose Manoel Martinho, Lucio Pacheco, Marcelo Enne, Alexandre Cerqueira, Elizabeth Balbi, Rodrigo Amil, Jefferson Alves. Rio de Janeiro, Brazil; Niteroi, Brazil.

11 **COMPARISON THE EFFECTS OF DIFFERENT GAS FLOWS OF ANESTHESIA AND DIFFERENT AMBIENT OPERATION ROOM TEMPERATURES ON THE CORE TEMPERATURES OF PATIENTS UNDERGOING PARTIAL LIVING DONOR HEPATECTOMY. (Abstract # 11)**
Chih-Hsien Wang, Chao-Long Chen, Bruno Jawan. Kaohsiung, Taiwan.

12 **BILE CAST SYNDROME: A CAUSE FOR HEPATIC ALLOGRAFT FAILURE. (Abstract # 12)**
Deborah Giusto, Shriram Jakate, Forrest Dodson. Chicago, IL, USA.

13 **PERITONEAL LEUKOCYTOCLASTIC VASCULITIS AS A CAUSE OF UNEXPLAINED PERSISTENT ASCITES AFTER LIVER TRANSPLANTATION. (Abstract # 13)**
Renato Romagnoli, Paolo Strignano, Francesco Lupo, Francesco Tandoi, Daniela Di Franco, Stefano Mirabella, Alessandro Ricchiuti, Andrea Brunati, Elisabetta Cerutti, Mauro Salizzoni. Turin, Italy.

14 **RECURRENT IDIOPATHIC GRANULOMATOUS PHLEBITIS AFTER LIVER TRANSPLANTATION: PRESENTATION AND MANAGEMENT. (Abstract # 14)**
Kymberly D. S. Watt, Kevork M. Peltekian, Mark Walsh, Michele Molinari, Ian Wanless. Halifax, NS, Canada.

15 **SEVERE HEPATIC STEATOSIS MIMIKING BUDD-CHIARI LIKE SYNDROME AS A SYMPTOM OF NONCOMPLIANCE AFTER LIVER TRANSPLANTATION. (Abstract # 15)**
Felix Braun, Holger Hinrichsen, Antje Grosse, Fred Faendrich, Dieter Broering. Kiel, Germany.

16 **VALUE OF DOPPLER ULTRASOUND FOR THE DIAGNOSIS OF HEPATIC VENOUS CONGESTION IN PARAMEDIAN SECTOR OF THE MODIFIED RIGHT-LOBE GRAFT AFTER LIVING DONOR LIVER TRANSPLANTATION: A PROSPECTIVE STUDY OF 39 PATIENTS. (Abstract # 16)**
So Yeon Kim, Kyoung Won Kim, Seung Soo Lee, Moon-Gyu Lee, Sung Gyu Lee. Seoul, Republic of Korea.

17 **PARTIAL MIDDLE HEPATIC VEIN INCLUSION IN RIGHT LOBE GRAFTS: A NEW DONOR FRIENDLY APPROACH TO BETTER VENOUS DRAINAGE OF THE ANTERIOR SECTOR. (Abstract # 17)**
A. S. Soin, R. Kakodkar, S. Saigal, S. Nundy. New Delhi, India.

18 **IMPACT OF MHV INCLUSION IN RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 18)**
R. Kakodkar, A. S. Soin, S. Saigal, S. Nundy. New Delhi, India.

19 **DETERMINANTS OF EARLY AND LATE MORTALITY IN ADULT TO ADULT LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 19)**
Shridhar Iyer, Chao-Long Chen, Chih-Chi Wang, Shih-Ho Wang, Yueh-Wei Liu, Chin-Hsiang Yang, Chee-Chien Yong, Allan Concejero, Amornetta Jordan, Bruno Jawan, Yu-Fan Cheng, Hock-Liu Eng. Kaohsiung, Taiwan.

20 **INITIAL EXPERIENCES OF LIVING DONOR LIVER TRANSPLANTATION IN CHINA. (Abstract # 20)**
Xiangcheng Li, Xuehao Wang, Feng Zhang, Cunming Liu, Yuefeng Ma, Feng Cheng, Guoqiang Li. Nanjing, Jiangsu Province, China.

21 **LONG TERM OUTCOME OF THIRTY TWO CASES OF WILSON DISEASE UNDERWENT LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 21)**
Elena Y. Yoshitoshi, Mikiko Ueda, Fumitaka Oike, Yasutsugu Takada, Shinji Uemoto, Koichi Tanaka. Kyoto, Japan; Kobe, Japan.

22 **THE USEFULNESS OF INTRA-OPERATIVE CINE-PORTOGRAM TO FIND SPONTANEOUS PORTOSYSTEMIC COLLATERALS UNDETECTED BY INTRAOPERATIVE DOPPLER ULTRASONOGRAPHY. (Abstract # 22)**
Deok-Bog Moon, SungGyu Lee, Shin Hwang, ChulSoo Ahn, KiHun Kim, GiWon Song, DongHwan Jung, JeHo Ryu, HyoJun Lee, JeongIk Park, KwangMin Park, HeaSeon Ha, JungJa Hong. Seoul, Republic of Korea.

23 **DONOR MORBIDITY AFTER LIVE LIVER DONATION: AN INEVITABLE CONSEQUENCE OF A NECESSARY EVIL. (Abstract # 23)**
Hatem Khalaf, Mohammed Al-Sofayan, Mohammed Al-Sagheir, Yasser El-Sheikh, Hamad Al-Bahili, Mohammed Al-Sebayel. Riyadh, Saudi Arabia.

24 **ADULT LIVING DONOR LIVER TRANSPLANT: THE BARCELONA CLINIC EXPERIENCE. (Abstract # 24)**
Constantino Fondevila, Jose Fuster, Ramon Charco, Joana Ferrer, Amelia J. Hessheimer, David Calatayud, Josep Marti, Josep M. Llovet, Alberto Sanchez-Fueyo, Miguel Navasa, Antonio Rimola, Juan C. Garcia-Valdecasas. Barcelona, Spain.

25 **HYPOPHOSPHATEMIA AFTER LIVIE DONOR HEPATECTOMY. (Abstract # 25)**
Hae Won Lee, Kyung-Suk Suh, Woo Young Shin, Eung-Ho Cho, Jai Young Cho, Nam-Joon Yi, Jung-Hwan Yoon, Hee Chul Yu, Baik Hwan Cho, Kuhn Uk Lee. Seoul, Republic of Korea; Jeonbuk, Republic of Korea.

26 **EXPERIENCE OF LIVE DONOR LIVER TRANSPLANT FROM A DEVELOPING COUNTRY. (Abstract # 26)**
Vivek Vij, Ajitab Srivastva, Manav Wadhawan, Subhash Gupta. New Delhi, Delhi, India.

27 **SURGICAL EXPERTISE WITH LIVER RESECTION FOR TUMOR IS ENOUGH TO PERFORM LIVE DONOR SURGERY? COMPARATIVE ANALYSIS OF THE LIVE LIVER DONATION RISK USING A SEVERITY GRADING SYSTEM. (Abstract # 27)**
Lucio F. Pacheco-Moreira, Jefferson Alves, Marcelo Enne, Glauber Gouvea, Alexandre Cerqueira, Elizabeth Balbi, Rodrigo C. Amil, José Manuel Martinho. Rio de Janeiro, Brazil.

28 **AUXILIARY LIVER TRANSPLANTATION USING A LAPAROSCOPICALLY-HARVESTED LEFT LATERAL SECTION GRAFT IN ADULTS: A NEW APPROACH TO MINIMIZE DONOR'S RISK AND TO OVERCOME RECIPIENT'S SMALL FOR SIZE SYNDROME. (Abstract # 28)**
Olivier Scatton, Pierre-Philippe Massault, Bruto Randone, Luciana Haddad, Denis Bernard, Yvon Calmus, Olivier Soubrane. Paris, France.

29 **ONE SUCCESSFUL ADULT-TO-ADULT LIVING DONOR LIVER TRANSPLANTATION USING DUAL GRAFTS INCLUDING RIGHT THREE SEGMENTS AND LEFT LOBE. (Abstract # 29)**
Li Li, Yan X. Li, Hua J. Ran, Gang Chen, Ying H. Cao. Kunming, Yunnan, China.

30 **EASY MODEL FOR TRAINING MICROSURGICAL TECHNIQUE AND INITIAL RESULTS OF LOUPES ONLY HEPATIC ARTERY RECONSTRUCTION IN LIVING DONOR LIVER TRANSPLANTATION. FROM THE LIVER TRANSPLANT SURGEON POINT OF VIEW. (Abstract # 30)**
Marcelo Enne, Lucio Pacheco-Moreira, Alexandre Cerqueira, Rodrigo Amil, Jefferson Alves, José Manoel Martinho. Rio de Janeiro, RJ, Brazil;.

31 **RIGHT POSTERIOR SEGMENTECTOMY OF THE LIVING DONOR WITH A LEFT-SIDED GALLBLADDER FOR ADULT DUAL LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 31)**
Ki-Hun Kim, Sung-Gyu Lee, Shin Hwang, Dong-Hwan Jung, Bum-Soo Kim, Jung-Ik Park, Kyung-Hoon Koh, Bum-Sik Shin, Jung-Ja Hong, Eun-Bok Lee. Seoul, Korea.

32 **TOLERANCE OF SKIN TRANSPLANTATION INDUCED BY SYNGENIC HEMATOPOIETIC STEM CELL TRANSPLANTATION. (Abstract # 32)**
Wang Lin, Zhao Qingchuan, Tao Kaishan, Yang Yanling, An Jiaze, He Yong, Dou Kefeng. Xian, China.

33 **MIGRATION TO STEROID-FREE IMMUNOSUPPRESSION: THE IMPACT ON THE INCIDENCE OF REJECTION AND CMV INFECTION. (Abstract # 33)**
Greg J. McKenna, Richard Ruiz, Edmund Q. Sanchez, Srinath Chinnakotla, Henry B. Randall, Nicholas Onaca, Tariq Khan, Dmitriy Nikitin, Robert M. Goldstein, Marlon F. Levy, Goran B. Klintmalm. Dallas, TX, USA.

34 **CALCINEURIN INHIBITOR-FREE IMMUNOSUPPRESSIVE PROTOCOL WITH BASILIXIMAB INDUCTION AND EVEROLIMUS IN DE NOVO LIVER TRANSPLANT RECIPIENTS. (Abstract # 34)**
Michele Masetti, Roberto Montalti, Gianluca Rompianesi, Fabrizio Di Benedetto, Nicola De Ruvo, Antonio Romano, Gian Piero Guerrini, Giorgio E. Gerunda. Modena, Italy.

35 **THE EFFECT OF INDUCTION THERAPY WITH BASILIXIMAB ON ACUTE REJECTION IN LIVING DONOR LIVER TRANSPLANTATION (LDLT) (RETROSPECTIVE STUDY). (Abstract # 35)**
Wael Safwat, Rasha Refaie, Ibrahim Mostafa, Medhat Abdel-Aal, Magda El-Monieri, Mahmoud El-Metient, Mohamed Fathy. Cairo, Egypt.

36 **SAFETY AND EFFICACY OF MYCOPHENOLATE MOFETIL AS MONOTHERAPY FOR ADULT LIVING DONOR LIVER TRANSPLANT RECIPIENTS. (Abstract # 36)**
Eung-Ho Cho, Kyung-Suk Suh, Woo Young Shin, Hae Won Lee, Jai Young Cho, Nam-Joon Yi, Won Kim, Jung-Hwan Yoon, Kuhn Uk Lee. Seoul, Republic of Korea.

37 **DIAGNOSIS AND TREATMENT OF ACUTE REJECTION FOLLOWING LIVER TRANSPLANTATION. (Abstract # 37)**
Wang Lin, Zhao Qing-Chuan, Tao Kai-Shan, Yang Yan-Ling, An Jia-Ze, He Yong, Dou Ke-Feng. Xian, China.

38 **DE NOVO USE OF mTOR INHIBITOR EVEROLIMUS IN COMBINATION WITH MYCOPHANOLATE SODIUM OR MYCOPHENOLATE MOPHETIL AND EARLY REPLACEMENT OF CNIs AFTER ORTHOTOPIC LIVER TRANSPLANTATION BY THIS COMBINATION. (Abstract # 38)**
Efstathios A. Antoniou, Dimitris A. DIimitroulis, Alkiviadis J. Kostakis. Athens, Greece.

39 **USING LIVERS FROM HEPATITIS B CORE ANTIBODY POSITIVE DONORS EXPANDS THE DONOR POOL WITHOUT ADVERSELY AFFECTING SURVIVAL. (Abstract # 39)**
George Tsoulfas, Randeep Kashyap, Peter Abt, Mark Orloff, Peter Horton, Manoj Maloo, Saman Safadjou, Maureen Graham, Ashokumar Jain, Adel Bozorgzadeh. Rochester, NY, USA.

40 **JUSTIFICATION FOR THE USE OF ECD GRAFTS IN HEPATOCELLULAR CARCINOMA. (Abstract # 40)**
Takahiro Murakami, Javier Chapochnick, Alger Aquino, Ahmed Fahmy, Devon John, Glyn Morgan, Thomas Diflo, Lewis Teperman. New York, NY, USA.

41 **ACTUAL RESULTS OF ELDERLY GRAFTS IN CADAVERIC LIVER TRANSPLANTATIONS AND RETRANSPLANTATIONS. (Abstract # 41)**
Umberto Maggi, Paolo Reggiani, Paolo Bertoli, Giorgio Rossi. Milano, Italy.

42 **INFLUENCE OF ORGAN DONOR PARAMETERS IN GRAFT SURVIVAL AFTER LIVER TRANSPLANTATION. (Abstract # 42)**
Ben-Hur Ferraz-Neto, Rogerio C. Afonso, Francisco Monteiro, Luiz A. Pereira. Sao Paulo, Brazil; Brazil.

43 **IMPACT OF CUMULATIVE RISK FACTORS FOR EXPANDED CRITERIA DONOR ON EARLY SURVIVAL AFTER LIVER TRANSPLANTATION. (Abstract # 43)**
Rogerio C. Afonso, Renato Hidalgo, Jose M. A. Moraes-Junior, Sergio P. Meira-Filho, Fernando Pandullo, Luis E. P. Fonseca, Marcelo B. Rezende, Ben-Hur Ferraz-Neto. Sao Paulo, Brazil.

44 **LONG-TERM SURVIVAL PREDICTORS AFTER LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA. (Abstract # 44)**
Alessandro Giacomoni, Andrea Lauterio, Abdallah Slim, Claudio Zavaglia, Bogdan Dorobantu, Luciano De Carlis. Milan, Italy.

45 **LIVING DONOR LIVER TRANSPLANTATION FOR PATIENTS WITH HEPATOCELLULAR CARCINOMA: EXPANDED CRITERIA OR MORE. (Abstract # 45)**
Deniz Balci, Burcin C. Taner, Murat Dayangac, Baris Akin, Zahide Kurt, Izzet Memi, Cihan Duran, Suleyman Uraz, Huseyin Sen, Omer H. Ayanoglu, Refik Killi, Levent Yalcin, Yildiray Yuzer, Yaman Tokat. Istanbul, Turkey.

46 **COMBINED HEPATOCELLULAR CARCINOMA-CHOLANGIOCARCINOMA: DIAGNOSIS AND OUTCOME OF TRANSPLANTATION. (Abstract # 46)**
Ahmed E. Fahmy, Takahiro Murakami, Devon John, Thomas Diflo, Glyn Morgan, Donna Campbell, Lewis Teperman. New York, NY, USA.

47 **DIFFICULTIES IN THE MANAGEMENT OF POSTTRANSPLANT LYMPHOPROLIFERATIVE DISEASE AFTER PEDIATRIC LIVER TRASNPLANTATION IN BRAZIL. (Abstract # 47)**
Irene K. Miura, Gilda Porta, Renata S. Pugliese, Vera Baggio, Tereza Guimaraes, Joao Seda Neto, Vincenzo Pugliese, Eduardo A. Fonseca, Eduardo Carone, Andre Godoy, Alcides A. Salzedas, Paulo Chapchap. Sao Paulo, Brazil.

48 **LOCO REGIONAL THERAPIES IN HEPATOCELLULAR CARCINOMA: ARE THEY DIFFERENT? (Abstract # 48)**
Alejandro Mejia, Roozbeh Rassadi, Leslie Van Parys, Reem Ghalib, Cheryl Levine. Dallas, TX, USA.

49 **DE NOVO. POST-TRANSPLANT NON-LYMPHOPROLIFERATIVE MALIGNANCIES IN LIVER TRANSPLANT RECIPIENTS. (Abstract # 49)**
Ilka F. S. F. Boin, Marilia I. Leonardi, Raquel Stucchi, Claudio S. R. Coy, Luiz S. Leonardi. Campinas, São Paulo, Brazil.

50 **ORTHOTOPIC LIVER TRANSPLANTATION (OLT) IN PATIENTS WITH HEPATOCELLULAR CARCINOMA (HCC): A LIVER TRANSPLANTATION GROUP EXPERIENCE. (Abstract # 50)**
Claudio A. Marroni, Christina G. S. Fraga, Alex Schwengber, Ajacio B. M. Brandao, Guilhermo Kiss, Alfeu Fleck, Jr., Mario H. Meine, Thomaz Grezzana, Thadeu Cerski, Ian Leipnitz, Eduardo Schlindwein, Maria L. Zanotelli, Guido Cantisani. Porto Alegre, Rio Grande do Sul, Brazil.

51 **ACUTE GRAFT-VERSUS-HOST DISEASE AND KAPOSI SARCOMA FOLLOWING LIVER TRANSPLANTATION. (Abstract # 51)**
Marcos Mucenic, Ajacio B. M. Brandao, Claudio A. Marroni, Maria L. Zanotelli, Guido Cantisani, Renan R. Bonamigo, Maria C. Rey, Kaue M. Duro, Rafael Bonfa. Porto Alegre, RS, Brazil.

52 **CIRRHOTOMIMETIC TYPE OF HEPATOCELLULAR CARCINOMA DIAGNOSED AFTER LIVER TRANSPLANTATION. (Abstract # 52)**
Dong Lak Choi, Mi Kyung Kim, Young Seok Han. Daegu, Republic of Korea.

53 **ORTHOTOPIC LIVER TRANSPLANTATION, COMBINED HEART TRANSPLANTATION AND DOMINO-TRANSPLANTATION IN PATIENTS WITH FAMILIAR AMYLOIDOSIS. (Abstract # 53)**
Ana-Paula Barreiros, Christian Moench, Gertrud Greif-Higer, Marcus Schuchmann, Peter R. Galle, Gerd Otto. Mainz, Germany.

54 **LIVER TRANSPLANTATION FOR ALCOHOLIC CIRRHOSIS: A SINGLE CENTER EXPERIENCE. (Abstract # 54)**
Vladimir Mejzlik, Pavel Studenik, Jiri Ondrasek, Milan Kuman, Jan Cerny. Brno, Czech Republic.

55 **THE EFFECT OF CALCINEURINE INHIBITORS MONOTHERAPY ON HEPATITIS C RECURRENCE IN LIVER TRANSPLANTED PATIENTS. (Abstract # 55)**
Mario Angelico, Laura Tariciotti, Felice Nigro, Ilaria Lenci, Linda De Luca, Leonardo Baiocchi, Andrea Monaco, Daniele Sforza, Matteo Manuelli, Giuseppe Tisone. Rome, Italy.

56 **OUTCOMES OF LIVER TRANSPLANTATION (LT) FOR HEPATOCELLULAR CARCINOMA (HCC) UNDER THE MELD ALLOCATION SYSTEM. (Abstract # 56)**
Kenzo Hirose, Federico Aucejo, Cristiano Quintini, Koji Hashimoto, Shunichi Nakagawa, Renee Bennett, Charles Winans, Bijan Eghtesad, David Vogt, John Fung, Charles Miller. Cleveland, OH, USA.

57 **LIVE DONOR LIVER TRANSPLANTATION FOR POST-KASAI BILIARY ATRESIA IN ADULTS. (Abstract # 57)**
Yusuke Kyoden, Yasuhiko Sugawara, Sumihito Tamura, Noriyo Yamashiki, Yuichi Matsui, Junichi Togashi, Kayo Nojiri, Junichi Kaneko, Norihiro Kokudo, Masatoshi Makuuchi. Bunkyo-ku, Tokyo, Japan.

58 **ADULT LIVER TRANSPLANTATION USING RIGHT LIVER GRAFTS FROM DECEASED DONORS VERSUS LIVING DONORS – A COMPARISON OF THE RECIPIENT'S OUTCOME. (Abstract # 58)**
Jessica Walter, Christian Wilms, Christian Lenk, Lars Mueller, Jong-Sun Kim, Lutz Fischer, Martina Sterneck, Xavier Rogiers, Dieter C. Broering. Kiel, Germany; Hamburg, Germany.

59 **RISK FACTORS FOR LATE RENAL FAILURE AFTER LIVER TRANSPLANTATION. (Abstract # 59)**
Itxarone Bilbao, Cristina Dopazo, Ernesto Castro, Gonzalo Sapisochin, Luis Castells, Alfredo Escartin, Jose L. Lazaro, Inigo Lopez, Joaquin Balsells. Barcelona, Spain.

60 **RECURRENCE OF HEPATITIS C AND BILIARY COMPLICATIONS FOLLOWING LIVER TRANSPLANTATION: A SINGLE CENTER EXPERIENCE. (Abstract # 60)**
Eleonora De Martin, Elizabeth C. Verna, Francesco P. Russo, Marco Senzolo, Maria Guido, Giacomo Germani, Daniele Canova, Annalisa Masier, Martina Gambato, Daniele Neri, Sara Boninsegna, Robert S. Brown, Jr., Patrizia Burra. Padova, Italy; New York, USA.

61 **GRAFT STEATOSIS AFFECTS RECIPIENT QUALITY OF LIFE 10 YEARS AFTER LIVER TRANSPLANTATION. (Abstract # 61)**
Vincent H. Karam, Mylène Sebagh, Kinan Rifai, Didier Samuel, Denis Castaing, Cyrille Feray. Villejuif, France.

62 **CHRONIC RENAL DYSFUNCTION – A RETROSPECTIVE ANALYSIS OF 1173 SINGLE LIVER TRANSPLANTATIONS. (Abstract # 62)**
Volker Schmitz, Gero Puhl, Franziska Moeckel, Zung V. Tran, Martin Stockmann, Andreas Kahl, Ulf Neumann, Peter Neuhaus. Berlin, Germany; Denver, CO, USA.

63 **HIGH RATE OF ENDOMETRIAL PATHOLOGIES IN WOMEN AFTER LIVER TRANSPLANTATION. (Abstract # 63)**
Katarzyna Bobrowska, Zoulika Jabiry-Zieniewicz, Anna Cyganek, Bronislawa Pietrzak, Miroslaw Wielgos, Pawel Kaminski. Warsaw, Poland.

64 **HEPATOPULMONARY SYNDROME – MORBIDITY AND SURVIVAL AFTER LIVER TRANSPLANTATION. (Abstract # 64)**
Maristela Deberaldini, Ana Beatriz B. Arcanjo, Renato F. da Silva, Helen C. C. Felicio, Paulo C. Arroyo, Jr., William J. Duca, Marcia F. da Rocha, Elisabete de Melo, Rita C. M. A. da Silva. Sao Jose do Rio Preto, Sao Paulo, Brazil.

65 **CYSTATIN C AND URINE MICROSCOPY: A NEW STRATEGY FOR MONITORING OF RENAL DYSFUNCTION IN PATIENTS AFTER LIVER TRANSPLANTATION. (Abstract # 65)**
Daniela Kniepeiss, Gerhard Wirnsberger, Philipp Stiegler, Estrella Jakoby, Helmut Mueller, Florian Iberer, Karl-Heinz Tscheliessnigg. Graz, Austria.

66 **SEQUENTIAL ULTRASOUND EXAMINATION OF TRANSPLANTED LIVER ALLOGRAFTS CORRELATE WITH ISCHEMIA-REPERFUSION INJURY AND PROVIDE CLINICALLY RELEVANT INFORMATION ON VASCULAR SUPPLY. (Abstract # 66)**
Joan C. Prowda, Irene J. Lo, John F. Renz. New York, NY, USA.

67 **LONG-TERM RESULTS OF A RANDOMIZED TRIAL ON IMMUNOSUPPRESSION WITH TRANSPLANTATION IN HUMAN. (Abstract # 67)**
Mario Angelico, Daniele Sforza, Leonardo Baiocchi, Ilaria Lenci, Daniele Di Paolo, Alessandra Petrolati, Laura Tariciotti, Andrea Monaco, Alessandro Anselmo, Giuseppe Tisone. Rome, Italy.

68 **RENAL FUNCTION EVALUATION AFTER ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 68)**
Alfeu M. Fleck, Jr., Claudio A. Marroni. Porto Alegre, Rio Grande do Sul, Brazil.

69 **ROLE OF LIVER TRANSPLANTATION IN ADVANCED BUDD-CHIARI SYNDROME: LONG-TERM FOLLOW-UP OF 42 PATIENTS. (Abstract # 69)**
Frank Ulrich, Johann Pratschke, Ulf Neumann, Zelal Güngör, Natascha Nüssler, Jan Langrehr, Sven Jonas, Peter Neuhaus. Berlin, Germany.

70 **LONGTERM SURVIVAL AFTER MULTIPLE RETRANSPLANTATIONS OF THE LIVER; A SINGLE CENTER EXPERIENCE. (Abstract # 70)**
Susumu Eguchi, Hynek Mergental, Danielle Nijkamp, Herman Hendriks, Rene Scheenstra, Els Haagsma, Aad vd Berg, Maarten Slooff. Groningen, Netherlands.

71 **RESULTS IN LIVER TRANSPLANTATION FOR HCC: AN INTENTION-TO-TREAT ANALYSIS FOR 191 PATIENTS. (Abstract # 71)**
Lucio Mandalà, Marcello Spampinato, Giovanni Vizzini, Domenico Biondo, Salvatore Gruttdauria, Marco Spada, Antonio Arcadipane, Angelo Luca, Ugo Palazzo, Bruno Gridelli. Palermo, Italy.

72 **LESSONS LEARNED FROM LIVER TRANSPLANTATION FOR AUTOIMMUNE HEPATITIS. (Abstract # 72)**
Hatem Khalaf, Walid Mourad, Yasser El-Sheikh, Yasser Medhat, Ayman Abdo, Hamad Al-Bahili, Mohammed Al-Sagheir, Mohammed Al-Sofayan, Mohamed Al-Sebayel. Riyadh, Saudi Arabia.

73 **DOPPLER ULTRASOUND HEPATIC ARTERIAL RESISTIVE INDICES ARE SIMILAR AFTER HISTADINE-TRYPTOPHAN KETOGLUTARATE (HTK) OR UNIVERSITY OF WISCONSIN (UW) PRESERVATION IN LIVER TRANSPLANTATION. (Abstract # 73)**
Eduardo J. Ramos, Julie K. Heimbach, Scott L. Nyberg, Michael B. Ishitani, Charles B. Rosen. Rochester, MN, USA.

74 **RISK FACTORS ASSOCIATED WITH THE OCCURRENCE OF DEATH IN PATIENTS SUBMITTED TO ORTHOTOPIC LIVER TRANSPLANTATION (OLT). (Abstract # 74)**
Lisia Hoppe, Claudio A. Marroni, Maria Lucia Zanotelli, Guido P. C. Cantisani, Ajacio B. M. Brandao. Porto Alegre, Rio Grande do Sul, Brazil.

75 **DYNAMICS OF HEMATOLOGICAL DATA AFTER LIVING DONOR LIVER TRANSPLANTATION IN JAPANESE PATIENTS. (Abstract # 75)**
Masatoshi Ishigami, Yoshiaki Katano, Yasuhiro Fujimoto, Tetsuya Kiuchi, Hidemi Goto. Nagoya, Japan.

76 **USE OF SELECTIVE INTERNAL RADIATION SPHERES (SIR-S) AS A BRIDGE FOR LIVER TRANSPLANTATION: TWO CASE REPORTS. (Abstract # 76)**
Alejandro Mejia, Cheryl Levine, Abdullah Mubarak, Travis Vanmeter, Jeffrey Weinstein, Stephen Cheng, Reem Ghalib. Dallas, TX, USA.

77 **BILE DUCT INJURIES: MANAGEMENT FROM THERAPEUTIC ENDOSCOPY TO LIVER TRANSPLANTATION. (Abstract # 77)**
Rodrigo Amil, Marcelo Enne, Alexandre Cerqueira, Jefferson Alves, Jose Martinho, Glauber Gouvea, Lucio Auler, Rodrigo Diaz, Elisabeth Balbi, Lucio Pacheco. Rio de Janeiro, Brazil.

78 **INFECTION BY CYTOMEGALOVIRUS (CMV) AND ITS RELATION WITH MORTALITY FOLLOWING ORTHOTOPIC LIVER TRANSPLANTATION (OLT). (Abstract # 78)**
Lisia Hoppe, Claudio A. Marroni, Ajacio B. M. Brandao, Maria Lucia Zanotelli, Guido P. C. Cantisani. Porto Alegre, Rio Grande do Sul, Brazil.

79 **INTESTINAL TUBERCULOSIS AFTER LIVER TRANSPLANTATION. (Abstract # 79)**
Ivan Zyngier, Ana Carolina Gonzalez, Joyce Roma, Kelly Flausino, Zulane Veiga, Maricarmem Pan, Cassia Guedes, Denise Leite, Jefferson Alves, Rodrigo Amil, Marcia Halpern, Alexandre Cerqueira, Marcelo Enne, Lucio Pacheco-Moreira, Elizabeth Balbi. Rio de Janeiro, Brazil.

80 **EARLY EXPERIENCE WITH HEADS: HEPATIC ENCEPHALOPATHY ASSESSMENT DRIVING SIMULATOR. (Abstract # 80)**
Scott L. Nyberg, Edwina S. Baskin-Bey, Mary M. Mitchell, John P. Bida, Theodore J. Rosenthal, Charmaine A. Stewart. Rochester, MN, USA; Hawthorne, CA, USA.

81 **EVOLUTION OF MELD AND CHILD-PUGH SCORES DURING WAITING TIME TO LIVER TRANSPLANTATION. (Abstract # 81)**
Agnaldo S. Lima, Leandro Amado, Gustavo V. C. Pinto, Carmencita L. M. Ferreira, Eduardo G. Vilela, Cláudia A. Couto, Leandro A. Fonseca, Alexandre P. Resende, Marcelo M. C. França, André L. R. Seabra. Belo Horizonte, MG, Brazil.

82 **IMPACT OF MELD SCORE IN THE WAITING LIST TIME IN BRAZIL. (Abstract # 82)**
Andre I. David, Fabiana M. Linard, Adriana Z. Coppini, Rafael A. Pecora, Nancy T. Cordovani, Sergio S. Favero, Wangles V. Soler, Paulo C. Massarollo. Sao Paulo, SP, Brazil; Sao Paulo, SP, SP.

83 **ADULT LIVING DONOR LIVER TRANSPLANTATION – THE ONLY ALTERNATIVE TO THE PATIENT CHILD C WITH LOW MELD SCORE. (Abstract # 83)**
Thiago Beduschi, Thomson M. Palma, Vinicius M. R. Silva, Ana Olga N. G. F. Mies, Ana Suely C. Zan, Bianca DellaGuardia, Carlos E. S. Baia, Eloiza H. Quintela, Leonardo R. Ferraz, Marcio D. de Almeida, Margareth P. Lallee, Osvaldo I. Pereira, Sergio Mies. Sao Paulo, SP, Brazil.

84 **SURVIVAL ANALYSIS AFTER LIVER TRANSPLANTATION ACCORDING TO DELTA MELD SCORE. (Abstract # 84)**
Ilka F. S. F. Boin, Marilia I. Leonardi, Raquel Stucchi, Tiago S. Pereira, Luiz S. Leonardi. Campinas, São Paulo, Brazil.

85 **A STUDY OF POSSIBILITY FOR ALCHOOL ABUSE IN PATIENTS WITH HEPATIC CIRROSIS IN THE PROGRAM OF LIVER TRANSPLANTATION. (Abstract # 85)**
Isabel Warwar, Marilia Leonardi, Ilka Boin, Silva Glauce, Luiz Leonardi. Campinas, Sao Paulo, Brazil.

86 **TWO-HUNDRED THIRTY FOUR PEDIATRIC LIVER TRANSPLANTS AT A SINGLE-CENTER: LONG-TERM OUTCOMES FOR BILIARY ATRESIA (BA), FULMINANT HEPATIC FAILURE (FHF), METABOLIC DISORDERS (MD) AND PRIMARY MALIGNANCY (PM). (Abstract # 86)**
M. Hughes, A. Gruessner, E. Gross, T. Nguyen, R. Garcia-Roca, R. Kandaswamy, A. Humar, W. Payne, R. Gruessner. Minneapolis, MN, USA.

87 **SOCIAL ASPECTS OF PEDIATRICS LIVER TRANSPLANT CANDIDATES AT SANTA CASA OF SÃO PAULO, BRAZIL. (Abstract # 87)**
Marcia Turolla, Andre I. David, Norma A. Amaral, Pacheco P. Bernadete, Leila M. Bocchi, Nancy T. Cordovani, Paulo C. Massarollo. Sao Paulo, SP, Brazil.

88 **THE INFLUENCE OF PELD SCORE ON MORTALITY OF CHILDREN UNDERGOING LIVER TRANSPLANT – ANALYSIS OF 91 PATIENTS. (Abstract # 88)**
Julio C. Wiederkher, Sabryna L. Werneck, Izabel M. Celho-Lemos, Sandra L. Schüler, Luiz R. Farion, Daniele D. Ouno, Sylvio A. Avilla, Claudio Schulz. Curitiba, PR, Brazil.

89 **LONG-TERM EVALUATION OF CYCLOSPORINE AND TACROLIMUS BASED IMMUNOSUPPRESSION IN PEDIATRIC LIVER TRANSPLANTATION. (Abstract # 89)**
Wibke Hasenbein, Johannes Albani, Cornelia Englert, Aranke Spehr, Enke Grabhorn, Markus J. Kemper, Martin Burdelski, Rainer Ganschow. Hamburg, Germany.

90 **CLASSIFICATION AND PROGNOSIS OF INTRAHEPATIC BILIARY STRICTURE AFTER LIVER TRANSPLANTATION. (Abstract # 90)**
Hae Won Lee, Kyung-Suk Suh, Woo Young Shin, Eung-Ho Cho, Jai Young Cho, Nam-Joon Yi, Jung-Hwan Yoon, Hee Chul Yu, Baik Hwan Cho, Kuhn Uk Lee. Seoul, Republic of Korea; Jeonbuk, Republic of Korea.

91 **MANAGEMENT OF POLYCYSTIC LIVER DISEASE IN 55 CASES: A 30-YEAR EXPERIENCE AT A SINGLE INSTITUTION. (Abstract # 91)**
Daniel Azoulay, Gerard Pascal, Denis Castaing. Villejuif, France, Metropolitan.

92 **CLINICAL OUTCOME OF PREOPERATIVE PORTAL VEIN THROMBOSIS IN LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 92)**
D. G. Kim, C. Y. Lee, S. J. Kim, I. S. Moon, M. D. Lee. Seoul, Republic of Korea.

93 **SURGICAL OPTIONS IN DIFFUSE PORTAL VENOUS SYSTEM THROMBOSIS. IS THE LIVER A TOTAL FUEL ENGINE? A SYSTEMATIC REVIEW. (Abstract # 93)**
Marcelo Enne, Douglas Neves, Lucio Pacheco-Moreira, José Manoel Martinho. Rio de Janeiro, RJ, Brazil; Brazil.

94 **SURGICAL TECHNIQUE FOR OUTFLOW RECONSTRUCTION IN DOMINO LIVER TRANSPLANTATION WITH INFERIOR VENA CAVA PRESERVATION. (Abstract # 94)**
Marcelo Enne, Lucio Pacheco-Moreira, Elizabeth Balbi, Alexandre Cerqueira, Jefferson Alves, José-Manoel Martinho. Rio de Janeiro, RJ, Brazil; Rio de Janeiro, Brazil.

95 **PORTAL VEIN THROMBOSIS ON PRE-TRANSPLANT IMAGING IS PREDICTIVE OF DECREASED LONG-TERM GRAFT SURVIVAL IN CADAVERIC LIVER TRANSPLANTATION. (Abstract # 95)**
Rodrigo M. Vianna, Richard S. Mangus, Jonathan A. Fridell, Joseph Tector. Indianapolis, IN, USA.

96 **DRAINAGE OF THE ANTERIOR SECTION USING AN ARTIFICIAL VASCULAR GRAFT IMPROVED THE ONE-YEAR SURVIVAL RATE WITHOUT SIGNIFICANT MORBIDITY IN RIGHT LIVER TRANSPLANTATION. (Abstract # 96)**
Nam-Joon Yi, Kyung-Suk Suh, Hae-Won Lee, Eung-Ho Cho, Woo Young Shin, Jai Young Cho, Hee Chul Yu, Baik Hwan Cho, Kuhn Uk Lee. Seoul, Korea.

97 **ADULT TO ADULT LIVING DONOR LIVER TRANSPLANTATION WITHOUT BLOOD TRANSFUSION. (Abstract # 97)**
Chih-Chi Wang, Shridhar Iyer, Chao-Long Chen, Shih-Ho Wang, Yueh-Wei Liu, Allan Concejero, Chee-Chien Yong, Chin-Hsiang Yang, Amornetta Jordan, Bruno Jawan. Kaohsiung, Taiwan.

98 **"I"-"V" VENOPLASTY OF THE OUTFLOW TRACT IN RIGHT LOBE-LDLT WITH MIDDLE HEPATIC VEIN FROM LIVING DONOR. (Abstract # 98)**
Yang-Il Kim, Shogo Fujita, Shunji Kawamoto, Takayuki Kanemaru, Kazuo Inada, Shuji Nagao. Kasuga, Fukuoka, Japan.

99 **OUTFLOW RECONSTRUCTION USING INTERPOSITION GRAFT FOR ADULT LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 99)**
Amornetta Jordan, Chao-Long Chen, Chih-Chi Wang, Shih-Ho Wang, Yeuh-Wei Liu, Chin-Hsiang Yang, Chee-Chien Yong, Allan Concejero, Shridhar Iyer. Kaohsiung, Taiwan.

100 **CYTOKINES PATTERNS IN LIVER TRANSPLANTATION: VENO-VENOUS BYPASS X PIGGYBACK TECHNIQUE. (Abstract # 100)**
Carlos E. S. Baia, Edson Abdala, Paulo C. B. Massarollo, Sergio Mies. Sao Paulo, SP, Brazil.

101 **A SIMPLE AND INEXPENSIVE TECHNIQUE OF UPPER ABDOMINAL WALL RETRACTION IN PEDIATRIC LIVER TRANSPLANTATION AND SURGERY. (Abstract # 101)**
Tsan-Shiun Lin, Allan M. Concejero, Chao-Long Chen, Chih-Chi Wang, Shih-Ho Wang, Yueh-Wei Liu, Chee-Chien Yong, Chin-Hsiang Yang. Kaohsiung, Taiwan.

102 **VASCULAR COMPLICATIONS AFTER LIVER TRANSPLANTATION: A SINGLE CENTER EXPERIENCE. (Abstract # 102)**
Hatem Khalaf, Hamad Al-Suhaibani, Hamad Al-Bahili, Yasser El-Sheikh, Mohammed Al-Sagheir, Mohammed Al-Sofayan, Mohamed Al-Sebayel. Riyadh, Saudi Arabia.

103 **ANATOMICAL BASIS OF LIVER HANGING MANEUVER FOR LRLT OR SPLIT LIVER: A CLINICAL AND ANATOMICAL IN VIVO STUDY. (Abstract # 103)**
Giuseppe M. Ettorre, Richard Douard, Roberto Santoro, Giovanni Vennarecci, Lucia Miglioresi, Mario Antonini, Eugenio Santoro. Rome, Italy; Paris, France.

104 **RANDOMIZED CLINICAL ASSAY FOR HEPATIC GRAFTS PRESERVATION WITH UW OR HTK SOLUTIONS IN ORTOTHOPIC LIVER TRANSPLANTION. (Abstract # 104)**
Mario H. Meine, Maria L. Zanotelli, Tomaz J. Grezzana, Ian Leipnitz, Eduardo S. Schlindwein, Guillermo Kiss, Alfeu M. Fleck, Jr., Ajacio M. Brandao, Claudio A. Marroni, Guido P. C. Cantisani. Porto Alegre, Rio Grande do Sul, Brazil.

105 **RELATIONSHIP BETWEEN THE TYPE OF ARTERIAL RECONSTRUCTION AND ARTERIAL COMPLICATION IN 200 CONSECUTIVE LIVER TRANSPLANTS. (Abstract # 105)**
Osvaldo I. Pereira, Paulo C. B. Massarollo, Ana Olga N. G. F. Mies, Carlos E. S. Baía, Margareth P. Lallée, Sergio Mies. Sao Paulo, SP, Brazil.

106 **DIAGNOSIS AND MANAGEMENT OF POST LIVER TRANSPLANT (OLT) PORTAL VEIN STENOSIS. (Abstract # 106)**
Shunichi Nakagawa, Naveed Ahmed, Federico Ahmed, Bijan Eghtesad, Dympna Kelly, John Fung, Charles Miller. Cleveland, USA.

107 **VENOPLAST USING NATIVE PORTAL VEIN IN TYPE 3 PORTAL VEIN ANOMALY. (Abstract # 107)**
Joo S. Kim, Soo J. Kim, Jin W. Park, Han J. Kim, In K. Kim, Jang Y. Jeon, Sung E. Jeon, Jae P. Jung, Samuel Lee. Seoul, Korea.

108 **THE SIGNIFICANCE OF INTERRUPTION OF LARGE SPONTANEOUS PORTOSYSTEMIC COLLATERALS IN LIVING DONOR LIVER TRANSPLANTATION AS A GRAFT SALVAGE PROCEDURE. (Abstract # 108)**
BeomSik Shin, Deok-Bog Moon, Sung-Gyu Lee, ChulSoo Ahn, KiHun Kim, Shin Hwang, KwangMin Park, TaeYong Ha, GiWon Song, DongHwan Jung, JeongIk Park, HyoJun Lee, JeHo Ryu, KwanWoo Kim, HeeSeong Kim, KyeongHun Ko. Seoul, Republic of Korea.

109 **TWO-STEP CLOSURE OF ABDOMINAL WALL WITH IMPLANTATION OF POLYPROPYLENE MESH IN ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 109)**
Piotr Smoter, Krzysztof Zieniewicz, Anna Skwarek, Marek Krawczyk. Warsaw, Poland.

110 **BILIARY COMPLICATIONS AFTER LIGATION OF HEPATIC DUCT STUMP IN DONOR HEPATECTOMY IN LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 110)**
Satoshi Kaihara, Koichi Kozaki, Hidetaka Ushigome, Shuji Nobori, Kiyokazu Akioka, Masahiko Okamoto, Norio Yoshimura. Kyoto, Japan.

111 **PULMONARY EMBOLISM AFTER CYANOACRYLATE TREATMENT DUE TO GASTROESOPHAGEAL VARICES AFTER LIVER TRANSPLANTATION. (Abstract # 111)**
Ilka F. S. F. Boin, Marilia I. Leonardi, Marcelo A. Camargo, Ciro G. Montes, Elaine A. Cardoso, Luiz S. Leonardi. Campinas, São Paulo, Brazil.

112 **HEPATIC VEIN RECONSTRUCTION IN EXTENDED RIGHT LOBE GRAFT USING QUILT VENOPLASTY. (Abstract # 112)**
Ki-Hun Kim, Sung-Gyu Lee, Shin Hwang, Chul-Soo Ahn, Dong-Hwan Jung, Bum-Soo Kim, Dong-Hwan Jung, Jung-Ik Park, Kyung-Hoon Koh, Bum-Sik Shin, Jung-Ja Hong, Eun-Bok Lee. Seoul, Korea.

113 **RETRANSPLANTATION FOR RECURRENT HEPATITIS C VIRUS INFECTION: A SINGLE CENTER CONTROLLED TRIAL. (Abstract # 113)**
Elizabeth Gross, Forrest Dodson, Mariano Dy-Liacco, Cohen Stanley, Ahn Joseph, Van Thiel David. Chicago, IL, USA.

114 **THYMOGLOBULINE INDUCTION AND LOW-DOSE POSTOPERATIVE IMMUNOSUPPRESSION INFLUENCES OUTCOME OF ANTIVIRAL THERAPY AGAINST HCV RECURRENCE IN LIVER TRANSPLANTATION: LONG-TERM RESULTS. (Abstract # 114)**
Nicola De Ruvo, Fabrizio Di Benedetto, Michele Masetti, Roberto Montalti, Alberto Pierini, Rosa Maria Iemmolo, Maria Grazia De Blasiis, Giorgio E. Gerunda. Modena, Italy.

115 **HEPATOCELLULAR CARCINOMA AND RECURRRENCE OF HEPATOCARCINOMA ARE ASSOCIATED WITH HBV RECURRENCE AFTER LIVER TRANSPLANTATION. ROLE OF TUMORAL CELLS IN HBV REPLICATION. (Abstract # 115)**
Luciana C. Faria, Michelle Gigou, Anne-Marie Roque-Afonso, Mylene Sebagh, Bruno Roche, Teresa C. A. Ferrari, Catherine Guettier, Denis Castaing, Samuel Didier. Villejuif, France; Belo Horizonte, Minas Gerais, Brazil.

116 **INVASIVE FUNGAL INFECTIONS IN LIVER TRANSPLANT RECIPIENTS. (Abstract # 116)**
Luiz F. Lisboa, Patrícia R. Bonazzi, Telésforo Bacchella, Marcel C. C. Machado, Edson Abdala. São Paulo, SP, Brazil.

117 **ADULT LIVER TRANSPLANTATION IN HIV-INFECTED PATIENTS: SINGLE CENTER EXPERIENCE. (Abstract # 117)**
Michele Masetti, Giovanni Guaraldi, Antonio Romano, Fabrizio Di Benedetto, Nicola De Ruvo, Stefania Cocchi, Mauro Codeluppi, Gian Piero Guerrini, Roberto Montalti, Rosa Iemmolo, Giorgio E. Gerunda. Modena, Italy.

118 **COMBINATION ANTIVIRAL THERAPY USING TAILORED REGIMES IMPROVES OUTCOMES IN RECURRENT HEPATITIS C FOLLOWING LIVER TRANSPLANT: RESULTS OF A PROSPECTIVE TRIAL. (Abstract # 118)**
Jacob Korula, Kristi Butenschoen, Hector Ramos, Tariq Shah, Robert Naraghi, Yong Cho, Richard Lopez. Los Angeles, CA, USA.

119 **SHOULD FIBROSIS SCORE IN POST LIVER TRANSPLANT ALLOGRAFT FOR HEPATITIS C RECURRENCE BE ALWAYS ESTIMATED WITH GOMORI TRICHROME STAIN? (Abstract # 119)**
Ashokkumar Jain, Charlotte Ryan, Mark Orloff, Peter Abt, Pat Milot, Adel Bozorgzadeh. Pittsford, NY, USA.

120 **ACTIVE IMMUNIZATION IN PATIENTS WHO UNDERWENT LIVER TRANSPLANTATION FOR HBV-RELATED LIVER DISEASE. (Abstract # 120)**
Hae Won Lee, Kyung-Suk Suh, Woo Young Shin, Eung-Ho Cho, Jai Young Cho, Nam-Joon Yi, Jung-Hwan Yoon, Hee Chul Yu, Baik Hwan Cho, Kuhn Uk Lee. Seoul, Republic of Korea; Jeonbuk, Republic of Korea.

121 **INVASIVE FUNGAL INFECTIONS FOLLOWING LIVER TRANSPLANTATION; RISK FACTORS, INCIDENCE AND OUTCOME-SINGLE CENTRE EXPERIENCE. (Abstract # 121)**
Marek Pacholczyk, Beata Lagiewska, Leszek Adadynski, Gajusz Gontarczyk, Dariusz Wasiak, Janusz Trzebicki, Andrzej Kobryn, Pawel Ziemianski, Andrzej Chmura. Warsaw, Poland.

122 **PARACOCCIDIOIDOMYCOSIS AND LIVER TRANSPLANTATION: CASE REPORT. (Abstract # 122)**
Marcio D. Almeida, Bianca Della-Guardia, Luis F. A. Camargo, Denise C. Pasqualin, Vinicius M. R. Silva, Thiago Beduschi, Thomson M. Palma, Sergio Mies. Sao Paulo, SP, Brazil.

123 **CLASSICAL DENGUE FEVER AFTER LIVER TRANSPLANTATION. (Abstract # 123)**
Gustavo R. Coelho, Jose T. Valenca Junior, Tarciso Daniel S. Rocha, Cyntia F. G. Viana, Bronner P. A. Goncalves, Evelyne S. Girao, Marcos Aurelio P. Barros, Claudia R. Fernandes, Joao Batista M. Vasconcelos, Jose Huygens P. Garcia. Fortaleza, Ceara, Brazil.

124 **POTENTIAL INHIBITING ROLE OF FTY720 IN LIVER FIBROSIS. (Abstract # 124)**
Amedeo Carraro, Enrico Gringeri, Anna Maria Brunati, Domenico Bassi, Francesco D'Amico, Jr., Umberto Cillo. Padova, Italy.

125 **OXYGENATED MACHINE PERFUSION OF NON-HEART-BEATING DONOR LIVERS AT DIFFERENT TEMPERATURES. (Abstract # 125)**
Peter Olschewski, Wenzel Schoening, Volker Schmitz, Peter Neuhaus, Gero Puhl. Berlin, Germany.

126 **IMPACT OF STEROIDS ON HEPATITIS C REPLICATION IN VITRO. (Abstract # 126)**
Scot D. Henry, Jeroen van Dijck, Herold J. Metselaar, Hugo W. Tilanus, Luc J. W. van der Laan. Rotterdam, Netherlands.

127 **GENE EXPRESSION PROFILE IN THE LIVER DURING ACUTE CELLULAR REJECTION. (Abstract # 127)**
Keizo Dono, Shigeru Marubashi, Shogo Kobayashi, Naoki Hama, Tadafumi Asaoka, Kunihito Gotoh, Hidenori Takahashi, Atsushi Miyamoto, Yutaka Takeda, Koji Umeshita, Tomoaki Kato, Phillip Ruiz, Andreas G. Tzakis, Morito Monden. Suita City, Osaka, Japan; Miami, FL, USA.

128 **DOES DONOR AND RECIPIENT EICOSANOIDES BLOOD LEVEL CORRESPOND WITH INTRAOPERATIVE HEPATIC BLOOD FLOW AND EARLY LIVER ALLOGRAFT FUNCTION. (Abstract # 128)**
Gajusz Gontarczyk, Beata Lagiewska, Marek Pacholczyk, Maciej Kosieradzki, Piotr Tomaszewski, Lidia Jureczko, Leszek Adadynski, Wojciech Lisik, Dariusz Wasiak, Janusz Trzebicki, Andrzej Chmura. Warsaw, Poland.

129 **MANIFESTATIONS OF LIVER DISEASES IN SEVERE OBESE PATIENTS. (Abstract # 129)**
Wojciech Lisik, Zbigniew Wierzbicki, Justyna Domienik, Maciej Kosieradzki, Jacek Borowski, Janusz Trzebicki, Andrzej Chmura, Wojciech Rowinski. Warsaw, Poland.

130 **MASSIVE HEMOBILIA AFTER PERCUTANEOUS CHOLANGIOGRAPHY TREATED BY SUPERSELECTIVE EMBOLIZATION IN A LIVER TRANSPLANT RECIPIENT. (Abstract # 130)**
Ilka F. S. F. Boin, Marcelo A. Camargo, Walmir C. Oliveira, Marilia I. Leonardi, Raquel Stucchi, Luiz S. Leonardi. Campinas, São Paulo, Brazil; Campinas, Sao Paulo, Brazil.

131 **ABO-INCOMPATIBLE LIVER TRANSPLANTATION FOR CRITICALLY ILL ADULT PATIENTS. (Abstract # 131)**

Christian Toso, Mohammed Al-Qahtani, Faisal A. Alsaif, David L. Bigam, Glenda A. Meeberg, James A. M. Shapiro, Vincent G. Bain, Norman M. Kneteman. Edmonton, AB, Canada.

132 **COULD THE MELD SCORE BE USEFUL IN ACUTE LIVER FAILURE SCENARIO TO DEFINE PATIENTS BEYOND THE LIVER TRANSPLANTATION TIME? (Abstract # 132)**

Lucio F. Pacheco-Moreira, Elizabeth Balbi, Thiago B. Annunziata, Joyce Roma, Karina P. dos Santos, Marcelo Enne. Rio de Janeiro, Brazil; Niteroi, Brazil.

133 **LONG TERM OUTCOME OF LIVER TRANSPLANTATION FOR ACUTE LIVER FAILURE DUE TO HEPATITIS B AND RESPONSE TO VACCINATION. (Abstract # 133)**

Gustavo Braslavsky, Elizabeth Orieta, Nora Cejas, Pedro Trigo, Javier Lendoire, Oscar Imventarza. Buenos Aires, Argentina.

134 **EMERGENCY LIVING DONOR LIVER TRANSPLANTATION FOR FULMINANT HEPATIC FAILURE. (Abstract # 134)**

R. Kakodkar, A. S. Soin, S. Saigal, S. Nundy. New Delhi, India.

135 **HEPATIC TRANSPLANTATION FOR FULMINANT HEPATIC FAILURE BY KETOCONAZOL. (Abstract # 135)**

Pedro L. Trigo, Gabriel Aballay, Gustavo Braslavsky, Nora Cejas, Fernando Duek, Graciela Cueto, Carlos Quarin, Diana Rodriguez, Pablo Barros, Marcelo Amante, Alejandra Oks, Javier Lendoire, Oscar Imventarza. Ciudad Autonoma de Buenos Aires, Buenos Aires, Argentina.

The International Liver Transplantation Society
Day-at-a-Glance, Thursday, June 21, 2007

7:00 AM – 8:00 AM **Sunrise Symposium**

Page 20 **Liver Transplantation in Latin America**
Room: Gavea A&B, 5th Floor

8:00 AM – 10:00 AM **Rising Star Symposium**

Page 20 *Room: Gavea A&B, 5th Floor*

10:00 AM – 10:30 AM **Coffee Break**

Room: Copacabana, 5th Floor

10:30 AM – 12:00 PM **Featured Symposium**

Page 20 **Malignancies**
Room: Gavea A&B, 5th Floor

12:00 PM – 12:30 PM **State-of-the-Art Lecture**

Page 21 **Liver Transplantation: Then and Now**
Room: Gavea A&B, 5th Floor

12:30 PM – 2:00 PM **Novartis Pharma AG Sponsored Lunch Symposium**

Page 21 *Room: Gavea A&B, 5th Floor*

2:00 PM – 2:30 PM **Break**

2:30 PM – 4:00 PM **Interactive Session I - Anesthesia and Critical Care Medicine**

Page 21 **High Risk Patients: Contraindications, Monitoring and Management**
Room: Ipanema, 26th Floor

2:30 PM – 4:00 PM **Concurrent Sessions**

Page 21 **Basic Science**
Room: Vidigal A&B, 5th Floor

Page 22 **Living Donors**
Room: Gavea B, 5th Floor

Page 23 **Recurrent Disease**
Room: Gavea A, 5th Floor

4:00 PM – 4:30 PM **Coffee Break**

Room: Copacabana, 5th Floor

4:30 PM – 6:00 PM **Interactive Session II - Anesthesia and Critical Care Medicine**

Page 23 **High Metabolic and CNS Risk Patients: Contraindications, Monitoring and Management**
Room: Ipanema, 26th Floor

4:30 PM – 6:00 PM **Concurrent Sessions**

Page 24 **Immunosuppression**
Room: Gavea A, 5th Floor

Page 24 **Late Breaking**
Room: Vidigal A&B, 5th Floor

Page 25 **Malignancies**
Room: Gavea B, 5th Floor

6:00 PM – 6:30 PM **Poster Grand Rounds Session II**

Page 26 **Comments on Chosen Posters**
Room: Vidigal A&B, 5th Floor

6:00 PM – 7:00 PM **Poster Session II**

Page 26 **Presenters in Attendance**
Room: Leme, 5th Floor

Thursday, June 21, 2007

Sunrise Symposium: Liver Transplantation in Latin America
7:00 AM – 8:00 AM

Room: Gavea A&B, 5th Floor
Chairs: Paulo Chapchap, MD, Hospital Sirio Libanes, Sao Paulo, Brazil & Erwin Buckel, MD, Clinic Las Condes, Santiago, Chile

7:00 AM **OLT Activity in 2006**
Maria Lúcia Zanotelli, MD
Hospital das Clínicas de Porto Alegre
Sao Paulo, Brazil

7:15 AM **Organ Allocation and LDLT in Argentina**
Eduardo de Santibanes, MD
Hospital Italiano de Buenos Aires
Buenos Aires, Argentina

7:30 AM **How We Deal with Limited Resources in Liver Transplantation**
Eduardo Carone, MD
Hospital Sirio Libanes
Sao Paulo, Brazil

7:45 AM **Ethics in Liver Transplantation**
Silvano M.A. Raia, MD
Universidade de Sao Paulo
Sao Paulo, Brazil

Rising Star Symposium
8:00 AM – 10:00 AM

*Supported by an Unrestricted Educational Grant from Novartis Pharma AG.

Room: Gavea A&B, 5th Floor
Chairs: Timothy M. McCashland, MD, University of Nebraska Medical Center, Omaha, United States & Sue V. McDiarmid, MD, University of California, Los Angeles, Los Angeles, United States

8:00 AM **ROLE OF LIVER HISTOLOGY IN THE MANAGEMENT OF ACUTE LIVER FAILURE IN CHILDREN. (Abstract # 136)**
Jonathan M. Hind, Alberto Quaglia, Rachel Taylor, Anil Dhawan. London, United Kingdom.

8:20 AM **INTERLEUKIN 10 MEDIATES CYTOPROTECTION AGAINST LIVER ISCHEMIA/REPERFUSION INJURY BY SELECTIVELY SUPPRESSING ERK ACTIVATION. (Abstract # 137)**
Yuan Zhai, Feng Gao, Ronald W. Busuttil, Jerzy W. Kupiec-Weglinski. Los Angeles, CA, USA.

8:40 AM **ACTIVATION OF THE TRANSCRIPTION FACTOR NRF-2 IN DONOR LIVER DURING ISCHEMIA REPERFUSION IS ASSOCIATED WITH LESS INFLAMMATORY DAMAGE AND LOWER TRASAMINASE LEVELS POST-TRANSPLANT. (Abstract # 138)**
Muhammad B. Zaman, Elizabeth J. Ryan, Martin O. Leonard, Niamh P. Nolan, Donal Maguire, Hugh Mulcahy, Oscar Traynor, Cormac T. Taylor, John Hegarty, Justin G. Geoghegan, Cliona O'Farrelly. Dublin, Ireland.

9:00 AM **INSIGHTS OF THE MOLECULAR PATHWAYS INVOLVED IN HCV CIRRHOSIS: IS THERE A RELATIONSHIP WITH HCV RECURRENCE POST-LIVER TRANSPLANTATION? (Abstract # 139)**
Valeria R. Mas, Robert A. Fisher, Kellie Archer, Adrian H. Cotterell, Marc P. Posner, Yanek Kenneth, Daniel G. Maluf. Richmond, VA, USA.

9:20 AM **INTRAVENOUS IMMUNOGLOBULINS REDUCE ALLOGENEIC T-CELL ACTIVATION AFTER LIVER TRANSPLANTATION BY MODULATING THE INTERACTION BETWEEN DENDRITIC CELLS AND NK-CELLS. (Abstract # 140)**
T. Tha-In, J. Kwekkeboom, H. W. Tilanus, Z. M. Groothuismink, P. M. van Hagen, G. Kazemier, E. J. Kuipers, R. A. de Man, H. J. Metselaar. Rotterdam, Netherlands.

9:40 AM **DISTINCT GENE SIGNATURES LINKED TO ACUTE PHASE INJURY AND TUMOR INVASIVENESS IN TUMOR DEVELOPMENT AFTER LIVER TRANSPLANTATION USING SMALL-FOR-SIZE GRAFTS. (Abstract # 141)**
Kendrick Co Shih, Kwan Man, Kevin T. P. Ng, Jiang-Wei Xiao, Sheung-Tat Fan, Chung-Mau Lo. Hong Kong, China.

Coffee Break
10:00 AM – 10:30 AM

Room: Copacabana, 5th Floor

Featured Symposium: Malignancies
10:30 AM – 12:00 PM

Room: Gavea A&B, 5th Floor
Chairs: Nancy L. Ascher, MD, PhD, University of California, San Francisco, San Francisco, United States & Sergio Mies, MD, Universidade de Sao Paulo, Sao Paulo, Brazil

10:30 AM **Expanding the Criteria in HCC and Critical Evaluation of Neoadjuvant and Adjuvant Treatment**
Francis Yao, MD
University of California, San Francisco
San Francisco, United States

10:45 AM **Predicting the Result of Liver Transplantation for HCC Beyond Milan Criteria**
Vincenzo Mazzaferro, MD
National Cancer Center of Milan
Milan, Italy

11:00 AM **HCC: Rescue or Preemptive Transplantation after Resection**
Juan Garcia-Valdecasas, MD, PhD
Hosp Clinic I Provincial
Barcelona, Spain

11:15 AM **Case Presentation**
Nancy Ascher, MD, PhD
University of California, San Francisco
San Francisco, United States

11:30 AM **Current Treatment for Cholangiocarcinoma**
Russell Wiesner, MD
Mayo Clinic, Rochester
Rochester, United States

11:45 PM **Case Presentation**
Nancy Ascher, MD, PhD
University of California, San Francisco
San Francisco, United States

State-of-the-Art Lecture
12:00 PM - 12:30 PM

Room: Gavea A&B, 5th Floor
Chair: R. Mark Ghobrial, MD, PhD, University of California, Los Angeles, Los Angeles, United States

Liver Transplantation: Then and Now
Ronald W. Busuttil, MD, PhD
University of California, Los Angeles
Los Angeles, United States

Novartis Pharma AG Sponsored Lunch Symposium
12:30 PM – 2:00 PM

Room: Gavea A&B, 5th Floor

Break
2:00 PM – 2:30 PM

Interactive Session I – Anesthesia and Critical Care Medicine
High Risk Patients: Contraindications, Monitoring and Management
2:30 PM – 4:00 PM

Room: Ipanema, 26th Floor
Chair: William T. Merritt, MD, MBA, Johns Hopkins Hospital, Baltimore, United States & Flavio Takaoka, MD, Hospital Albert Einstein, Sao Paulo, Brazil

2:30 PM **Pulmonary Thrombembolism during OLT**
Michael A. Ramsay, MD
Baylor University Medical Center
Dallas, United States

2:40 PM **Perioperative Cardiac Dysfunction in the Cirrhotic Patient: Diagnosis and Management**
James Findlay, MD
Mayo Clinic, Rochester
Rochester, United States

2:50 PM **Managing Severe Perioperative Coagulopathy**
Claus Niemann, MD
University of California, San Francisco
San Francisco, United States

2:30 PM **HYPERCOAUGLATION, INTRACARDIAC THROMBOSIS, AND HEPARIN TREATMENT DURING ORTHOTOPIC LIVER TRANSPLANTATION: A CASE REPORT. (Abstract # 142)**
Yoogoo Kang, Madhavi Pradhan, Cataldo Doria, Elia Elia, Carlo Ramirez. Philadelphia, PA, USA.

2:40 PM **EARLY DIAGNOSIS OF LEFT-SIDED AIR EMBOLISM BY TRANSESOPHAGEAL ECHOCARDIOGRAPHY AND MANAGEMENT BY LUNG ISOLATION IN ORTHOTROPIC LIVER TRANSPLANTAION: A CASE REPORT. (Abstract # 143)**
Elia S. Elia, Robin Mukerjee, Cataldo Doria, Yoogoo Kang. Philadelphia, USA; USA.

2:50 PM **ISOELECTRIC BIS™ RESPONSIVE TO PHOTIC STIMULATION DURING OLT FOR FULMINANT HEPATIC FAILURE. (Abstract # 144)**
Roman Schumann, Jana Hudcova. Boston, MA, USA.

Concurrent Session: Basic Science
2:30 PM – 4:00 PM

Room: Vidigal A&B, 5th Floor
Chairs: Pierre Clavien, MD, PhD, University Hospital Zurich, Zurich, Switzerland & Luc van der Laan, PhD, Erasmus MC - University Medical Center, Rotterdam, Netherlands

2:30 PM **INSULINOPENIA AND INSULIN-RESISTANCE DELAY LIVER REGENERATION IN MICE. (Abstract # 145)**
Olaf Guckelberger, M. D. Micheal, S. B. Biddinger, C. Schoebel, S. Reuter, P. Neuhaus, C. R. Kahn, S. C. Robson. Berlin, Germany; Boston, MA, USA.

2:40 PM **EXPANSION OF HEPATIC PROGENITOR CELL IN FATTY LIVER GRAFT AFTER LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 146)**
Jai Young Cho, Kyung-Suk Suh, Hae Won Lee, Eung-Ho Cho, Nam-Joon Yi, Min A. Kim, Ja-June Jang, Kuhn Uk Lee. Seoul, Republic of Korea.

2:50 PM **HEPARANASE AND hVEGF$_{165,}$ INCREASE INTRAVASCULAR SURVIVAL OF TRANSPLANTED HEPATOCYTES AND ENDOTHELIAL CELL PROLIFERATION, IN RATS AFTER PARTIAL HEPATECTOMY. (Abstract # 147)**
Yaacov Baruch, Ilanit Boyanjo, Vladislav Tsiperson, Yelena Axelman, Joseph Dudas, Giuliano Ramadori, Ilan Neta, Israel Vlodavski, Gideon Shoshany, Ella Veitzman. Haifa, Israel; Gottimgen, Germany.

3:00 PM **THE SIGNIFICANCE OF HEPATIC STELLATE CELL ACTIVATON ON SMALL-FOR-SIZE FATTY LIVER GRAFT INJURY. (Abstract # 148)**
Qiao Cheng, Kwan Man, Kevin T. P. Ng, Chung-Mau Lo, Ronnie T. P. Poon, Sheung-Tat Fan. Hong Kong, China.

3:10 PM **HYDROXYETHYL STARCH-BASED PRESERVATION SOLUTIONS ENHANCE GENE THERAPY VECTOR DELIVERY UNDER HYPOTHERMIC CONDITIONS. (Abstract # 149)**
Scot D. Henry, Herold J. Metselaar, Pascal G. van der Wegen, Bob J. Scholte, Henri G. D. Leuvenink, Rutger J. Ploeg, Hugo W. Tilanus, Luc J. W. van der Laan. Rotterdam; The Netherlands.

3:20 PM **COMPLETE DEARTERIALIZATION OF THE LIVER CAUSES INTRAHEPATIC CHOLESTASIS DUE TO REDUCED HEPATOBILIARY TRANSPORTER EXPRESSION. (Abstract # 150)**
Harm Hoekstra, Yinghua Tian, Wolfram Jochum, Bruno Stieger, Rolf Graf, Robert J. Porte, Pierre A. Clavien. Groningen, Netherlands; Zurich, Switzerland; Zuerich, Switzerland.

3:30 PM **PROTECTION BY HYPOTHERMIA AGAINST HEPATIC ISCHEMIA/ REPERFUSION INJURY IS ASSOCIATED WITH UPREGULATION OF HEAT SHOCK PROTEINS HSP32 AND HSP70. (Abstract # 151)**
Matthias Behrends, Fengyun Xu, Soojinna Choi, Kim Deng, Ryutaro Hirose, Claus U. Niemann. San Francisco, CA, USA.

3:40 PM **DENDRITIC CELLS IN HEPATIC LYMPH NODES ARE EXHAUSTED AND HAVE A POOR ALLOGENEIC T-CELL STIMULATORY CAPACITY. (Abstract # 152)**
Brenda M. Bosma, Patrick P. C. Boor, Hugo W. Tilanus, Khe T. C. Tran, Jan N. M. IJzermans, Ernst J. Kuipers, Herold J. Metselaar, Jaap Kwekkeboom. Rotterdam, Netherlands.

3:50 PM **RAPAMYCIN INCREASES THE T CELL STIMULATORY CAPACITY OF PLASMACYTOID DENDRITIC CELLS. (Abstract # 153)**
Patrick P. C. Boor, Herold J. Metselaar, Jaap Kwekkeboom. Rotterdam, Netherlands.

Concurrent Session: Living Donors
2:30 PM – 4:00 PM

Room: Gavea B, 5th Floor
Chairs: Luiz Carneiro D'Albuquerque, MD, Universidade de Sao Paulo, Sao Paulo, Brazil & Tetsuya Kiuchi, MD,PhD, Nagoya Univeristy Hospital, Nagoya, Japan

2:30 PM **A DECADE OF RIGHT LIVER ADULT-TO-ADULT LIVE DONOR LIVER TRANSPLANTATION: MID-TERM OUTCOMES. (Abstract # 154)**
See Ching Chan, Barbara Chik, Chi Leung Liu, Chung Mau Lo, Sheung Tat Fan. Hong Kong, Hong Kong.

2:40 PM **ADULT TO ADULT LIVING DONOR LIVER TRANSPLANTATION: IS A GRAFT/BODY WEIGHT RATIO LESS THAN 0.8 SAFE? (Abstract # 155)**
A. S. Soin, R. Kakodkar, S. Saigal, S. Nundy. New Delhi, India.

2:50 PM **WORLD UPDATE ON LIVING LIVER DONOR MORTALITY. (Abstract # 156)**
Burckhardt Ringe, Russell W. Strong. Philadelphia, PA, USA; Brisbane, Australia.

3:00 PM **MANAGEMENT OF RECIPIENTS WITH PORTAL VEIN THROMBOSIS IN LIVE DONOR LIVER TRANSPLANTATION: EXPERIENCE FROM ONE CENTER. (Abstract # 157)**
K. R. Vasudevan, A. S. Soin, R. Kakodkar, S. Saigal, S. Nundy. New Delhi, India.

3:10 PM **EVALUATION OF LIVER REGENERATION AND FUNCTION OF DONORS AFTER LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 158)**
Hiroyuki Furukawa, Tsuyoshi Shimamura, Tomomi Suzuki, Masahiko Taniguchi, Kenichiro Yamashita, Minoru Ohta, Toshiya Kamiyama, Michiaki Mastushita, Satotu Todo. Sapporo, Hokkaido, Japan.

3:20 PM **LIVING DONOR LIVER TRANSPLANTATION FOR PATIENTS WITH CIRRHOSIS AND RENAL DYSFUNCTION. (Abstract # 159)**
A. Singh, R. Kakodkar, A. S. Soin, S. Saigal, S. Nundy. New Delhi, India.

3:30 PM **FINANCIAL COMPARISON OF ADULT-TO-ADULT LIVER TRANSPLANTATION FROM LIVING - VS DECEASED-DONORS. (Abstract # 160)**
Liise K. Kayler, Kusum Tom, Paolo Fontes, Igor Dvorchik, Amadeo Marcos. Pittsburgh, PA, USA.

3:40 PM **MEDICAL AND PSYCHOSOCIAL RISK PROFILE IN LIVING LIVER DONORS – HOW MUCH IS ACCEPTABLE? (Abstract # 161)**
Burckhardt Ringe, Ralph J. Petucci, Tracy Drufovka, James C. Reynolds. Philadelphia, PA, USA.

3:50 PM **OUTCOME OF PATIENTS CONSIDERED FOR LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 162)**
Camino Valentin-Gamazo, Georgios C. Sotiropoulos, Silvio Nadalin, Massimo Malago, Christoph E. Broelsch. Essen, Germany.

Concurrent Session: Recurrent Disease
2:30 PM – 4:00 PM

Room: Gavea A, 5th Floor
Chairs: Paulo Bittencourt, MD, Hospital Portugues, Salvador, Brazil & Didier Samuel, MD, Hopital Paul Brousse, Villejuif, France

2:30 PM **SERUM AUTOANTIBODIES AGAINST CYTOCHROME P450 2E1 (CYP2E1) PREDICT SEVERITY OF LIVER GRAFT HEPATITIS C RECURRENCE. (Abstract # 163)**
Cristina Rigamonti, Maria F. Donato, Matteo Vidali, Francesca Agnelli, Roberto Serino, Giuseppa Occhino, Alessandra Ivaldi, Eliana Arosio, Valentina Monti, Giorgio Rossi, Massimo Colombo, Emanuele Albano. Milan, Italy; Novara, Italy.

2:40 PM **ARE THERE RELIABLE PREDICTORS FOR THE SEVERITY OF RECURRENT HEPATITIS C FOLLOWING LIVER TRANSPLANTATION (LT)? (Abstract # 164)**
Diana J. Krasniansky, Valeria I. Descalzi, Silvina E. Yantorno, Andres E. Ruf, Oscar C. Andriani, Luis G. Podesta, Federico G. Villamil. Buenos Aires, Argentina.

2:50 PM **INFLUENCE OF DONOR HISTOLOGY ON OUTCOME IN PATIENTS UNDERGOING TRANSPLANTATION FOR HEPATITIS C. (Abstract # 165)**
Marcus Bahra, Ulf P. Neumann, Jacob Dietmar, Ruth Neuhaus, Peter Neuhaus. Berlin, Germany.

3:00 PM **COMPARISON AND VALIDATION OF SIMPLE NONINVASIVE TESTS FOR THE PREDICTION OF ADVANCED FIBROSIS IN PATIENTS WITH RECURRENT HEPATITIS C AFTER LIVER TRANSPLANTATION. (Abstract # 166)**
Ulf P. Neumann, Marcus Bahra, Fabian Spiess, Thomas Berg, Maximilian Schmeding, Peter Neuhaus. Berlin, Germany.

3:10 PM **PREDICTING POST-TRANSPLANTATION SURVIVAL FOR PATIENTS WITH HEPATOCELLULAR CARCINOMA. (Abstract # 167)**
Edie Y. Chan, James D. Perkins, Anne M. Larson, Matthew M. Yeh, Jorge D. Reyes, Ramasamy Bakthavatsalam. Seattle, WA, USA.

3:20 PM **LONG TERM HISTOLOGICAL OUTCOME AFTER LIVER TRANSPLANTATION (OLT) FOR FULMINANT HEPATIC FAILURE (FHF). (Abstract # 168)**
Silvina E. Yantorno, Valeria I. Descalzi, Andres E. Ruf, Oscar C. Andriani, Luis G. Podesta, Federico G. Villamil. Buenos Aires, Argentina.

3:30 PM **STEATOSIS AFTER HEPATITIS C-RELATED LIVER TRANSPLANTATION. (Abstract # 169)**
Rodrigo S. Honorio, Evandro S. Mello, Venancio A. F. Alves, Fabiana R. Lima, Edson R. Abdala, Telesforo Baccchella, Estela R. R. Figueira, Patricia R. Bonazzi, Daniela R. M. Gotardo, Marcel R. R. Machado. Sao Paulo, Brazil.

3:40 PM **CONTRIBUTION OF THE VASCULAR PROFILE ANALYSIS AND HISTOLOGICAL PATTERNS TO THE DIFFERENTIAL DIAGNOSIS OF HEPATIC NODULES. (Abstract # 170)**
Cristina Nascimento, Adriana Caroli-Bottino, J. Maia, Vera Pannain. Rio de Janeiro, Brazil.

3:50 PM **RECURRENCE OF AUTOIMMUNE HEPATITIS AFTER LIVER TRANSPLANTATION. (Abstract # 171)**
Claudia Alves Couto, Ronaldo Afonso Franco, Jr., Eduardo Garcia Vilela, Luciana Costa Faria, Leandro Ribeiro Carvalho Fonseca, Marcelo Dias Sanches, Agnaldo Soares Lima, Teresa Cristina Abreu Ferrari. Belo Horizonte, Minas Gerais, Brazil.

Coffee Break
4:00 PM – 4:30 PM

Room: Copacabana, 5th Floor

Interactive Session II - Anesthesia and Critical Care Medicine: High Metabolic and CNS Risk Patients: Contraindications, Monitoring and Management
4:30 PM – 6:00 PM

Room: Ipanema, 26th Floor
Chairs: Enis D. Silva, MD, Hospital Sirio Libanes, Sao Paulo, Brazil & Randolph Steadman, M.D., University of California, Los Angeles, United States

4:30 PM **Fulminant Liver Failure and Intracranial Hypertension**
John O´Grady, MD
Kings College Hospital
London, England

4:40 PM **Ischemic Injury and Liver Regeneration**
Pierre Clavien, MD, PhD
University Hospital Zurich
Zurich, Switzerland

4:50 PM **Intraoperative Metabolic Changes Hyperkalemia and Hyponatremia: Revisited**
Victor Xia, MD
David Geffen School of Medicine at UCLA, Los Angeles, United States

5:00 PM **SAFETY AND EFFICACY OF PRONE VENTILATION IN FULMINANT HEPATIC FAILURE AND ELEVATED INTRACRANIAL PRESSURE. (Abstract # 172)**
Ali Al-Khafaji, Ivonne Daly, Jamie Weaver, Tracy Grogan, Peter Linden. Pittsburgh, PA, USA.

5:20 PM **Anesthesia Abstract Case Presentations**
Flavio Takaoka, MD
Hospital Albert Einstein
Brazil

Concurrent Session: Immunosuppression
4:30 PM – 6:00 PM

Room: Gavea A, 5th Floor
Chairs: Umberto Cillo, MD, University of Padova , Padova, Italy & Paulo Massarollo, MD, Santa Casa de Misericordia, Sao Paulo, Brazil

4:30 PM **LONG TERM FOLLOW UP OF IMMUNOSUPPRESSIVE MONOTHERAPY IN LIVER TRANSPLANTATION: TACROLIMUS AND MICROEMULSIFIED CYCLOSPORIN. (Abstract # 173)**
Vibhakorn Shusang, Maria Raimondo, Laura Marelli, Evangelos Cholongitas, Marco Senzolo, B. R. Davidson, David Patch, Keith Rolles, Andrew K. Burroughs. London, United Kingdom.

4:40 PM **3-DAY VERSUS 10-DAY INDUCTION THERAPY WITH ANTITHYMOCYTE GLOBULIN (ATG) IN ORTHOTOPIC LIVER TRANSPLANTATION (OLT). (Abstract # 174)**
Georg P. Gyoeri, Thomas Soliman, Hubert Hetz, Gerd Silberhumer, Chrisopher K. Burghuber, Rudolf Steininger, Ferdinand Muehlbacher, Gabriela A. Berlakovich. Vienna, Austria.

4:50 PM **INDUCTION IMMUNOSUPPRESSION IN 698 ADULT, CADAVERIC LIVER TRANSPLANT RECIPIENTS. (Abstract # 175)**
Rodrigo M. Vianna, Richard S. Mangus, Jonathan A. Fridell, Joseph Tector. Indianapolis, IN, USA.

5:00 PM **PHARMACOKINETICS OF TACROLIMUS IN LIVE DONOR LIVER TRANSPLANTATION (LDLT) VS. DECEASED DONOR LIVER TRANSPLANTATION (DDLT). (Abstract # 176)**
Ashokkumar Jain, Raman Venkataramanan, Mark Orloff, Peter Abt, Adel Bozorgzadeh. Rochester, NY, USA; Pittsburgh, PA, USA.

5:10 PM **COMPARISON OF PHARMACOKINETICS OF MPA AFTER ORAL AND IV DOSING OF MMF IN HEPATIC TRANSPLANT PATIENTS. (Abstract # 177)**
Richard D. Mamelok, Rene Bouw. Palo Alto, CA, USA; Welwyn Garden City, United Kingdom.

5:20 PM **CONVERSION FROM CALCINEURIN INHIBITORS (CNIs) TO SIROLIMUS (SRL) IMMUNOSUPPRESSION IS BENEFICIAL IN LIVER TRANSPLANT (LT) RECIPIENTS WITH RENAL DYSFUNCTION (RD). (Abstract # 178)**
Nora Cejas, Paola Casciato, Valeria Descalzi, Omar Galdame, Adrian Gadano, Oscar Imventarza, Federico Villamil. Buenos Aires, Argentina.

5:30 PM **CHANGES IN FREQUENCY AND PHENOTYPE OF CIRCULATING $CD4^{+}Foxp3^{+}$ REGULATORY T CELLS AFTER CONVERSION FROM CALCINEURIN INHIBITOR TO MYCOPHENOLATE MOFETIL MONOTHERAPY. (Abstract # 179)**
A. Demirkiran, L. J. W. van der Laan, V. D. K. D. Sewgobind, G. Kazemier, J. van der Weijde, A. Kok, C. C. Baan, H. W. Tilanus, H. J. Metselaar. Rotterdam, Netherlands;.

5:40 PM **BASILIXIMAB (Bas) INDUCTION NEGATES THE EFFECT OF A POSITIVE T CELL CROSS MATCH ON ACUTE REJECTION (ACR) RATES IN LIVER TRANSPLANT (OLT) RECIPIENTS. (Abstract # 180)**
Dympna M. Kelly, Shakir Hussein, Armine Karapetian, Andrei Cocieru, Joan Alster, Rebecca Corey, Bijan Eghtesad, Charles M. Miller, John J. Fung. Cleveland, OH, USA.

5:50 PM **LONG-TERM OUTCOME WITH rATG INDUCTION AND STEROID-FREE IMMUNOSUPPRESSION IN PEDIATRIC LIVER TRANSPLANTATION (PLTX). (Abstract # 181)**
G. Mazariegos, Z. Machaidze, K. Soltys, G. Bond, R. Squires, R. Sindhi. Pittsburgh, PA, USA.

Concurrent Session: Late Breaking
4:30 PM – 6:00 PM

Room: Vidagal A&B, 5th Floor
Chairs: Oscar Imventarza, MD, Hospital Garrahan, Buenos Aires, Argentina & Mario G. Pessoa, MD, Liver Transplant Unit, Pro-Figado - Hospital Alemao Osvaldo Cruz, Sao Paulo, Brazil

4:30 PM **HEPATIC ARTERY RECONSTRUCTION WITH INFERIOR MESENTERIC ARTERY GRAFT IN PATIENTS WITH HEPATIC TRAUMA AND LIVING DONOR LIVER TRANSPLANT RECIPIENTS. (Abstract # 182)**
Huseyin - Astarcioglu, Tarkan - Unek, Sedat - Karademir, Ibrahim Astarcioglu. Izmir, Turkey; Izmir, Turkey.

4:40 PM **A PROSPECTIVE STUDY OF PATIENTS AND GRAFT FOLLOW LIVER TRANSPLANTATION – IS THERE A ROLE FOR FATTY LIVERS? (Abstract # 183)**
Huda M Noujaim, Edna F Montero, Cristiane MF Ribeiro, Regina Santos, Marcelo P De Miranda, Tercio Genzini. Sao Paulo, SP, Brazil; Sao Paulo, Brazil.

4:50 PM **INCREASED MORTALITY AND CARDIAC MORBIDITY AFTER LIVER TRANSPLANTATION IN PATIENTS WITH KNOWN CORONARY ARTERY DISEASE. (Abstract # 184)**
Daniel A Diedrich, Barry A Harrison, James Y Findlay. Rochester, MN, USA; Jacksonville, FL, USA.

5:00 PM **SPLENIC ARTERY ANEURYSM IN ADULT LIVER TRANSPLANTATION. (Abstract # 185)**
Jai S. Bagia, Bridget K. Gunson, Darius F. Mirza, John A. Buckels, Simon R. Bramhall, Stephen J. Wigmore, David A. Mayer. Birmingham, United Kingdom.

5:10 PM **INCIDENCE OF ALLOSENSITIZATION AFTER LIVER TRANSPLANTATION. (Abstract # 186)**
Eduardo J. Ramos, Harrison S. Pollinger, Koroush Haghighi, Heimbach K. Julie, Rosen B. Charles. Rochester, MN, USA.

5:20 PM **SPLENIC ARTERY STEAL SYNDROME: REALITY OR MYTH? A CASE REPORT SUGGESTING THE ROLE OF PORTAL HYPERPERFUSION. (Abstract # 187)**
F Aucejo, K Hashimoto, C Quintini, K Hirose, S Nakagawa, T Diago, B Eghtesad, D Kelly, C Winans, D Vogt, J Fung, C Miller. Cleveland, Ohio, USA.

5:30 PM **THE DANGER ASSOCIATING OF PEG-INTERFERON AND RIBAVIRIN WITH MYCOPHENOLATE MOFETIL TO TREAT RECURRENT HEPATITIS IN LIVER TRANSPLANT RECIPIENTS. (Abstract # 188)**
Gianpaolo Parrilli, Gabriella Cordone, Cristiana Abazia, Marco Sangez, Luciano D'Agostino. Naples, Italy.

5:40 PM **FULMINANT LIVER FAILURE IN MORBID OBESE AFTER BARIATRIC SURGERY. (Abstract # 189)**
Adávio Oliveira e Silva, Verônica VDS Cardozo, Betânia S Rocha, Raul C Wahle, Priscila R Néspoli, Evandro O Souza, Francisco L Dazzi, Jorge P Mancero, Frans IS Larrea, Gilberto Perón Jr, Marcelo AF Ribeiro Jr, José LM Copstein, Adriano M Gonzalez, Luiz AC D'Albuquerque. São Paulo, São Paulo, Brazil.

Concurrent Session: Malignancies
4:30 PM – 6:00 PM

Room: Gavea B, 5th Floor
Chairs: Vincenzo Mazzaferro, MD,PhD, Istitoto Nazionale Tumori, Milano, Italy & Joaquim Ribeiro Filho, MD, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil

4:30 PM **TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CHRONIC HEPATITIS C – IS SURVIVAL WORSE THAN WITH HEPATITIS C ALONE? (Abstract # 190)**
Nicholas Onaca, Edmund Q. Sanchez, Tariq Khan, Dmitriy Nikitin, Srinath Chinnakotla, Linda W. Jennings, Richard Ruiz, Greg J. McKenna, Henry B. Randall, Robert M. Goldstein, Marlon F. Levy, Goran B. Klintmalm. Dallas/Fort Worth, TX, USA.

4:40 PM **LIVER TRANSPLANTATION WITH PANCREATODUODENECTOMY FOR HILAR CHOLANGIOCARCINOMA INVOLVING THE COMMON BILE DUCT IN PATIENTS WITH PRIMARY SCLEROSING CHOLANGITIS. (Abstract # 191)**
Eduardo J. Ramos, Julie K. Heimbach, Scott L. Nyberg, Michael B. Ishitani, Gregory J. Gores, Charles B. Rosen. Rochester, MN, USA.

4:50 PM **PRE-OPERATIVE ABLATION IS BENEFICIAL FOR HCC CANDIDATES WAITING FOR LIVER TRANSPLANTATION. (Abstract # 192)**
Richard B. Freeman, Robin Ruthazer, Anthony Schore, Abigail Mithofer, Khanh Ngyuen, Prakhar Agarwal, Ann Harper, Erick B. Edwards. Boston, MA, USA; Richmond, VA, USA.

5:00 PM **LIVER TRANSPLANTATION FOLLOWED BY ADJUVANT HAEMATOPOIETIC STEM CELL TRANSPLANTATION AS TREATMENT FOR ADVANCED PRIMARY LIVER CANCER. (Abstract # 193)**
Gunnar Soderdahl, Lisbeth Barkholt, Ringdén Olle, Oksanen Antti, Ericzon Bo-Goran. Stockholm, Sweden.

5:10 PM **LIVER TRANSPLANTATION WITH A PARTIAL GRAFT IS A RISK FACTOR FOR *DE NOVO* TUMORS AFTER TRANSPLANT IN THE ADULT POPULATION. (Abstract # 194)**
Alessandro Ricchiuti, Damiano Patrono, Giorgia Rizza, Renato Romagnoli, Mauro Salizzoni. Turin, Italy.

5:20 PM **OUTCOME OF LIVER TRANSPLANTATION FOR HCC BEYOND CONVENTIONAL CRITERIA: PRELIMINARY REPORT OF THE "METROTICKET" SURVEY. (Abstract # 195)**
Vincenzo Mazzaferro, Marcello Schiavo. Milan, Italy.

5:30 PM **TOTAL TUMOR VOLUME IMPROVES PRETRANSPLANT SELECTION OF PATIENTS WITH HEPATOCELLULAR CARCINOMA: A TWO CENTER STUDY. (Abstract # 196)**
Christian Toso, Alice Wei, David L. Bigam, Shimul Shah, James A. M. Shapiro, Norman M. Kneteman. Edmonton, AB, Canada; Toronto, ON, Canada.

5:40 PM **LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA IN NON-CIRRHOTIC LIVERS. (Abstract # 197)**
Hynek Mergental, Rene Adam, Piotr Kalicinski, Bo-Göran Ericzon, Styrbjorn Friman, Alfred Köningsrainer, Bart van Hoek, Robert J. Porte, the European Liver and Intestine Transplant Association (ELITA). Groningen, Netherlands; Villejuif, France; Warsaw, Poland; Stockholm, Sweden; Goteborg, Sweden; Tubingen, Germany; Leiden, Netherlands.

5:50 PM **MONITORING HEPATOCELLULAR CARCINOMA WITH ANGIOGENESIS SOLUBLE FACTORS. (Abstract # 198)**
Valeria R. Mas, Robert A. Fisher, Yanek Kenneth, Kellie Archer, Marc P. Posner, Daniel G. Maluf. Richmond, VA, USA.

Poster Grand Rounds Session II
6:00 PM – 6:30 PM

Room: Vidigal A&B, 5th Floor

Comments on Chosen Posters
Russell H. Wiesner, MD
Mayo Clinic Rochester
Rochester, United States

Poster Session II
6:00 PM – 7:00 PM

Presenters in Attendance
Room: Leme, 5th Floor

1 **ACUTE HYPOTENSIVE TRANSFUSION REACTION DURING LIVER TRANSPLANTATION IN A PATIENT ON ACE INHIBITORS. (Abstract # 199)**
Cataldo Doria, Elia S. Elia, Yoogoo Kang, Albert Adam, Carlo Ramirez, Frank Adam, Fabrizio DiFrancesco, Jay H. Herman. Philadelphia, PA, USA; Hamilton, ON, Canada.

2 **PREDICTORS OF 1-YEAR MORTALITY FOLLOWING ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 200)**
Denis Gustin, Mladen Knotek, Branislav Kocman, Stipislav Jadrijevic, Maida Buhin. Zagreb, Croatia.

3 **SHOULD LIVER TRANSPLANT PATIENTS BE EXTUBATED IMMEDIATELY IN THE OPERATING ROOM OR IN THEIR ICU STAY? (Abstract # 201)**
Edie Chan, Adam Levy, Gregory Dembo, Kenneth Martay, Jorge Reyes, James Perkins, Youri Vater. Seattle, WA, USA.

4 **NEUROLOGICAL COMPLICATIONS IN LIVER TRANSPLANTATION: A 5-YEAR REVIEW. (Abstract # 202)**
Ana C. Gonzalez, Joyce Roma, Ivan Zynger, Grace K. Paranhos, Marcia Halpern, Marcelo Enne, Lucio Pacheco, Elizabeth Balbi. Rio de Janeiro, Brazil.

5 **INTRAOPERATIVE TRANSFUSION REQUIREMENTS IS AFFECTED BY PREOPERATIVE MELD SCORE DURING ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 203)**
Flavio Takaoka, Alexandre Teruya, Isabella S. Pereira, Sergio Mies, Alexandre P. Oliveira. Sao Paulo, SP, Brazil.

6 **PUMONARY INFECTIONS IN CADAVERIC AND LIVING RELATED LIVER TRANSPLANT PATIENTS. (Abstract # 204)**
Fuat H. Saner, Goran Pavlakovic, Georgios C. Sotiropoulos, Silvio Nadalin, Andreas Paul, Massimo Malagó, Broelsch E. Christoph. Essen, NRW, Germany; Goettingen, Niedersachsen, Germany.

7 **AMBIENT OPERATING ROOM TEMPERATURE VS THE CoolHeat™ OPERATING TABLE WARMING MATTRESS: COMPARISON OF THE CORE BODY TEMPERATURES IN PATIENTS UNDERGOING ORTHOTOPIC LIVER TRANSPLANTATIONS. (Abstract # 205)**
Youri Vater, Greg Dembo, Kenneth Martay, Alex Vitin. Seattle, WA, USA.

8 **THE AUDITORY EVOKED POTENTIALS USAGE IN DEPTH OF ANESTHESIA MONITORING DURING ORTHOTROPIC LIVER TRANSPLANTATION. PRELIMINARY RAPPORT. (Abstract # 206)**
Janusz Trzebicki, Marcin Kolacz, Lidia Jureczko, Beata Blaszczyk, Marek Pacholczyk, Andrzej Chmura, Beata Lagiewska, Leszek Adadynski, Gajusz Gontarczyk, Wojciech Lisik, Ewa Mayzner-Zawadzka. Warsaw, Poland.

9 **DO LEVELS OF AST OR ALT IMMEDIATELY AFTER THE LIVER TRANSPLANT AFFECT PATIENT OUTCOME? (Abstract # 207)**
Dirk Schreen, João Batista Marinho, Cyntia F. G. Viana, Fernanda Paula Cavalcante, Tarciso Daniel S. Rocha, José Huygens P. Garcia. Fortaleza, Brazil.

10 **COMPARISON OF HEMODYNAMICS CHANGES DURING THE ANHEPATIC PHASE IN GLYCOGEN STORAGE DISEASE AND BILIARY ARTESIA PATIENTS UNDERGOING LIVING DONOR LIVER TRANSPLANTATION WITHOUT VENO-VENOUS BYPASS. (Abstract # 208)**
Chia-Jung Wang, Chao-Long Chen, Chih-Hsien Wang, Kuan-Hung Chen, Allan M. Concejero, Chih-Chi Wang, Yu-Fan Cheng, Bruno Jawan. Kaohsiung, Taiwan.

11 **CAN WE INFLUENCE WITH THE CHOICE OF ANESTHETIC TECHNIQUE ON DURATION OF INTUBATION AND LENGTH OF STAY IN ICU OF ADULT LIVER RECIPIENTS? (Abstract # 209)**
Rade Stanic, Ana Spec-Marn, Neva Pozar-Lukanovic, Jasmina Markovic, Boriana Kremzar. Ljubljana, Slovenia.

12 **CHAGASIC MYOCARDIAL DISEASE AFTER LIVER TRANSPLANTATION INSPITE OF NEGATIVE SEROLOGICAL SCREENING TESTS OF BOTH DONOR AND RECIPIENT. (Abstract # 210)**
Orlando Castro e Silva, Jr., Ajith K. Sankarankutty, Fernanda F. Souza, Andreza C. Teixeira, Ana L. C. Martinelli, Afonso D. C. Passos, José A. Marin-Neto, José F. C. Figueiredo, Gilberto G. Gaspar, Letícia Melo. Ribeirão Preto, São Paulo, Brazil.

13 **RECURRENT PRIMARY BILIARY CIRRHOSIS: NEITHER ASYMPTOMATIC NOR BENIGN, BUT A RATHER DISASTROUS AND PROGRESSIVE DISEASE. (Abstract # 211)**
Mauricio F. Barros, Evandro S. Mello, Fabiana R. Lima, Vinicius R. Santos, Renato A. Cury, Telesforo Bacchella, Hoel Sette, Jr.. Sao Paulo, Brazil.

14 **TREATMENT OF ACUTE HEPATITIS C AFTER LIVER TRANSPLANTATION: YES OR NOT. (Abstract # 212)**
Mauricio F. Barros, Agnaldo S. Lima, Vinicius R. Santos, Evandro S. Mello, Telesforo Bacchella, Hoel Sette, Jr. Sao Paulo, SP, Brazil; Belo Horizonte, Brazil; Sao Paulo, Brazil.

15 **RAPAMYCIN-BASED THERAPY RESCUE FOR EARLY CHRONIC REJECTION IN ORTHOTOPIC LIVER TRANSPLANTATION (OLT), REPORT OF A CASE FROM CHILE. (Abstract # 213)**
Nicolas Devaud, Rosa Perez-Ayuso, Nicolas Jarufe, Juan Francisco Guerra, Pilar Dominguez, Alejandro Soza, Robinson Gonzalez, Marcos Arrese, Jorge Martinez. Santiago, Metropolitana, Chile.

16 **PORTAL HEMODYNAMIC IN ADULT LIVING DONOR LIVER TRANSPLANTATION AFTER SPLENIC ARTERY LIGATION. (Abstract # 214)**
Tung-Liang Huang, Yu-Fan Cheng, Tai-Yi Chen, Leo Leung-Chit Tsang, Chih-Chi Wang, Chao-Long Chen. Kaohsiung, Taiwan.

17 **THE OUTCOMES OF CONSECUTIVE 293 LIVING LIVER DONORS IN A SINGLE CENTER. (Abstract # 215)**
Chin-Hsiang Yang, Chao-Long Chen, Chih-Chi Wang, Shih-Hor Wang, Chih-Che Lin, Yeuh-Wei Liu, Chee-Chien Yong. Kaohsiung County, Taiwan.

18 **BILIARY RECONSTRUCTION IN RIGHT LOBE LIVING-DONOR LIVER TRANSPLANTATION: COMPARISON OF DIFFERENT TECHNIQUES. (Abstract # 216)**
George Tsoulfas, Mark Orloff, Randeep Kashyap, Peter Abt, Ashokumar Jain, Saman Safadjou, Maureen Graham, Peter Horton, Manoj Maloo, Adel Bozorgzadeh. Rochester, NY, USA.

19 **MORPHINE AND GLUCAGON AUGMENTED MRCP FOR EVALUATION OF LIVING-RELATED LIVER DONORS. (Abstract # 217)**
Yuan Heng Mo, Shinn Forng Steven Peng, Yao-Ming Wu, Cheng Maw Ho, Hon Man Liu, Ming Chih Ho, Po Huang Lee, Fu Shan Jaw, Po Chin Liang. Taipei, Taiwan.

20 **IMPACT OF TECHNICAL IMPROVEMENTS IN THE BILIARY ANASTOMOSIS ON THE INCIDENCE OF BILIARY COMPLICATIONS AFTER LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 218)**
Vincenzo Pugliese, Eduardo Carone, Renata S. Pugliese, Eduardo A. Fonseca, Joao Seda Neto, Alcides A. Salzedas Netto, Andre Godoy, Vera Baggio, Irene K. Miura, Tereza Guimaraes, Rogerio Pinheiro, Carla A. Matos, Mario Kondo, Paulo Chapchap. Sao Paulo, Brazil.

21 **TRANSFERRAL OF EXPERIENCE AND ANALYSIS OF THE EFFECT OF LEARNING CURVE IN ADULT-TO-ADULT RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION (128 CASES). (Abstract # 219)**
Amr Abdelaal, Mahmoud el Meteini, Alaa Hamza, Ibrahim Mustapha, Mustapha Adham, Jérôme Dumortier, Pierre Sagnard, Olivier Boillot. Lyon, France; Cairo, Egypt.

22 **SMALL REMNANT LIVER VOLUME AFTER RIGHT LOBE LIVING DONOR HEPATECTOMY: OUTCOME OF DONORS WITH A REMNANT LIVER VOLUME OF LESS THAN 30%. (Abstract # 220)**
Murat Dayangac, Burcin Taner, Deniz Balci, Zahide Kurt, Suleyman Uraz, Omer Ayanoglu, Cihan Duran, Yildiray Yuzer. Istanbul, Turkey.

23 **HUNDRED AND FORTY CASES OF LIVING-DONOR LIVER TRANSPLANTATION: SINGLE-CENTER EXPERIENCE IN BRAZIL. (Abstract # 221)**
Sergio Mies, Thomson M. Palma, Thiago Beduschi, Vinicius M. Silva, Ana Olga N. G. F. Mies, Ana Suely C. Zan, Bianca D. Guardia, Carlos E. S. Baia, Eloiza H. Quintela, Leonardo R. Ferraz, Marcio D. Almeida, Margareth P. Lallee, Osvaldo I. Pereira. Sao Paulo, SP, Brazil.

24 **PRE-OPERATIVE ADMINISTRATION OF THYMOGLOBULIN REDUCES THE USE OF BLOOD PRODUCTS IN LIVING DONOR LIVER TRANSPLANT RECIPIENTS. (Abstract # 222)**
Ronak Iqbal, Antonio Gangemi, Thuy Pham, James Thielke, Heather Neeley, Damiano Rondelli, Enrico Benedetti, Giuliano Testa. Chicago, IL, USA.

25 **CAUSES OF DONOR EXCLUSION DURING EVALUATION FOR ADULT LIVING DONOR LIVER DONATION. (Abstract # 223)**
Sergio Mies, Marcio D. de Almeida, Thiago Beduschi, Thomson M. Palma, Bianca Della Guardia, Vinicius M. R. Silva, Ana Olga N. G. F. Mies, Ana Suely C. Zan, Carlos E. S. Baia, Eloiza H. Quintela, Leonardo R. Ferraz, Margareth P. Lallee, Osvaldo I. Pereira. Sao Paulo, SP, Brazil.

26 **LIVING RELATED LIVER TRANSPLANTATION PROGRAMS IN EGYPT: A COCKTAIL OF PROBLEMS. (Abstract # 224)**
Amr Helmy. Shebin El Kom, Menoufiya, Egypt.

27 **THE RISK OF RIGHT LOBECTOMY IS THE SAME OF LEFT LATERAL SEGMENTECTOMY? COMPARATIVE ANALYSIS OF THE LIVE LIVER DONATION RISK USING A SEVERITY GRADING SYSTEM. (Abstract # 225)**
Lucio F. Pacheco-Moreira, Rodrigo C. Amil, Marcelo Enne, Lucio Auler, Alexandre Cerqueira, Elizabeth Balbi, Jefferson Alves, José Manuel Martinho. Rio de Janeiro, Brazil.

28 **DONOR SAFETY IN DONOR RIGHT HEPATECTOMY WITH THE INCLUSION OF MIDDLE HEPATIC VEIN IN LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 226)**
Burcin Taner, Murat Dayangac, Deniz Balci, Zahide Kurt, Baris Akin, Suleyman Uraz, Cihan Duran, Sameer Smadi, Yildiray Yuzer, Yaman Tokat. Istanbul, Turkey.

29 **LIVING DONOR LIVER TRANSPLANTATION IN MEXICO. (Abstract # 227)**
Luis C. Rodriguez-Sancho, Marco A. Covarrubias-Velasco, Eduardo Solano-Peralta, Hector Montes-Munoz, Marisela Correa-Valdez, Salvador Castillo-Baron. Guadalajara, Jalisco, Mexico.

30 **EARLY EXPERIENCE WITH LIVING RELATED DONOR LIVER TRANSPLANTATION, JORDAN HOSPITAL. (Abstract # 228)**
Abdallah Bashir, Anwar Jarrad, Saeb Hammoudi, Hani Abu-Ghosh. Amman, Jordan.

31 **THE COORDINATION OF THE LIVING RELATED LIVER TRANSPLANT PROGRAMME IN THE UKE-HAMBURG. (Abstract # 229)**
Tom Karbe, Suresh K. Singhvi, Dieter C. Broering, Xavier Rogiers. Hamburg, Germany; Newcastle Upon Tyne, United Kingdom.

32 **CORTICOSTEROID WITHDRAWAL RESULTS IN RESTORATION OF MYELOID DENDRITIC CELL FUNCTION: IMPLICATIONS FOR IMMUNOSUPPRESSIVE THERAPY? (Abstract # 230)**
Brenda M. Bosma, Herold J. Metselaar, Nicole M. A. Nagtzaam, Shanta Mancham, Hugo W. Tilanus, Jaap Kwekkeboom. Rotterdam, Netherlands.

33 **VERY LOW VALUES OF THE CYLEX IMMUKNOW ASSAY ARE ASSOCIATED WITH EARLY POST-OPERATIVE DEATH FOLLOWING LIVER TRANSPLANTATION. (Abstract # 231)**
Kenzo Hirose, Federico Aucejo, Koji Hashimoto, Cristiano Quintini, Shunichi Nakagawa, Rebecca Corey, Kalman Benscath, Bijan Eghtesad, Dympna Kelly, John Fung, Charles Miller. Cleveland, OH, USA.

34 **PHARMACOKINETIC ASPECTS OF TACROLIMUS DURING THE FIRST FOUR DAYS AFTER LIVER TRANSPLANTATION. CONTRIBUTION TO OBJECTIVE DOSE ADJUSTMENT. (Abstract # 232)**
Luiz F. Veloso, Paulo R. Savassi-Rocha, Maria Cecília S. Lúcio Oliveira, Karrim Boudjema. Belo Horizonte, Minas Gerais, Brazil; Rennes, Bretaigne, France.

35 **IMMUNOMODULATORY EFFECT OF INGREDIENT FROM CHINESE HERBAL MEDICINE ISODON SERRA, NODOSIN, ON RECIPIENT AFTER ORTHOTOPIC LIVER TRANSPLANTATION IN RAT. (Abstract # 233)**
Jiyu Li, Zhiwei Quan, Jianwen Liu, Yan Zhang. Shanghai, China.

36 **IMMUNOSUPPRESSIVE THERAPY IN LIVER TRANSPLANT WITH COMPLETE OR PARTIAL GRAFTS. THE ROLE OF MYCOPHENOLATE MOFETIL. (Abstract # 234)**
Constantino Fondevila, Amelia Hessheimer, Ramon Charco, David Calatayud, Ricard Corcelles, Joana Ferrer, Jose Fuster, Miguel Navasa, Antoni Rimola, Juan C. Garcia-Valdecasas. Barcelona, Spain.

37 **DIAGNOSIS AND TREATMENT OF FUNGAL INFECTIONS FOLLOWING LIVER TRANSPLANTATION. (Abstract # 235)**
Wang Lin, Zhao Qingchuan, Tao Kaishan, Cao Dayong, Zhang Wei, Dou Kefeng. Xian, China.

38 **INDICATIONS AND MANAGEMENT OF m-TOR AFTER LIVER TRANSPLANTATION. (Abstract # 236)**
Itxarone Bilbao, Sapiscochin Gonzalo, Dopazo Cristina, Castro Ernesto, Escartin Alfredo, Castells Luis, Lazaro L. Jose, Lopez Inigo, Balsells Joaquin. Barcelona, Spain.

39 **MODIFICATION OF DONOR RISK FACTORS AFFECTS THE GRAFT SURVIVAL IN LIVER TRANSPLANTATION. (Abstract # 237)**
Dmitriy Nikitin, Tariq Khan, Edmund Q. Sanchez, Srinath Chinnakotla, Henry B. Randall, Greg J. McKenna, Richard Ruiz, Nicholas Onaca, Marlon F. Levy, Robert M. Goldstein, Goran B. Klintmalm. Dallas/Ft. Worth, TX, USA.

40 **INCREASING ORGAN USE: LARGE, SINGLE CENTER EXPERIENCE WITH EXTENDED CRITERIA DONORS FOR LIVER TRANSPLANTATION. (Abstract # 238)**
Adel Bozorgzadeh, George Tsoulfas, Randeep Kashyap, Peter Abt, Peter Horton, Manoj Maloo, Saman Safadjou, Maureen Graham, Ashokumar Jain, Mark Orloff. Rochester, NY, USA.

41 **USING LIVERS FROM HEPATITIS-C POSITIVE DONORS DOES NOT ADVERSELY IMPACT ON SURVIVAL. (Abstract # 239)**
Randeep Kashyap, George Tsoulfas, Peter Horton, Mark Orloff, Peter Abt, Manoj Maloo, Maureen Graham, Saman Safadjou, Ashokumar Jain, Adel Bozorgzadeh. Rochester, NY, USA.

42 **EXTENDED CRITERIA DONORS AND PARTIAL GRAFTS TO EXPAND THE DONOR POOL: IMPACT ON THE OUTCOME. (Abstract # 240)**
Marco Spada, Marcello Spampinato, Lucio Mandalà, Salvatore Gruttadauria, Domenico Biondo, Giovanni Vizzini, Antonio Arcadipane, Angelo Luca, Silvia Riva, Bruno Gridelli. Palermo, Italy.

43 **AGE DONOR OVER FIFTYS DECREASE SURVIVAL RATE AFTER LIVER TRANSPLANTATION. (Abstract # 241)**
Ilka F. S. F. Boin, Marilia I. Leonardi, R. Stucchi, Helbert M. Palmiero, Patricia Kajikawa, Yumi B. F. Kaiahara. Campinas, São Paulo, Brazil.

44 **MARGINAL GRAFT INCREASES EARLY MORTALITY IN LIVER TRANSPLANTATION. (Abstract # 242)**
Flavio F. Galvao, Jose L. Almeida, Estela R. Figueira, Telesforo Bacchella, Marcel C. Machado. Sao Paulo, Brazil.

45 **DOES THE MELD ALLOCATION POLICY IMPROVE OUTCOME OF LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA? (Abstract # 243)**
Takahiro Murakami, Javier Chapochnick, Alger Aquino, Ahmed Fahmy, Devon John, Glyn Morgan, Thomas Diflo, Lewis Teperman. New York, NY, USA.

46 **ESTIMATION OF THE ACCEPTABLE WAITING TIME AND BEST CANDIDATES FOR TRANSARTERIAL CHEMOTHERAPY PRIOR TO LIVER TRANSPLANTATION IN PATIENTS WITH HEPATOCELLULAR CARCINOMA MEETING THE MILAN CRITERIA. (Abstract # 244)**
Jong Y. Choi, Si H. Bae, Seung K. Yoon, Jung W. Jang, Dong G. Kim, Young S. Lee. Seoul, Republic of Korea; Bucheon, Republic of Korea.

47 **CRITICAL CUT-OFF VALUE OF SERUM ALPHA-FETOPROTEIN LEVEL TO EXCLUDE PATIENTS FROM LIVER TRANSPLANTATION. (Abstract # 245)**
Shin Hwang, Sung-Gyu Lee, Chul-Soo Ahn, Deok-Bog Moon, Tae-Yong Ha. Seoul, Republic of Korea.

48 **OUTCOME OF LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA: ANALYSES OF RISK FACTORS OF RECURRENCE. (Abstract # 246)**
Huda M. Noujaim, Alexandre G. Dalbem, Cristiane M. F. Ribeiro, Regina Santos, Fabio Crescentini, Marcelo P. de Miranda, Tercio Genzini. São Paulo, SP, Brazil.

49 **EFFICACY AND SAFETY OF TRANSARTERIAL EMBOLIZATION WITH EMBOSPHERES IN PATIENTS WITH HEPATOCELLULAR CARCINOMA WAITING FOR LIVER TRANSPLANTATION. (Abstract # 247)**
Paolo Reggiani, Antonio Nicolini, Ernesto Melada, Silvia Crespi, Angelo Sangiovanni, Laura Martinetti, Giorgio E. Rossi. Milano, MI, Italy.

50 **LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA: PREDICTIVE FACTORS OF RECURRENCE. (Abstract # 248)**
Guilhermo Kiss, Maria L. Zanotelli, Ana L. Gleisner, Eduardo S. Schlindwein, Ian Leipnitz, Tomaz M. J. Grezzana, Mario H. Meine, Ajacio M. Brandão, Claudio A. Marroni, Guido P. C. Cantisani. Porto Alegre, RS, Brazil.

51 **POSTTRANSPLANT LYMPHPOPROLIFERATIVE DISORDERS IN ADULT LIVER TRANSPLANT RECIPIENTS. (Abstract # 249)**
Krzysztof Zieniewicz, Joanna Sanko-Resmer, Krzysztof Mucha, Piotr Boguradzki, Janusz Wyzgal, Pawel Nyckowski, Anna Skwarek, Abdulsalam Alsharabi, Bogdan Michalowicz, Waldemar Patkowski, Leszek Paczek, Marek Krawczyk. Warszawa, Poland.

52 **EXTRANODAL POSTTRANSPLANTATION LYMPHOPROLIFERATIVE DISORDER – CASE REPORT. (Abstract # 250)**
Eduardo Garcia Vilela, Claudia Alves Couto, Eduardo Alves Bambirra, Lucia Porto Fonseca Castro, Agnaldo Soares Lima, Maria de Lourdes de Abreu Ferrari. Belo Horizonte, Minas Gerais, Brazil.

53 **OSTEOPOROSIS AFTER LIVER TRANSPLANTATION – HOW TO PREVENT FRACTURES? A PROSPECTIVE RANDOMIZED TRIAL. (Abstract # 251)**
Merten Hommann, Gabriele Lehmann, Daniel Kaemmerer, Gunter Wolf, Utz Settmacher. Jena, Germany; Bad Berka, Germany.

54 **PARTIAL VERSUS WHOLE GRAFTS IN ADULT LIVER TRANSPLANTATION. LESSONS LEARNED FROM A SERIES OF 750 CASES IN A SINGLE CENTER. (Abstract # 252)**
Olivier Boillot, Jérôme Dumortier, Amr Abdelaal, Mustapha Adham, Catherine Boucaud, Pierre Sagnard, Yves Bouffard, Olivier Guillaud, Bertrand Delafosse, Charles Ber. Lyon, France.

55 **LIVER TRANSPLANTATION AND MORBID OBESITY. (Abstract # 253)**
Hosein Shokouh-Amiri, Santiago R. Vera, Osama A. Gaber, Reza Mehrazin, Nosratollah Nezakatgoo, Barbara Parham. Memphis, TN, USA.

56 **PREDICTION OF OUTCOME AFTER LIVER TRANSPLANTATION BY DONOR RISK INDEX (DRI) AND ORGAN PATIENT INDEX (OPI). (Abstract # 254)**
Alfonso W. Avolio, Salvatore Agnes, Antonio Gasbarrini, Erida Nure, Massimo Siciliano, Rita Gaspari, Raffaella Barbarino, Marco Castagneto. Rome, Italy.

57 **PROGNOSTIC SIGNIFICANCE OF CELLULAR REJECTION FOUND IN PROTOCOL BIOPSIES AFTER LIVER TRANSPLANTATION. (Abstract # 255)**
Vibhakorn Shusang, Pinelopi Manousou, Laura Marelli, George Kalambokis, Nancy Rolando, Caroline A. Sabin, Brian Davidson, Keith Rolles, Andrew K. Burroughs. London, United Kingdom.

58 **UNCOMPLEXED Gc-GLOBULIN AS EARLY PROGNOSTIC MARKER FOR INITIAL GRAFT FUNCTION AFTER ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 256)**
Sabine J. Presser, Guido Junge, Jan M. Langrehr, Peter Neuhaus. Berlin, Germany.

59 **ACUTE RENAL FAILURE IN LIVER TRANSPLANTATION: IMPACT ON OUTCOME. (Abstract # 257)**
Rogerio C. Afonso, Renato Hidalgo, Jose M. A. Moraes-Junior, Tadeu Thome, Patricia Khonde, Maria P. V. C. Zurstrassen, Thais D. Bacoccina, Sergio P. Meira-Filho, Marcelo B. Rezende, Luis E. P. Fonseca, Fernando Pandullo, Ben-Hur Ferraz-Neto. Sao Paulo, Brazil; Sorocaba, Brazil.

60 **IMPACT OF MODEL FOR END-STAGE LIVER DISEASE (MELD) ON SURVIVAL AFTER LIVER TRANSPLANTATION: A BRAZILIAN EXPERIENCE. (Abstract # 258)**
Ajacio Brandao, Sandra Fuchs, Ana Gleisner, Claudio Marroni, Maria L. Zanotelli, Guido Cantisani. Porto Alegre, RS, Brazil.

61 **THE MODEL FOR END-STAGE LIVER DISEASE (MELD) ON POSOPERATIVE DAY 5: A PREDICTOR OF MORTALITY AND RETRANSPLANTATION. (Abstract # 259)**
Camila P. de Vasconcelos, Thomson M. Palma, Vinicius M. R. Silva, Carlos A. Cavalcante, Alexandre B. Cavalcanti, Sergio Mies. Sao Paulo, SP, Brazil.

62 **DONOR VARIABLES PREDICT CLINICAL AND VIRAL OUTCOME FOLLOWING ORTHOTOPIC LIVER TRANSPLANTATION IN PATIENTS WITH HEPATITIS C (HCV) INFECTION. (Abstract # 260)**
Geoff W. McCaughan, Jade Jamais, Martin James, David Joseph, Debbie Verran, James Gallagher, Michael Crawford, David Koorey, Simone Strasser, Nick Shackel. Sydney, Australia.

63 **EVALUATION OF QUALITY OF LIFE IN LIVER TRANSPLANT PATIENTS AND CIRRHOTIC CANDIDATES IN THE WAITING LIST IN PORTO ALEGRE, BRAZIL. (Abstract # 261)**
Carla A. Taroncher, Ana Luiza M. Gleisner, Maria Lucia Zanotelli, Guido P. C. Cantisani, Ajácio B. M. Brandão, Marcelo P. A. Fleck, Claudio Augusto Marroni. Porto Alegre, Rio Grande do Sul, Brazil.

64 **THE OUTCOME OF LIVER TRANSPLANT USING MARGINAL GRAFTS. (Abstract # 262)**
Huda M. Noujaim, Marcelo P. de Miranda, Cristiane M. F. Ribeiro, Regina Santos, Tercio Genzini. São Paulo, Brazil.

65 **EXPERIENCE OF INDETERMINATE CHRONIC HEPATITIS AFTER LIVER TRANSPLANTATION. (Abstract # 263)**
Federica Miculan, Mylene Sebagh, Stephen Hrusovsky, Eric Ballot, Anne-Marie Roque-Afonso, Hossein Fahramand, Catherine Guettier, Denis Castaing, Didier Samuel, Jean-Charles Duclos-Vallee. Villejuif, France.

66 **LIVER TRANSPLANT SECONDARY NON-FUNCTION: DEFINING A DELAYED CHOLESTATIC GRAFT FAILURE. (Abstract # 264)**
Greg J. McKenna, Edmund Sanchez, Srinath Chinnakotla, Henry Randall, Richard Ruiz, Nicholas Onaca, Dmitriy Nikitin, Tariq Khan, Marlon Levy, Robert Goldstein, Goran Klintmalm. Dallas, TX, USA.

67 **LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA BEYOND MILAN CRITERIA. (Abstract # 265)**
Kyung-Suk Suh, Eung-Ho Cho, Hae Won Lee, Woo Young Shin, Jai Young Cho, Nam-Joon Yi, Won Kim, Jung-Hwan Yoon, Kuhn Uk Lee. Seoul, Republic of Korea.

68 **TRANSPLANT FOR PATIENTS OUTSIDE THE MILAN CRITERIA CAN YIELD GOOD RESULTS. (Abstract # 266)**
Javier Chapochnick, Alger Aquino, Takahiro Murakami, Ahmed Fahmy, Devon John, Thomas Diflo, Glyn Morgan, Lewis Teperman. New York, NY, USA.

69 **ALCOHOLIC CIRRHOSIS AS A RISK FACTOR FOR THE DEVELOPMENT OF BILIARY COMPLICATION IN LIVER TRANSPLANTATION. (Abstract # 267)**
C. Quintini, A. Cocieru, F. Aucejo, K. Hirose, K. Hashimoto, S. Nakagawa, T. Diago Uso, B. Eghtesad, C. Winans, D. Vogt, D. Kelly, J. Fung, C. Miller. Cleveland, OH, USA.

70 **CLINICAL SITUATION OF VHC (+) LIVER TRANSPLANT PATIENTS AFTER 10-YEAR OF SURVIVAL. (Abstract # 268)**
Itxarone Bilbao, Cristina Dopazo, Ernesto Castro, Gonzalo Sapisochin, Alfredo Escartin, Luis Castells, Jose L. Lazaro, Inigo Lopez, Joaquin Balsells. Barcelona, Spain.

71 **PREGNANCY AND DELIVERY IN LIVER GRAFT RECIPIENTS. (Abstract # 269)**
Zoulika Jabiry-Zieniewicz, Katarzyna Bobrowska, Miroslaw Wielgos, Pawel Kaminski, Krzysztof Zieniewicz, Marek Krawczyk. Warsaw, Poland.

72 **RESPIRATORY FUNCTION IN CIRRHOTIC PATIENTS WHO UNDERWENT ORTHOTOPIC LIVER TRANSPLANTATION (OLT) EMPHASYS IN INTRAPULMONARY SHUNTS. (Abstract # 270)**
Jose S. Moreira, Gisele Bassani, Claudio A. Marroni, Ajacio B. M. Brandao, Eduardo Garcia, Maria L. Zanotelli, Guido Cantisani. Porto Alegre, Rio Grande do Sul, Brazil.

73 **AUTOANTIBODIES AFTER PEDIATRIC LIVER TRANSPLANTATION. (Abstract # 271)**
Gilda Porta, Irene K. Miura, Vera L. Baggio, Renata S. Pugliese, Tereza Guimaraes, Eduardo Carone, Joao Seda Neto, Alcides A. Salzedas Netto, Vincenzo Pugliese, Andre Godoy, Paulo Chapchap. Sao Paulo, Brazil.

74 **METHYLENE BLUE AS A BRIDGE TO RECOVERY FROM LIVER TRANSPLANTATION: CASE REPORT. (Abstract # 272)**
Joyce Roma, A. Carolina Galvão, Ivan Zyngier, Zulane Veiga, Denise Leite, Jefferson Alves, Rodrigo Amil, Marcelo Enne, Joao Pereira, Cassia Guedes, Elizabeth Balbi, Lucio Pacheco. Rio de Janeiro, Brazil.

75 **LIVER TRANSPLANTATION FOR END-STAGE CHRONIC LIVER DISEASE. TOWARD ZERO HOSPITAL MORTALITY. (Abstract # 273)**
R. Santoro, G. M. Ettorre, G. Vennarecci, P. Lepiane, F. Carboni, M. Antonini, G. Tacconi, M. Maritti, L. Tessitore, L. Miglioresi, E. Santoro. Rome, Italy.

76 **PARAMETERS OBTAINED BY HEPATOBILIARY SCINTIGRAPHY HAVE SIGNIFICANT CORRELATION WITH BIOCHEMICAL FACTORS EARLY AFTER LIVER TRANSPLANTATION. (Abstract # 274)**
Shinji Yamamoto, Rimma Danielsson, Hassan A. Kansoul, Irina Savicheva, Peter Aspelin, Henrik Gjertsen, Bo-Göran Ericzon. Stockholm, Sweden.

77 **LIVER UNIT: 1000 TRANSPLANTS. (Abstract # 275)**
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78 **IS HIGH-DOSE APROTININ SAFE AND NECESSARY FOR PATIENTS UNDERGOING ORTHOTOPIC LIVER TRANSPLANTATION? (Abstract # 276)**
Mitsuru Nakatsuka, Daniel Maluf, Adrian Cotterell. Richmond, VA, USA.

79 **IMPACT OF MELD SCORING ON LIVER TRANPLANTATION OUTCOMES. (Abstract # 277)**
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80 **FOURNIER´S GANGRENE AFTER LIVER TRANSPLANTATION. (Abstract # 278)**
Eduardo Fernandes, A. Claudia Rozenfeld, Rodrigo Martinez, Joaquim Ribeiro-Filho. Rio de Janeiro, Brazil.

81 **SYSTEMIC HYPERKINETIC STATE: AN INDEPENDENT PREDICTIVE MARKER OF EARLY MORTALITY IN CIRRHOTIC PATIENTS NOT RECEIVING BETA-BLOCKERS. (Abstract # 279)**
Claire Francoz, Richard Moreau, Rodolphe Sobesky, Catherine Paugam-Burtz, Didier Lebrec, Jacques Belghiti, Dominique Valla, Francois Durand. Clichy, France.

82 **INFECTIOUS SCREENING IN HIGH MELD PATIENTS IS THE KEY TO OPTIMIZE GRAFT-RECIPIENT MATCH IN LIVER TRANSPLANTATION. (Abstract # 280)**
Vinicius Rocha-Santos, Estela R. R. Figueira, Telesforo Bacchella, Rodrigo T. C. Surjan, Edson Abdalla, Ailton Sepulveda, Mauricio F. A. Barros, Marcel C. C. Machado. Sao Paulo, Brazil.

83 **SOCIAL ASPECTS OF ADULTS LIVER TRANSPLANT CANDIDATES AT SANTA CASA OF SAO PAULO, BRAZIL. (Abstract # 281)**
Norma A. Amaral, Andre I. David, Marcia Turolla, Bernadete P. Pacheco, Leila M. Bocchi, Adriana Z. Coppini, Luiz Arnaldo Szutan, Paulo C. Massarollo. Sao Paulo, SP, Brazil.

84 **THE EFFECT OF PROSTAGLANDINE E1 AND N-ACETYLCYSTEINE IN THE PRESERVATION OF THE GRAFT DURING COLD ISCHEMY IN THE LIVER TRANPLANTATITION. (Abstract # 282)**
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85 **LDLT FOR THE PATIENT WITH ACUTE HEPTIC FAILURE DURING CHEMOTHERAPY FOR HODGKINS DISEASE. (Abstract # 283)**
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86 **LIVER TRANSPLANTATION ON A DOWN´S SYNDROME SUBJECT. (Abstract # 284)**
Eduardo Fernandes, Rodrigo Martinez, Ana Claudia Rozenfeld, Cesar Wakoff, Samanta Basto, Henrique Sergio Coelho, Joaquim Ribeiro-Filho. Rio de Janeiro, Brazil.

87 **LIVER RE-TRANSPLANTATION IN CHILDREN: A SINGLE CENTER EXPERIENCE. (Abstract # 285)**
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88 **ANALYSIS OF THE CC CHEMOKINE RECEPTOR 5 32 POLYMORPHISM IN PEDIATRIC LIVER TRANSPLANT RECIPIENTS. (Abstract # 286)**
Louise Fischer-Maas, Reinhard Schneppenheim, Florian Oyen, Enke F. Grabhorn, Martin Burdelski, Rainer Ganschow. Hamburg, Germany.

89 **SPLIT-LIVER TRANSPLANTATION IN A CHILD WITH LIVER FAILURE BASED ON CHRONIC GRAFT-VERSUS-HOST DISEASE AFTER ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION FROM THE SAME DONOR. (Abstract # 287)**
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90 **A PORTAL VEIN ARTERIALIZATION. AN UNUSUAL AND NON ANATOMICAL RECONSTRUCTION. A CASE REPORT. (Abstract # 288)**
Alexandre Cerqueira, Marcelo Enne, Pacheco Lucio, Rodrigo Amil, Jefferson Alves, Guiseppe Santalucia, José Manoel Martinho. Rio de Janeiro, Brazil.

91 **SALVAGE OF HEPATIC ARTERY OCCLUSIONS IN ADULT TO ADULT LIVING DONOR LIVER TRANSPLANTATION USING GASTRIC VESSELS. (Abstract # 289)**
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92 **CHARACTERIZATION OF THE "SMALL-FOR-SIZE" SYNDROME IN AN EXPERIMENTAL MODEL OF HEPATIC TRANSPLANT. (Abstract # 290)**
Constantino Fondevila, Amelia Hessheimer, David Calatayud, Carlos Florez, Santiago Servin, Esther Mans, Jose M. Romero, Cesar Ginesta, Alberto Martinez, Pilar Taura, Juan C. Garcia-Valdecasas. Barcelona, Spain.

93 **COMPUTED TOMOGRAPHY (CT) AND INTRAOPERATIVE FLOW MEASUREMENTS (IFM) IN THE MANAGEMENT OF PORTOSYSTEMIC SHUNTS (PS) DURING LIVER TRANSPLANTATION (LTX). (Abstract # 291)**
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94 **ARTERIAL RECONSTRUCTION IN LIVING DONOR LIVER TRANSPLANTATION: ANALYSIS OF 100 CONSECUTIVE CASES WITH 1 ARTERIAL THROMBOSIS. (Abstract # 292)**
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95 **INCIDENCE AND RISK FACTORS ASSOCIATED WITH EARLY HEPATIC ARTERY THROMBOSIS IN PATIENTS UNDERGOING ORTHOTOPIC LIVER TRANSPLANTATION: A MULTIVARIABLE ANALYSIS. (Abstract # 293)**
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96 **THREE CASES OF LIVING DONOR LIVER TRANSPLANTATION IN PATIENTS WITH BUDD-CHIARI SYNDROME. (Abstract # 294)**
Gyu-seong Choi, Jae Berm Park, Doo Jin Kim, Choon Hyuck David Kwon, Sung Joo Kim, Suk-Koo Lee, Jae-Won Joh, Yun Mi Lee, Bok Nyeo Kim. Seoul, Korea.

97 **IMPACT OF ISCHEMIC PRECONDITIONING IN GRAFT FUNCTION AND INFLAMMATORY MEDIATORS IN ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 295)**
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99 **INTRA OPERATIVE HEMODYNAMIC ALTERATIONS IN THE PIGGYBACK LIVER TRANSPLANTATION. (Abstract # 296)**
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100 **BACK-TABLE RECONSTRUCTION OF REPLACED RIGHT HEPATIC ARTERY IN WHOLE LIVER TRANSPLANTATION: RETROSPECTIVE COMPARATIVE STUDY AND OUTCOME IN 75 CASES. (Abstract # 297)**
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101 **INTERPOSITION OF SUPERIOR MESENTERIC ARTERY GRAFT ALLOWS SAFE SIMULTANEOUS ARTERIAL AND PORTAL REVASCULARIZATION IN RIGHT-SIDED SPLIT-LIVER TRANSPLANTATION. (Abstract # 298)**
Paulo C. B. Massarollo, Rafael A. A. Pécora, Alcides Salzedas-Netto, Carlos E. S. Baía, Margareth P. Lallée, Olival Lucena, Paulo S. V. Melo, Claúdio M. Lacerda, Sérgio Mies. São Paulo, Brazil; Recife, Brazil.

102 **RISK FACTORS FOR THROMBOSIS OF AORTIC CONDUITS AFTER CADAVERIC LIVER TRANSPLANTATION. (Abstract # 299)**
Umberto Maggi, Ernesto Melada, Paolo Reggiani, Paolo Bertoli, Giorgio Rossi. Milano, Italy.

103 **FEASIBILITY OF VENA CAVA PRESERVATION DURING LIVER TRANSPLANTATION FOR POLYCYSTIC LIVER DISEASE. (Abstract # 300)**
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104 **UNI-VARIABLE ANALYSIS OF ASCITE DRAINAGE AND GRAFT SIZE IN RIGHT LOBE LIVING-DONOR LIVER TRANSPLANTATION. (Abstract # 301)**
Thomson M. Palma, Thiago Beduschi, Vinicius M. R. Silva, Ana Olga N. G. F. Mies, Ana Suely Zan, Bianca Della-Guardia, Carlos E. S. Baia, Eloisa H. Quintela, Leonardo R. Ferraz, Camila P. Vasconcelos, Marcio D. de Almeida, Margareth P. Lallee, Osvaldo I. Pereira, Sergio Mies. São Paulo, SP, Brazil.

105 **LIVER TRANSPLANTATION WITH INFERIOR VENA CAVA PRESERVATION VERSUS STANDARD TECHNIQUE: RESULTS OF A COHORT PROSPECTIVE STUDY. (Abstract # 302)**
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106 **POSTREPERFUSION SYNDROME AND PREDICTOR FACTORS FOR SURVIVAL AFTER LIVER TRANSPLANTATION. (Abstract # 303)**
Ilka F. S. F. Boin, Yuri L. Botteon, Raquel Stucchi, Adilson R. Cardoso, Cristina Caruy, Marilia I. Leonardi, Luiz S. Leonardi. Campinas, São Paulo, Brazil.

107 **A MODEL FOR ASSESSMENT OF HYPERTROPHIC CAUDATE LOBE IN PIGGYBACK TECHNIQUE. (Abstract # 304)**
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108 **NECROTIZING FASCIITIS BY *ASPERGILLUS* INFECTION AFTER LIVER TRANSPLANTATION. (Abstract # 305)**
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109 **LIVER RETRANSPLANTION USING PIGGYBACK TECHNIQUE IN A PATIENT PREVIOUSLY TRANSPLANTED BY STANDARD TECHNIQUE. (Abstract # 306)**
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110 **AVOIDANCE OF SKIN MACERATION FOR PREVENTION OF BED SORE DURING LIVER TRANSPLANTATION. (Abstract # 307)**
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111 **CMV PNEUMONIA AND LIVER REJECTION IN COMBINED LIVER – KIDNEY TRANSPLANTATION: A CASE REPORT. (Abstract # 308)**
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112 **THE ROLE OF BILIARY RECONSTRUCTION TECHNIQUE AND LIVER ANATOMY IN BILIARY MORBIDITY AFTER ADULT LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 309)**
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113 **IMPACT OF PRE-TRANSPLANT SERUM HEPATITIS C VIRUS (HCV)-RNA NEGATIVITY ON POST-TRANSPLANT OUTCOME IN PATIENTS WITH HCV-RELATED CIRRHOSIS: A STUDY INCLUDING INTRA HEPATIC HCV-RNA STUDY. (Abstract # 310)**
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114 **FIBROSIS PROGRESSION IN HCV POSITIVE LIVER TRANSPLANT RECIPIENTS TREATED OR UNTREATED WITH INTERFERON- . (Abstract # 311)**
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115 **COMPARATIVE STUDY OF LIVING DONOR LIVER TRANSPLANTATION FOR DECOMPENSATED HEPATITIS B AND C LIVER CIRRHOSIS WITH OR WITHOUT HEPATOCELLULAR CARCINOMA. (Abstract # 312)**
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116 **PERSISTENCE OF VRE INFECTION IN LIVER TRANSPLANT RECIPIENTS TREATED WITH DAPTOMYCIN. (Abstract # 313)**
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117 **INFECTIONS CAUSED BY GRAM-POSITIVE BACTERIA IN LIVER TRANSPLANT RECIPIENTS: PRESENT SITUATION AND CHALLENGES. (Abstract # 314)**
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119 **EFFICACY AND SAFETY OF VALGANCICLOVIR IN THE TREATMENT OF CYTOMEGALOVIRUS INFECTION IN LIVER TRANSPLANTATION. (Abstract # 316)**
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120 **THE EFFECT OF CALCINEURIN INHIBITOR USAGE ON HEPATIC FIBROSIS PROGRESSION IN HCV-POSITIVE LIVER TRANSPLANT RECIPIENTS: A TWO-CENTRE STUDY. (Abstract # 317)**
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121 **SAFETY OF RECURRENT HEPATITIS C TREATMENT AFTER LIVER TRANSPLANTATION WITH USE OF ADJUVANTS. (Abstract # 318)**
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122 **COMPLICATED CRIPTOCOCCAL MENINGITIS OF EARLY PRESENTANTION AFTER LIVER TRANSPLANTATION: CASE SERIES. (Abstract # 319)**
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123 **PERPLEXED CAUSES OF POST-LIVING-RELATED-LIVER-TRANSPLANT HEPATIC FAILURE IN A HBV POSITIVE RECIPIENT: HBV BREAKTHROUGH WITH YMDD MUTATION, HSV REACTIVATION OR PORTAL VEIN STENOSIS? (Abstract # 320)**
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124 **MODULATION OF INFLAMMATORY RESPONSE ON HEPATIC ISCHEMIA-REPERFUSION INJURY IN RATS: EFFECTS OF A HIGH-FAT DIET WITH PUFAS-OMEGA-3. (Abstract # 321)**
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125 **METABOLITES OF ARACHIDONIC ACID AS EARLY MARKER OF LIVER GRAFT INJURY. (Abstract # 322)**
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126 **A SIMPLIFIED MODEL OF ARTERIALIZED LIVER TRANSPLANTATION IN RAT WITH ADHESIVE SUTURELESS ANASTOMOSIS. (Abstract # 323)**
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127 **EVALUATION OF LIVER GRAFTS DURING TRANSPLANTATION USING AUTOFLUORESCENCE SPECTROSCOPY. (Abstract # 324)**
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128 **EFFECT OF N-ACETYLCYSTEINE ON INTRA-OPERATIVE CU,ZN-SOD VALUES IN LIVER TRANSPLANT RECIPIENTS. (Abstract # 325)**
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129 **COMPARISON OF HEPATIC ARTERY AND PORTAL VEIN HEMODYNAMICS IN PATIENTS WITH CHRONIC BUDD-CHIARI SYNDROME (CBCS) AND HEALTHY INDIVIDUALS: EFFECT OF PARTIAL AND COMPLETE OCCLUSION OF HEPATIC VEINS, PORTAL FLOW INVERSION AND PORTAL THROMBOSIS. (Abstract # 326)**
Ailton Sepulveda, Jr., Andre C. Oliveira, Rodrigo C. Surjan, Antonio S. Marcelino, Maria C. Chammas, Giovanni G. Cerri, Telesforo Bacchella, Marcel C. Machado. São Paulo, Brazil.

130 **INTRA-HEPATIC COLLATERALS AND HEMODYNAMIC CHANGES IN CHRONIC BUDD CHIARI SYNDROME: DOPPLER AND ECHO ENHANCED SONOGRAPHY FINDINGS. (Abstract # 327)**
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131 **RESPIRATORY COMPLICATIONS AFTER PIGGYBACK LIVER TRANSPLANTATION. (Abstract # 328)**
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132 **FULMINANT HEPATIC FAILURE IN THE LARGEST TERTIARY HOSPITAL IN BRAZIL. (Abstract # 329)**
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133 **LIVER TRANSPLANTATION IN 35 PATIENTS WITH FULMINANT HEPATIC FAILURE. (Abstract # 330)**
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134 **HEART FAILURE AS A CAUSE OF SEVERE ACUTE HYPOXIC HEPATITIS: AN OFTEN UNKNOWN CONDITION. (Abstract # 331)**
Sonia Ben Hamida, Philippe Ichai, Faouzi Saliba, Bruno Roche, Jean-Charles Duclos-Vallee, Denis Castaing, Didier Samuel. Villejuif, France.

135 **TWO-STAGE TOTAL HEPATECTOMY AND LIVER TRANSPLANTATION FOR FULMINANT HEPATIC FAILURE AND PRIMARY GRAFT DYSFUNCTION. (Abstract # 332)**
Hyo Jun Lee, Sung Gyu Lee, Young Joo Lee, Kwang Min Park, Shin Hwang, Ki Hun Kim, Chul Soo Ahn, Deok-Bog Moon, Tae Yong Ha, Gi Won Song, Ki Myung Moon, Bum Soo Kim, Dong Hwan Jung, Jeong Ik Park, Je Ho Ryu. Seoul, Republic of Korea.

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Room: Gavea A&B, 5th Floor

8:00 AM – 10:00 AM **Plenary Session I**
Page 37 *Room: Gavea A&B, 5th Floor*

10:00 AM – 10:30 AM **Coffee Break**
Room: Copacabana, 5th Floor

10:30 AM – 12:00 PM **Featured Symposium**
Page 38 **Living Donor Liver Transplantation**
Room: Gavea A&B, 5th Floor

12:00 PM – 12:30 PM **State-of-the-Art Lecture**
Page 38 **Recurrent Disease**
Room: Gavea A&B, 5th Floor

12:30 PM – 1:00 PM **ILTS Business Meeting**
Page 38 *Room: Gavea A&B, 5th Floor*

1:00 PM – 2:00 PM **Break**

2:00 PM – 3:30 PM **Featured Symposium**
Page 38 **Pediatric**
Room: Vidigal A&B, 5th Floor

2:00 PM – 3:30 PM **Concurrent Sessions**
Page 39 **Anesthesia / Critical Care Medicine**
Room: Ipanema, 26th Floor

Page 39 **Surgical Techniques / Complications**
Room: Gavea B, 5th Floor

Page 40 **Viral Hepatitis: Outcomes of Transplantation**
Room: Gavea A, 5th Floor

3:30 PM – 4:00 PM **Coffee Break**
Room: Copacabana, 5th Floor

4:00 PM – 5:30 PM **Concurrent Sessions**
Page 41 **Extented Criteria Donors**
Room: Ipanema, 26th Floor

Page 41 **Outcomes**
Room: Gavea B, 5th Floor

Page 42 **Patient Selection/Organ Allocation**
Room: Gavea A, 5th Floor

Page 43 **Pediatric Liver Transplantation: The Unique Challenges**
Room: Vidigal A&B, 5th Floor

5:30 PM – 6:00 PM **Poster Grand Rounds Session III**
Page 43 **Comments on Chosen Posters**
Room: Vidigal A&B, 5th Floor

5:30 PM – 6:30 PM **Poster Session III**
Page 44 *Room: Leme, 5th Floor*

Page 53 **Late Breaking Poster Abstracts**
Room: Leme, 5th Floor

8:00 PM – 11:00 PM **Gala Dinner**
Off-site – Copacabana Palace
*Transportation will be provided by the ILTS, departing from the Sheraton Rio Hotel promptly at 7:30 PM.

Friday, June 22, 2007

Interactive Session - Pathology Challenges in Liver Transplantation
7:00 – 8:00 AM

Room: Gavea A&B, 5th Floor
Moderator: John Lake, MD, University of Minnesota Medical School, Minneapolis, United States

Panelists: Agnaldo Soares Lima, MD, Universidade Federal de Minas Gerais, Belo Horizonte, Brazil & Katia Leite, MD, Hospital Sirio Libanes, Sao Paulo, Brazil

7:00 AM **Extended Criteria Donor: Are Biopsies Needed**
Robert Merion, MD
University of Michigan
Ann Arbor, United States

7:10 AM **Rejection X HCV Recurrence**
Lydia Petrovic, MD
New York University Medical Center
New York, United States

7:20 AM **Fat in the Liver Donor**
Pierre Clavien, MD, PhD
University Hospital Zurich
Zurich, Switzerland

7:30 AM **Case Presentations**
Lydia Petrovic
New York University Medical Center
New York, United States

Plenary Session I
8:00 AM – 10:00 AM

Room: Gavea A&B, 5th Floor
Chairs: Paulo Chapchap, MD, Hospital Sirio Libanes, Sao Paulo, Brazil & Geoff McCaughan, MD, PhD, Royal Prince Alfred Hospital, Sydney, Australia

8:00 AM **EFECT OF INTRAOPERATIVE HYPERGLYCEMIA DURING LIVER TRANSPLANTATION. (Abstract # 333)**
Shawn J. Pelletier, John B. Ammori, Matthew Sigakis, Jeffrey D. Punch, Michael O'Reiley. Ann Arbor, MI, USA.

8:10 AM **LAPAROSCOPIC LIVING DONOR LEFT LOBE LIVER HARVESTING IN PEDIATRIC LIVER TRANSPLANTATION. INITIAL RESULTS. (Abstract # 334)**
Amr Abdelaal, Ali Choukr, Mustafa Adham, Jerome Dumortier, Pierre Sagnard, Catherine Boucaud, Olivier Boillot. Lyon, France.

8:20 AM **IMPACT OF INFLOW OCCLUSION IN ADULT RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 335)**
Murat Dayangac, Burcin Taner, Deniz Balci, Zahide Kurt, Baris Akin, Cihan Duran, Omer Ayanoglu, Yildiray Yuzer, Yaman Tokat. Istanbul, Turkey.

8:30 AM **MATCHED CASE-CONTROL ANALYSIS OF RECIPIENTS OF STANDARD LIVER DONORS AND THOSE FROM DONATION AFTER CARDIAC DEATH. (Abstract # 336)**
Rodrigo M. Vianna, Richard S. Mangus, Ashesh P. Shah, Jonathan A. Fridell, Ivanessa Pardo, Martin Milgorm, Joseph Tector. Indianapolis, IN, USA.

8:40 AM **HEPATITIS FLARES WITH EARLY PREDNISOLONE WITHDRAWAL AFTER LIVER TRANSPLANTATION FOR HCV. (Abstract # 337)**
Gary P. Jeffrey, Edward Gane, Mee-Ling Yeong, Kai Chow, Peter Johnston, John McCall, Stephen Munn. Auckland, New Zealand; Perth, Australia.

8:50 AM **INFLUENCE OF STEROIDS ON HCV RECURRENCE AFTER LIVER TRANSPLANTATION: A PROSPECTIVE STUDY. (Abstract # 338)**
Marco Vivarelli, Patrizia Burra, Giuliano La Barba, Daniele Canova, Alessandro Cucchetti, Marco Senzolo, Maria Guido, Antonia D'Errico, Roberto Merenda, Daniele Neri, Umberto Cillo, Antonio D. Pinna. Bologna, Italy; Padua, Italy.

9:00 AM **REDUCING CALCINEURIN INHIBITION IN LIVER TRANSPLANT: 6 MONTH INTERIM DATA FROM A MULTI-CENTRE RANDOMISED CONTROLLED STUDY. (Abstract # 339)**
J. M. Neuberger, A. D. Mayer, P. Neuhaus, J. Pirenne, D. Samuel, A. Rimola, the ReSpECT Study Group. Birmingham, United Kingdom; Berlin, Germany; Leuven, Belgium; Villejuif, France; Barcelona, Spain.

9:10 AM **PRIMARY TUMOR SITE AND LIVER SIZE ARE PREDICTORS FOR SURVIVAL AFTER LIVER TRANSPLANTATION FOR ENDOCRINE METASTASES. A 85-CASE FRENCH MULTICENTRIC REPORT. (Abstract # 340)**
E. Grégoire, Y. P. Le Treut, J. Belghiti, O. Boillot, O. Soubrane, G. Mantion, D. Cherqui, D. Castaing, P. Ruszniewski, P. Wolf, F. Paye, E. Salame, B. Suc, F. R. Pruvot, G. Benhamou, J. Baulieux, F. Navarro, K. Boudjema, C. Letoublon. Marseille, France; Clichy; Lyon; Paris; Besançon; Créteil; Villejuif; Strasbourg; Caen; Toulouse; Lille; Montpellier; Rennes; Grenoble, France.

9:20 AM **EXTENSION OF MILAN CRITERIA TO 5-5 CRITERIA DOES NOT IMPACT SURVIVAL NOR HCC RECURRENCE AFTER LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA. (Abstract # 341)**
Hanaa M. Badran, Carole Meyer, Rene Adam, Aurelie Plessier, Francois Durand, Olivier Boillot, Sebastien Dharancy, M. N. Hilleret, Thomas Decaens, Daniel Cherqui, Christophe Duvoux. Creteil, France; Strasbourg, France; Villejuif, France; Clichy, France; Lyon, France; Lille, France; Grenoble, France; Chebin Elkom, Egypt.

9:30 AM **FACTOR V IS LESS THROMBOPLASTIN (TBP) DEPENDANT THAN INTERNATIONAL NORMALIZED RATIO (INR) AND IS A SIGNIFICANT PREDICTOR OF WAITLIST MORTALITY. (Abstract # 342)**
Andres E. Ruf, Marta E. Martinuzzo, Graciela S. Cerrato, Lila L. Chavez, Valeria I. Descalzi, Silvina E. Yantorno, Gustavo L. Podesta, Federico G. Villamil. Buenos Aires, Argentina.

9:40 AM **AGE RELATED INCIDENCE OF ACUTE CELLULAR REJECTION IN PAEDIATRIC LIVER TRANSPLANTATION. (Abstract # 343)**
Jonathan M. Hind, Rachel M. Taylor, Mohammed Rela, Nigel Heaton, Anil Dhawan. London, United Kingdom.

9:50 AM **PROMINENT MIGRATION OF IL-10 PRODUCING DONOR DENDRITIC CELLS INTO THE RECIPIENT AFTER LIVER – BUT NOT AFTER KIDNEY TRANSPLANTATION: IMPLICATIONS FOR TOLERANCE INDUCTION? (Abstract # 344)**
Brenda M. Bosma, Herold J. Metselaar, Jeroen H. Gerrits, Nicole M. van Besouw, Shanta Mancham, Hugo W. Tilanus, Ernst J. Kuipers, Jaap Kwekkeboom. Rotterdam, Netherlands.

Coffee Break
10:00 AM – 10:30 AM

Room: Copacabana, 5th Floor

Featured Symposium: Living Donor Liver Transplantation
10:30 AM – 12:00 PM

Room: Gavea A&B, 5th Floor
Chairs: Charles M Miller, MD, MBA, Cleveland Clinic Foundation, Cleveland, United States & Julio Cesar Wiederkehr, Hospital Pequeno Principe, Curitiba, Brazil

10:30 AM **Small for Size Liver Transplantation**
Shin Hwang, MD
ASAN Medical Center
Seoul, Korea

10:50 AM **Ethical Aspects on Donor Compensation**
Timothy L. Pruett, MD
University of Virginia Health Systems
Charlottesville, United States

11:10 AM **Technical Aspects: Evidence Supporting Once Controversial Issues**
Chung Mau Lo, MD
University of Hong Kong
Hong Kong, China

11:30 AM **Donor Morbidity and Mortality**
Charles M. Miller, MD, MBA
Cleveland Clinic Foundation
Cleveland, United States

11:50 PM **Discussion**

State-of-the-Art Lecture
12:00 PM – 12:30 PM

Room: Gavea A&B, 5th Floor
Chair: Ronald W. Busuttil, MD, PhD, University of California, Los Angeles, Los Angeles, United States

Recurrent Disease
Federico Villamil, MD
Favaloro Foundation and University
Buenos Aires, Argentina

ILTS Business Meeting
12:30 PM – 1:00 PM

Room: Gavea A&B, 5th Floor

Break
1:00 – 2:00 PM

Featured Symposium: Pediatric
2:00 PM – 3:30 PM

Room: Vidigal A&B, 5th Floor
Chairs: Anil Dhawan, MD, Kings College, London, United Kingdom & Lucio F. Pacheco, MD, Hospital Geral de Bonsucesso, Rio de Janeiro, Brazil

2:00 PM **Critical Evaluation of Organ Allocation Policies**
Sue V. McDiarmid, MD
University of California, Los Angeles
Los Angeles, United States

2:20 PM **Strategies to Prevent and Treat Lymphoproliferative Disease**
Carlos Esquivel, MD, PhD
Stanford University Medical Center
Palo Alto, United States

2:40 PM **Living Related Liver Transplantation for Fulminant Liver Failure and for Metabolic Diseases**
Luis Podesta, MD
Favaloro Foundation and University
Buenos Aires, Argentina

3:00 PM **Living Related Versus Split Liver Transplantation for Pediatric Recipients**
Jorge Reyes, MD
University of Washington
Seattle, United States

3:20 PM – 3:30 PM **Discussion**

Concurrent Session:
Anesthesia / Critical Care Medicine
2:00 PM – 3:30 PM

Room: Ipanema, 26th Floor
Chairs: Shushma Aggarwal, MD, University of Pittsburgh Medical College, Wexford, United States & Susan Mallett, MB, BS, FRCA, Royal Free Hospital, London, United Kingdom

2:00 PM **INFLUENCE OF INTRAOPERATIVE APROTININ ON INCIDENCE OF EARLY HEPATIC ARTERY THROMBOSIS. (Abstract # 345)**
Mahalaxmi Iyer, Philip Bayly. Newcastle Upon Tyne, United Kingdom.

2:10 PM **DEFINING HYPERCOAGULABILITY IN ORTHOTOPIC LIVER TRANSPLAN - TATION – A RETROSPECTIVE ANALYSIS OF THROMBOELASTOGRAPH DATA. (Abstract # 346)**
Clare Melikian, Seema Agarwal, Susan Mallett. London, United Kingdom.

2:20 PM **ACCURACY OF STRESS ECHOCARDIOGRAM (S-ECHO) AND CAROTID DUPLEX ULTRASOUND (C-DU) IN HIGH RISK LIVER TRANSPLANT (OLT) CANDIDATES WHO UNDERWENT CORONARY ANGIOGRAM (CA). (Abstract # 347)**
Fernando M. Cairo, Sonia M. Sillitti, Valeria I. Descalzi, Andres E. Ruf, Silvina E. Yantorno, Luis G. Podesta, Federico G. Villamil. Capital Federal, Buenos Aires, Argentina.

2:30 PM **HEPATOPULMONARY SYNDROME (HPS): A PROSPECTIVE STUDY ON THE PROGRESSION OF HIPOXEMIA. (Abstract # 348)**
Rita C. M. A. da Silva, Elizabete de Melo, Maristela Deberaldini, Paulo C. Arroyo, Jr., William J. Duca, Helen C. C. Felicio, Jose A. Cordeiro, Renato da Sila. Sao Jose do Rio Preto, Sao Paulo, Brazil.

2:40 PM **UTILITY OF NONINVASIVE IMPEDANCE CARDIOGRAPHY DURING ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 349)**
Wolf H. Stapelfeldt, Timothy S. Shine, Alfredo Queveda-Vela, Jonathan Pabalate, Mark Welliver. Jacksonville, FL, USA.

2:50 PM **A PROTOCOL FOR TREATMENT OF INTRACRANIAL HYPERTENSION IN ACUTE LIVER FAILURE. (Abstract # 350)**
Robert Raschke, Silke Rempe, Steve Curry, Richard Manch. Phoenix, USA.

3:00 PM **DIFFERENT PATTERN OF SPLANCNIC PERFUSION BY GASTRIC TONOMETRY IN CIRRHOTICS PATIENTS IN RELATION TO THE CHILD STATUS. (Abstract # 351)**
Valter Perilli, Alfonso W. Avolio, Salvatore Agnes, Rita Gaspari, Nunzia Martella, Maria T. Cazzato, Liliana Sollazzi, Marco Castagneto. Rome, Italy.

3:10 PM **ALBUMIN DIALYSIS USING MARS: AN EFFECTIVE TREATMENT FOR PATIENTS WITH DIFFUSE CHOLANGITIS AND REFRACTORY PRURITUS WHILE AWAITING FOR RETRANSPLANTATION. (Abstract # 352)**
Claire Francoz, Rodolphe Sobesky, Catherine Paugam-Burtz, Daniele Sommacale, Federica Dondero, Jacques Belghiti, Dominique Valla, Francois Durand. Clichy, France.

3:20 PM **PREDICTORS OF POSTREPERFUSION HYPERKALEMIA IN ADULT LIVER TRANSPLANTATION: THE IMPACT OF DONORS. (Abstract # 353)**
Victor W. Xia, Ke-Qin Hu, Jonathan R. Hiatt, Ronald W. Busuttil, Randolph H. Steadman. Los Angeles, CA, USA; Orange, CA, USA.

Concurrent Session:
Surgical Techniques / Complications
2:00 PM – 3:30 PM

Room: Gavea B, 5th Floor
Chairs: Igal Kam, MD, University of Colorado, Denver, United States & Marcel Machado, MD, Universidade de Sao Paulo, Sao Paulo, Brazil

2:00 PM **INTRAOPERATIVE PORTAL VEIN STENTING: A SIMPLE METHOD FOR SEVERE PORTAL VEIN STENOSIS IN LIVING DONOR LIVER TRANSPLANATION. (Abstract # 354)**
ChulSoo Ahn, SungGyu Lee, KwangMin Park, Shin Hwang, KiHun Kim, Deokbog Moon, TaeYong Ha, GiWon Song, Kimyung Moon, Bumsoo Kim, DongHwan Jung, HyoJun Lee, JeongIk Park, JeHo Ryu. Seoul, Korea.

2:10 PM **MICROVASCULAR RECONSTRUCTION OF HEPATIC ARTERY: PERSONAL EXPERIENCE ON 300 CASES. (Abstract # 355)**
Mehmet Alper, Murat Zeytunlu, Murat Kilic. Izmir, Turkey.

2:20 PM **HIGH PORTAL FLOW AND LOW HEPATIC ARTERY BUFFER RESPONSE IS ASSOCIATED WITH EARLY BILIARY ANASTOMOTIC STRICTURES IN LIVER TRANSPLANTATION. (Abstract # 356)**
K. Hashimoto, C. Quintini, K. Hirose, S. Nakagawa, T. Diago Uso', A. Cocieru, F. Aucejo, B. Eghtesad, D. Kelly, C. Winans, D. Vogt, J. Fung, C. Miller. Cleveland, OH, USA.

2:30 PM **BILE DUCT COMPLICATION AFTER DUCT-TO-DUCT RECONSTRUCTION IN ADULT LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 357)**
Eung-Ho Cho, Kyung-Suk Suh, Hae Won Lee, Jai Young Cho, Nam-Joon Yi, Jung-Hwan Yoon, Hee Chul Yu, Baik Hwan Cho, Kuhn Uk Lee. Seoul, Republic of Korea; Jeonbuk, Republic of Korea.

2:40 PM **DUCT-TO-DUCT BILIARY RECONSTRUCTION IN 150 CONSECUTIVE RIGHT LOBE LIVE DONOR LIVER TRANSPLANTATION. (Abstract # 358)**
Murat Kilic, Unal Aydin, Omer Unalp, Mustafa Ozsoy, Erkan Kismali, Mehmet Alper, Murat Zeytunlu. Izmir, Turkey.

2:50 PM **COMBINED ORTHOTOPIC LIVER TRANSPLANTATION AND CARDIAC SURGERY IS BOTH SAFE AND EFFECTIVE. (Abstract # 359)**
Winston R. Hewitt, Hani P. Grewal, David J. Kramer, Justin Nguyen, Timothy Shine, Darrin Willingham, Daniel Yip, Barry Rosser, Lawrence McBride, Thomas Gonwa, Andrew Keaveny, Rolland C. Dickson, Christopher B. Hughes. Jacksonville, FL, USA.

3:00 PM **15 YEARS FOLLOW-UP OF AORTOHEPATIC CONDUITS IN LIVER TRANSPLANTATION. (Abstract # 360)**
Dmitriy Nikitin, Tariq Khan, Edmund Q. Sanchez, Srinath Chinnakotla, Henry B. Randall, Greg J. McKenna, Richard Ruiz, Nicholas Onaca, Marlon F. Levy, Robert M. Goldstein, Goran B. Klintmalm. Dallas/Ft. Worth, TX, USA.

3:10 PM **BILIARY COMPLICATIONS IN LIVING DONOR LIVER TRANSPLANTATION USING RIGHT LOBE. (Abstract # 361)**
D. G. Kim, C. Y. Lee, S. J. Kim, M. D. Lee, I. S. Moon. Seoul, Republic of Korea.

3:20 PM **LEFT LATERAL SEGMENTECTOMY ON PEDIATRIC LDLT: SPECIAL ATTENTION TO SEGMENT IV. (Abstract # 362)**
Andre Godoy, Eduardo Carone, Vincenzo Pugliese, Joao Seda Neto, Eduardo A. Fonseca, Alcides A. Salzedas, Rogerio C. Alves, Carla Matos, Mario Kondo, Irene K. Miura, Renata S. Pugliese, Gilda Porta, Vera Baggio, Paulo Chapchap. Sao Paulo, Brazil.

Concurrent Session: Viral Hepatitis: Outcomes of Transplantation

2:00 PM – 3:30 PM

Room: Gavea A, 5th Floor
Chairs: Patrizia Burra, MD, University Hospital, Padova, Italy & Claudio Marroni, MD, Fundacao Faculdade Federal de Ciencias Medicas, Porto Alegre, Brazil

2:00 PM **DOES CHOICE OF CALCINEURIN INHIBITOR MATTER IN PATIENTS TRANSPLANTED FOR HEPATITIS C (HCV)? (Abstract # 363)**
Julie Thompson, Russ Weisner, John Lake. Minneapolis, MN, USA; Rochester, MN, USA.

2:10 PM **LATE GRAFT DYSFUNCTION (GD) IN HBV RECURRENCE-FREE RECIPIENTS IS ASSOCIATED WITH SERUM ANTINUCLEAR ANTIBODIES (ANA) REACTIVITY. (Abstract # 364)**
Maria F. Donato, Eliana Arosio, Valentina Monti, Francesca Agnelli, Cristina Rigamonti, Mauro Berra, Mauro Viganò, Giorgio Rossi, Massimo Colombo. Milan, Italy.

2:20 PM **LIVING DONOR LIVER TRANSPLANTATION FOR HEPATITIS B RELATED LIVER CIRRHOSIS: MID TO LONG TERM RESULTS AT A SINGLE INSTITUTION. (Abstract # 365)**
Chao-Long Chen, Shridhar Iyer, Amornetta Jordan, Chih-Chi Wang, Shih-Ho Wang, Yueh-Wei Liu, Chin-Hsiang Yang, Allan Concejero, Bruno Jawan. Kaohsiung, Taiwan.

2:30 PM **HEPATOCELLULAR CARCINOMA AND RECURRRENCE OF HEPATOCARCINOMA ARE ASSOCIATED WITH HBV RECURRENCE AFTER LIVER TRANSPLANTATION. ROLE OF TUMORAL CELLS IN HBV REPLICATION. (Abstract # 366)**
Luciana Costa Faria, Michelle Gigou, Anne-Marie Roque Afonso, Mylene Sebagh, Bruno Roche, T. C. A. Ferrari, Catherine Guettier, Denis Castaing, Didier Samuel. Villejuif, France.

2:40 PM **RECURRENCE OF HEPATITIS B IS ASSOCIATED WITH CUMULATIVE STEROID DOSE AND CHEMOTHERAPY AGAINST HEPATOCELLULAR CARCINOMA RECURRENCE AFTER LIVER TRANSPLANTATION. (Abstract # 367)**
Nam-Joon Yi, Kyung-Suk Suh, Jai Young Cho, Choon Hyuck David Kown, Kwang-Woong Lee, Jae Won Joh, Soon Il Kim, Suk-Koo Lee, Won Kim, Jung-Hwan Yoon, Kuhn Uk Lee. Seoul, Korea.

2:50 PM **OCCURRENCE OF CHOLESTATIC HEPATITIS UNDER PREEMPTIVE INF/RIBA PROTOCOL AFTER LDLT FOR HCV. (Abstract # 368)**
Sumihito Tamura, Yasuhiko Sugawara, Noriyo Yamashiki, Yuichi Matsui, Junichi Togashi, Yusuke Kyoden, Junichi Kaneko, Kayo Nojiri, Norihiro Kokudo, Masatoshi Makuuchi. Bunkyo-ku, Tokyo, Japan.

3:00 PM **CLERANCE OF HEPATITIS C VIREMIA IMPROVES LONG-TERM SURVIVAL IN LIVER RECIPIENTS WITH RECURRENT HEPATITIS C. (Abstract # 369)**
Arno Kornberg, Bernadette Kuepper, Erik Bärthel, Katharina Thrum, Jens Wilberg, Merten Hommann, Utz Settmacher. Jena, Germany.

3:10 PM **PREDICTION OF TREATMENT RESPONSE TO 72 WEEKS OF PEGYLATED INTERFERON ALFA-2A PLUS RIBAVIRIN FOR CHRONIC HEPATITIS C AFTER LIVER TRANSPLANTATION. (Abstract # 370)**
Ulf P. Neumann, A. Bergk, Marcus Bahra, Berg Thomas, Peter Neuhaus. Berlin, Germany.

3:20 PM **MULTICENTER RANDOMIZED HEPATITIS C (HCV) – THREE TRIAL POST LIVER TRANSPLANTATION (OLT): TWO-YEAR FINAL REPORT. (Abstract # 371)**
Carlos G. Fasola, Hepatitis C Three Group, Goran B. Klintmalm. Atlanta, GA, USA; Dallas, TX, USA.

Coffee Break
3:30 – 4:00 PM

Room: Copacabana, 5th Floor

Concurrent Session: Extented Criteria Donors
4:00 PM – 5:30 PM

Room: Ipanema, 26th Floor
Chairs: Paulo Fontes, MD, University of Pittsburgh Medical Center, Pittsburgh, United States & Robert Merion, MD, University of Michigan Health System, Ann Arbor, United States

4:00 PM **LIVER TRANSPLANT FROM MAASTRICHT TYPE II NON-HEART BEATING DONORS MAINTAINED WITH NORMOTHERMIC RECIRCULATION. (Abstract # 372)**
C. Fondevila, A. Hessheimer, A. Ruiz, D. Calatayud, J. Bollo, J. Ferrer, R. Charco, J. Fuster, P. Taura, J. C. Garcia-Valdecasas. Barcelona, Spain.

4:10 PM **CLINICAL TRIAL OF HYPOTHERMIC MACHINE PRESERVATION IN HUMAN LIVER TRANSPLANTATION: INTERIM RESULTS. (Abstract # 373)**
James V. Guarrera, Ben Arrington, John F. Renz, Mihwa Kim, Benjamin Samstein, Joseph Meltzer, Nikki Feirt, Sarah Bellemare, Lloyd E. Ratner, Robert S. Brown, Milan Kinkhabwala, H. Thomas Lee, Jean C. Emond. New York, USA.

4:20 PM **EFFECT OF N-ACETYLCYSTEINE ON ISCHEMIA-REPERFUSION INJURY OF EXTENDED DONOR LIVER ALLOGRAFTS. (Abstract # 374)**
Geraldine C. Diaz, Rachel Taveres-De Melo, Rudy Odeh-Ramadan, John F. Renz. New York, NY, USA.

4:30 PM **OVERCOME GRAFT SIZE MISMATCH WITH PORTAL FLOW MODIFICATION IN LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 375)**
Shuji Nobori, Satoshi Kaihara, Kenji Uryuhara, Koichi Kozaki, Kiyokazu Akioka, Hidetaka Ushigome, Toshiya Ochiai, Masahiko Okamoto, Norio Yoshimura. Kyoto, Japan; Kobe, Japan.

4:40 PM **LIVER GRAFTS FROM DONOR WITH CNS TUMORS: A SINGLE CENTER PERSPECTIVE. (Abstract # 376)**
Mark Orloff, George Tsoulfas, Randeep Kashyap, Peter Abt, Maureen Graham, Saman Safadjou, Manoj Maloo, Peter Horton, Ashokumar Jain, Adel Bozorgzadeh. Rochester, NY, USA.

4:50 PM **A SINGLE CENTER EXPERIENCE USING DONATION AFTER CARDIAC DEATH DONORS OVER 60 YEARS OLD. (Abstract # 377)**
Hani P. Grewal, Winston R. Hewitt, Justin H. Nguyen, Darrin L. Willingham, Barry G. Rosser, Andrew P. Keaveny, Jaime Aranda-Michel, Raj Satyanarayana, Denise M. Harnois, Rolland C. Dickson, Jeffery L. Steers, David B. Kramer, Christopher B. Hughes. Jacksonville, FL, USA; Sioux Falls, SD, USA.

5:00 PM **RESOURCE UTILIZATION BY DONATION AFTER CARDIAC DEATH LIVER TRANSPLANT RECIPIENTS. (Abstract # 378)**
Lisa C. Arasi, Winston R. Hewitt, Juan M. Canabal, Hani P. Grewal, Justin H. Nguyen, Darrin L. Willingham, Christopher B. Hughes, David J. Kramer. Jacksonville, FL, USA.

5:10 PM **USE OF CADAVERIC LIVERS FROM DONORS WITH REACTIVE HTLV SEROLOGY. (Abstract # 379)**
Rodrigo M. Vianna, Richard S. Mangus, Jonathan A. Fridell, Joseph Tector. Indianapolis, IN, USA.

5:20 PM **USE OF HEPATITIS C-INFECTED DONORS IN LIVER TRANSPLANTATION: A CASE-CONTROL STUDY. (Abstract # 380)**
Rodrigo M. Vianna, Richard S. Mangus, Jonathan A. Fridell, Kwo Y. Paul, Wilson Sidney, Joseph Tector. Indianapolis, IN, USA.

Concurrent Session: Outcomes
4:00 PM – 5:30 PM

Room: Gavea B, 5th Floor
Chairs: Joao Galizzi, Sociedade Brasileira de Hepatologia, Belo Horizonte, Brazil & Kymberly Watt, MD, Mayo Clinic, Rochester, United States

4:00 PM **NO IMPROVEMENT IN LONG TERM SURVIVAL FOLLOWING LIVER TRANSPLANTATION. (Abstract # 381)**
Geoff W. McCaughan, Simone I. Strasser, David Koorey, Nick Shackel. Sydney, Australia.

4:10 PM **AN ANALYSIS OF ADULT PATIENTS FOLLOWED UP BETWEEN 10-20 YEARS POST LIVER TRANSPLANTATION. (Abstract # 382)**
Geoff W. McCaughan, Ainsle Mansell, Quin C. Fu. Sydney, Australia.

4:20 PM **WHEN AND WHAT TO TRANSPLANT FOR OXALOSIS: LONG-TERM RESULTS OF 37 TRANPLANTS (KIDNEY TX ALONE [KTA], SIMULTANEOUS LIVER AND KIDNEY TX [SLK], AND/OR PRE-EMPTIVE LIVER TX PRIOR TO ESRD [PLT]) AT A SINGLE-CENTER. (Abstract # 383)**
Michael Hughes, Angelika Gruessner, Elizabeth Gross, Thanh Nguyen, Raquel Garcia-Roca, Raja Kandaswamy, Abhinav Humar, William Payne, Ranier Gruessner. Minneapolis, MN, USA.

4:30 PM **EARLY STEROID WITHDRAWAL FOLLOWING LIVER TRANSPLANT FOR AUTOIMMUNE LIVER DISEASE: UPDATED EXPERIENCE IN 100 CONSECUTIVE PATIENTS. (Abstract # 384)**
Vivek Kohli, Yi Huang, Shi-Feng Li, Ye Young, Ahmet Gurakar, Rose James, Micheal Morris, Roy Monlux, Nicholas Jabbour, Harlan Wright, Anthony Sebastian. Oklahoma City, OK, USA.

4:40 PM **THE IMPACT OF OBESITY ON LONGTERM OUTCOMES IN ORTHOTOPIC LIVER TRANSPLANTATION RECIPIENTS – RESULTS OF THE NIDDK LIVER TRANSPLANT DATABASE. (Abstract # 385)**
Jennifer R. Leonard, Julie K. Heimbach, Michael Malinchoc, Michael R. Charlton. Rochester, MN, USA.

4:50 PM **DOES SYSTEMATIC LATE BIOPSY (AFTER 10 YEARS) AFTER LIVER TRANSPLANTATION HAVE A CLINICAL IMPACT? (Abstract # 386)**
Olivier Guillaud, Jerome Dumortier, Mustapha Adham, Valerie Hervieu, Jean-Yves Scoazec, Olivier Boillot. Lyon, France.

5:00 PM **IMPACT OF METABOLIC SYNDROME ON INTERMEDIATE TERM MORTALITY IN PATIENTS UNDERGOING LIVER TRANSPLANTATION FOR HEPATITIS C. (Abstract # 387)**
Parvez S. Mantry, Thalia Mayes, Michael Kader, Benedict J. Maliakkal, Peter Abt, Adel Bozorgzadeh. Rochester, NY, USA.

5:10 PM **EFFECT OF PREOPERATIVE RESPIRATORY MUSCLE STRENGTH ON LIVER TRANSPLANT OUTCOME. (Abstract # 388)**
Carla S. Machado, Paulo C. B. Massarollo, Eliane M. Carvalho, Maria R. M. Isern, Poliana A. Lima, Sérgio Mies, Aldo J. Rodrigues, Jr.. São Paulo, SP, Brazil.

5:20 PM **OUTCOME OF A MANAGEMENT PROTOCOL FOR INTRACRANIAL HYPERTENSION IN FULMINANT HEPATIC FAILURE WITH EPIDURAL MONITORING, RECOMBINANT FACTOR VII AND HYPOTHERMIA. (Abstract # 389)**
Peter K. Linden, Shushma Aggarwal, Obaid Shakil, Richard Spiro, Raymond Planinsic, Amadeo Marcos. Pittsburgh, PA, USA.

Concurrent Session: Patient Selection/Organ Allocation
4:00 PM – 5:30 PM

Room: Gavea A, 5th Floor
Chairs: Jose Ben-Hur Ferraz Neto, MD, Hospital Albert Einstein, Sao Paulo, Brazil & Scott Biggins, MD, University of California, San Francisco, San Francisco, United States

4:00 PM **CORRELATION BETWEEN SERUM CREATININE, COCKROFT FORMULA AND DIRECT MEASUREMENT OF GLOMERULAR FILTRATION RATE IN CANDIDATES FOR LT: IMPLICATIONS FOR MELD SCORE. (Abstract # 390)**
Claire Francoz, Dominique Prie, Richard Moreau, Rodolphe Sobesky, Daniele Sommacale, Federica Dondero, Jacques Belghiti, Dominique Valla, Francois Durand. Clichy, France; Paris, France.

4:10 PM **PREDICTING EARLY TRANSPLANT FAILURE: A COMPARISON BETWEEN ARTIFICIAL NEURAL NETWORK AND LOGISTIC REGRESSION MODELS. (Abstract # 391)**
Vicente Ibáñez, Eugenia Pareja, Juan J. Vila, Antonio J. Serrano, Santiago Pérez, José Mir. Valencia, Spain.

4:20 PM **INCREASED SPLIT LIVER MATCHING POSSIBILITIES BY THE USE OF AN INTERNET-BASED NETWORK. (Abstract # 392)**
Roberto Valente, Enzo Andorno, Gregorio Santori, Tullia De Feo, Rita Ghirelli, Umberto Valente, SITF Project. Genoa, Italy; Milan, Italy.

4:30 PM **IMPACT OF PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION: AN INTENTION TO TREAT ANALYSIS FROM A SINGLE CENTER IN BRAZIL. (Abstract # 393)**
Eduardo Carone, Gilda Porta, Vincenzo Pugliese, Irene K. Miura, Eduardo A. Fonseca, Vera L. Baggio, Renata S. Pugliese, Joao Seda Neto, Alcides A. Salzedas, Massami Hayashi, Andre L. Godoy, Claudia M. Morais, Mario Kondo, Carla A. Matos, Rogerio C. Alves, Tereza Guimaraes, Marcos Beloto, Paulo Chapchap. Sao Paulo, Brazil.

4:40 PM **INITIAL EXPERIENCE IN MELD-BASED ALLOCATION SYSTEM FOR LIVER TRANSPLANTATION IN SÃO PAULO, BRAZIL. (Abstract # 394)**
Ben-Hur Ferraz-Neto, Rogerio C. Afonso, Francisco Monteiro, Luiz A. Pereira. Sao Paulo, Brazil.

4:50 PM **SURVIVAL ANALYSIS OF HIV INFECTED PATIENTS REFERRED TO A LIVER TRANSPLANT UNIT. (Abstract # 395)**
J. C. Duclos-Vallee, V. Delvart, F. Blandin, E. Teicher, T. Antonini, D. Azoulay, B. Roche, F. Saliba, P. Ichai, R. Adam, D. Castaing, D. Vittecoq, D. Samuel. Villejuif, France.

5:00 PM **RELATION BETWEEN SERUM CREATININE AND GLOMERULAR FILTRATION RATE IN PATIENTS WAITING FOR LIVER TRANSPLANT. (Abstract # 396)**
Alfeu M. Fleck, Jr., Claudio A. Marroni, Ajacio B. M. Brandao, Guido P. C Cantisani, Maria Lucia Zanotelli, Eduardo Schlindwein, Ian Leipnitz, Tomaz J. Grezzana Filho, Mario M. M. Meine, Ana Luiza Gleisner, Osvaldo E. Anselmi, Clarice Luz. Porto Alegre, Rio Grande do Sul, Brazil.

5:10 PM **LT FOR HCC: VALIDATION OF A NEW PROGNOSTIC SCORE PREDICTING DISEASE-FREE SURVIVAL. (Abstract # 397)**
French Study group of LT for HCC. Creteil, France.

5:20 PM **LIVER TRANSPLANTATION WAITING LIST MORTALITY AND ITS CHARACTERISTICS IN A BRAZILIAN CENTER. (Abstract # 398)**
Samanta Teixeira Basto, Joaquim Ribeiro, Renata Perez, Cristiane Villela-Nogueira, Denise Costa, Norma Mendes, Gerson Carreiro, Ana Lucia Ramos, Silvio Martins, Vilson Lemos, Jr., Marcos Martins, Eduardo Fernandes, Emilia Nascimento, Henrique Sergio Coelho. Rio de Janeiro, Brazil.

Concurrent Session: Pediatric Liver Transplantation: The Unique Challenges

4:00 PM – 5:30 PM

Room: Vidigal A&B, 5th Floor
Chairs: Anil Dhawan, MD, Kings College, London, United Kingdom & Themis Silveira, MD, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil

4:00 PM **LESSONS LEARNED FROM 200 CONSECUTIVE PRIMARY PEDIATRIC LIVER TRANSPLANTATIONS WITH LEFT LATERAL SEGMENT SPLIT GRAFTS. (Abstract # 399)**
V. Corno, M. C. Dezza, A. Lucianetti, G. Maldini, D. Codazzi, D. Pinelli, M. Zambelli, M. Guizzetti, M. Giovanelli, M. L. Melzi, P. Stroppa, M. Candusso, D. Alberti, G. Torre, M. Colledan. Bergamo, Italy.

4:10 PM **OPTIMIZING OUTCOMES IN PEDIATRIC LIVER TRANSPLANTATION BY GRAFT SELECTION: ANALYSIS OF UNOS/OPTN DATABASE. (Abstract # 400)**
Kwang-Woong Lee, Robert A. Montgomery, Andrew M. Cameron, Dorry L. Segev, Warren R. Maley. Baltimore, MD, USA.

4:20 PM **PREDICTORS OF SURVIVAL FOLLOWING LIVER TRANSPLANTATION IN CHILDREN LESS THAN 1 YEAR: A SINGLE CENTER ANALYSIS OF OVER 200 CASES. (Abstract # 401)**
Robert S. Venick, Doug G. Farmer, Sue V. McDiarmid, Rafik M. Ghobrial, Sherilyn A. Gordon, Hasan Yersiz, Johnny Hong, Leah Candell, Argine Cholakians, Laura Wozniak, Martin Martin, Jorge Vargas, Marvin E. Ament, Ronald W. Busuttil. Los Angeles, CA, USA.

4:30 PM **LESSONS LEARNED FROM 100 CONSECUTIVE LIVING DONOR LIVER TRANSPLANTATIONS FOR BILIARY ATRESIA IN A SINGLE CENTER. (Abstract # 402)**
Allan M. Concejero, Chao-Long Chen, Chih-Chi Wang, Shih-Ho Wang, Chih-Che Lin, Yueh-Wei Liu, Tsan-Shiun Lin, Bruno Jawan, Yu-Fan Cheng, Hock-Liew Eng, Yuan-Cheng Chiang. Kaohsiung, Taiwan.

4:40 PM **FOURTY TWO PEDIATRIC LIVER TRANSPLANTS FOR -1-ANTITRYPSIN DEFICIENCY: LONG-TERM OUTCOMES AT SINGLE CENTER. (Abstract # 403)**
M. Hughes, A. Gruessner, E. Gross, T. Nguyen, R. Garcia-Roca, H. Sharp, R. Kandaswamy, W. Payne, A. Humar, R. Gruessner. Minneapolis, MN, USA.

4:50 PM **PROSPECTIVE RANDOMISED CONTROLLED TRIAL OF MYCOPHENOLATE MOFETIL AS A PRIMARY IMMUNOSUPPRESSANT WITH TACROLIMUS IN PAEDIATRIC LIVER TRANSPLANTATION RECIPIENTS. (Abstract # 404)**
Sanjay Bansal, Anita Verma, Nigel Heaton, Mohammed Rela, Anil Dhawan. London, United Kingdom.

5:00 PM **THE PSYCHOLOGICAL CONSEQUENCES OF LIVER TRANSPLANTATION DURING ADOLESCENCE. (Abstract # 405)**
Rachel M. Taylor, Linda S. Franck, Faith Gibson, Anil Dhawan. London, United Kingdom.

5:10 PM **BLOOD TRANSFUSION-FREE PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION: DECREASING THE INCIDENCE OF MAJOR LATE COMPLICATIONS. (Abstract # 406)**
Chao-Long Chen, Allan M. Concejero, Chih-Chi Wang, Shih-Ho Wang, Yueh-Wei Liu, Chin-Hsiang Yang, Chee-Chien Yong, Amornetta Jordan. Kaohsiung, Taiwan.

5:20 PM **HIGH INCIDENCE OF DUCTOPENIC REJECTION IN CHILDREN TRANSPLANTED FOR IDIOPATHIC ACUTE LIVER FAILURE. (Abstract # 407)**
Ruth De Bruyne, Rachel M. Taylor, Nigel Heaton, Mohammed Rela, Anil Dhawan. London, United Kingdom.

Poster Grand Rounds Session III

5:30 PM – 6:00 PM

Room: Vidigal A&B, 5th Floor

Comments on Chosen Posters
Peter Neuhaus, MD
Universitatsmedizen Berlin
Berlin, Germany

Poster Session III
5:30 PM – 6:30 PM

Room: Leme, 5th Floor

1 **INTRAOPERATIVE FLUID MANAGEMENT OF 120 PATIENTS UNDERGOING LIVING DONOR HEPATECTOMY WITHOUT BLOOD TRANSFUSION: A SINGLE CENTER EXPERIENCE. (Abstract # 408)**
Bruno Jawan, Chao-Long Chen, Chih-Hsien Wang, Chia-Jung Huang, Kuan-Hung Chen, Allan Concejero, Chih-Chi Wang, Yu-Fan Cheng, Shih-Hor Wang. Kaohsiung, Taiwan.

2 **USE OF RECOMBINANT HUMAN ACTIVATED PROTEIN C IN A LIVER TRANSPLANTED PATIENT. (Abstract # 409)**
Leonardo Ferraz, Camila Paiva, Gustavo Janot, Ana Olga Mies, Sergio Mies. São Paulo, Brazil.

3 **A RETROSPECTIVE COMPARATIVE STUDY AMONG 3 SURGICAL TECHNIQUES IN OLT: CONVENTIONAL WITH VENO-VENOUS BYPASS (VVB), PIGGYBACK WITHOUT VVB, AND PIGGYBACK WITH VVB. (Abstract # 410)**
Tetsuro Sakai, Raymond M. Planinsic, Ibetsam A. Hilmi, J. Wallis Marsh. Pittsburgh, PA, USA.

4 **FATAL TRANSFUSION-RELATED ACUTE LUNG INJURY (TRALI) AFTER LIVER TRANSPLANTATION. (Abstract # 411)**
Leonardo Ferraz, Andreia Kondo, Margareth Lalle, Bianca Della Guardia, Sergio Mies. São Paulo, Brazil.

5 **CARDIAC OUTPUT IN BISPECTRAL INDEX (BIS™) MONITORED PATIENTS DURING ANESTHESIA FOR LIVER TRANSPLANTATION. (Abstract # 412)**
R. Schumann, J. Hudcova, C. Anderson, I. Bonney. Boston, USA.

6 **HEMOLYTIC UREMIC SYNDROME AFTER NON SHIGATOXIN – PRODUCING E. COLI SEPSIS IN LIVER TRANSPLANT PATIENT. (Abstract # 413)**
Pedro Medeiros, Jr., Patricia Bonazzi, Edson Abdala, Telésforo Bacchella, Marcel Machado. São Paulo, SP, Brazil.

7 **RHABDOMYOLYSIS WITH COMPARTMENT SYNDROME AFTER COMBINED KIDNEY AND PANCREAS TRANSPLANT. (Abstract # 414)**
Jana Hudcova, Alan Lisbon, Achikam Oren-Grinberg. Boston, USA.

8 **PROCALCITONIN IN THE EARLY POSTOPERATIVE COURSE AFTER LIVER TRANSPLANTATION. (Abstract # 415)**
Guadalupe Aguirre-Avalos, Marco A. Covarrubias-Velasco, Jose O. Vazquez-Diaz, Karla Robles-Ramirez, Rogelio Maciel-Sandoval, Luis C. Rodriguez-Sancho, Hilario Coronado-Magana. Guadalajara, Jalisco, Mexico.

9 **ANESTHESIA MANAGEMENT OF A LIVER RECIPIENT WITH MITRAL REGURGITATION. (Abstract # 416)**
Rodrigo Diaz, Glauber Gouvea, Lucio Auler, Andre Soluri, Marcelo Enne, Lucio Pacheco, Alexandre Cerqueira, Jose Manuel Martinho, Jefferson Alves, Rodrigo Amil, Elizabeth Balbi. Rio de Janeiro, Brazil.

10 **NOVEL USAGE OF BEVACIZUMAB (AVASTIN) IN HEREDITARY HAEMORRHAGIC TELANGIECTASIA REVERSING THE NEED FOR LIVER TRANSPLANTATION. (Abstract # 417)**
Andrew Mitchell, Leon Adams, Gerard MacQuillan, Jonathon Tibballs, Rohan Vanden Driesen, Luc Delriviere. Perth, Western Australia, Australia.

11 **RECURRENT HEPATITIS C AFTER LIVER TRANSPLANTATION: ACCELERATED FIBROSIS PROGRESSION. (Abstract # 418)**
Rodrigo S. Honorio, Evandro S. Mello, Venancio A. F. Alves, Fabiana R. Lima, Edson Abdala, Telesforo Bachella, Estela R. R. Figueira, Patricia R. Bonazzi, Daniela M. M. Gotardo, Marcel C. C. Machado. Sao Paulo, Brazil.

12 **LIVER TRANSPLANTATION FOR HCV CIRRHOSIS – RESULTS IN RECIPIENTS WITH TACROLIMUS BASED IMMUNOSUPPRESSION. (Abstract # 419)**
Marek Pacholczyk, Beata Lagiewska, Gajusz Gontarczyk, Leszek Adadynski, Agnieszka Perkowska-Ptasinska, Wojciech Lisik, Dariusz Wasiak, Tomasz Cieciura, Jakub Szalas, Andrzej Chmura. Warsaw, Poland.

13 **TREATMENT FOR RECURRENT HEPATITIS C INFECTION AFTER LIVER TRANSPLANTATION. (Abstract # 420)**
Cassia R. G. Leal, Maricarmen C. C. Pan, Zulane S. T. Veiga, Kelly C. G. Flausino, Joyce Roma, Ana Carolina Gonzalez, Ivan Zyngier, Lucio F. Pacheco-Moreira, Joao Luiz Pereira, Elizabeth Balbi. Rio de Janeiro, Brazil.

14 **OLT FOR LIVER NEOPLASMS OTHER THAN HCC: CASE REPORT. (Abstract # 421)**
L. Miglioresi, G. M. Ettorre, R. Santoro, G. Vennarecci, M. Antonini, G. Visco, S. Sentinelli, M. Milella, E. Santoro. Rome, Italy.

15 **ANATOMICAL CONSIDERATIONS OF PRE-TRANSPLANT DONOR-RECIPIENT EVALUATION IN LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 422)**
Jinsub Chli, Man Ki Ju, Gi Hong Choi, Myoung Soo Kim, Hyung Jun Ahn, Hye Kyung Chang, Hyung Jung Kim, Kyung Ock Jeon, Soon Il Kim. Seoul, Korea.

16 **CHANGES IN SPLANCHNIC HEMODYNAMICS AFTER ADULT LIVING DONOR LIVER TRANSPLANTATION. THE ROLE OF SPLENIC ARTERY LIGATION. (Abstract # 423)**
C. Fondevila, J. Ferrer, G. Martinez, A. Hessheimer, D. Calatayud, J. Marti, C. Ginesta, J. Fuster, R. Charco, P. Taura, J. C. Garcia Valdecasas. Barcelona, Spain.

17 **HEPATITIS-C RECURRENCE AND FIBROSIS PROGRESSION ARE NOT INCREASED AFTER SPLIT-LIVER TRANSPLANTATION; A SINGLE CENTER EXPERIENCE OF 289 PATIENTS. (Abstract # 424)**
Maximilian Schmeding, Ulf P. Neumann, Bahra Marcus, Neuhaus Ruth, Neuhaus Peter. Berlin, Germany.

18 **GW/RBW RATIO CORRELATES WITH TAC DOSE AND RENAL FUNCTION AFTER RIGHT LIVING RELATED LIVER TRANSPLANTATION. (Abstract # 425)**
Jens Wilberg, Bernadette Kuepper, Katharina Thrum, Erik Baerthel, Utz Settmacher, Arno Kornberg. Jena, Germany.

19 **LIVING DONOR LIVER TRANSPLANTATION UNDER ALEMTUZUMAB PRE-CONDITIONING AND TACROLIMUS MONOTHERAPY: TWO-YEAR OUTCOMES. (Abstract # 426)**
Henkie P. Tan, Kusum Tom, Ngoc Thai, Paolo Fontes, Michael DeVera, Vivek Sharma, Joseph Donaldson, Igor Dvorchik, Thomas E. Starzl, Amadeo Marcos. Pittsburgh, PA, USA.

20 **REVASCULARIZATION OF MIDDLE HEPATIC VEINS IN THE DONOR AFTER LIVING RELATED LIVER TRANSPLANTATION. (Abstract # 427)**
Andrea Schenk, Milo Hindennach, Holger Bourquain, Arnold Radtke, Tobias Schroeder, Massimo Malago, Christoph E. Broelsch, Heinz-Otto Peitgen. Bremen, Germany; Essen, Germany.

21 **TRAINING IN LIVING DONOR LIVER TRANSPLANTATION – THE LIVER SURGERY TRAINER. (Abstract # 428)**
Christoph Logge, Jeanette Cordes, Konrad Muehler, Bernhard Preim, Christian Hillert. Hamburg, Germany; Magdeburg, Germany.

22 **ACCURACY OF PREOPERATIVE ESTIMATION OF SURGICAL ANATOMY AND GRAFT VOLUME USING THREE-DIMENSIONAL IMAGING RECONSTRUCTION AND VOLUMETRY IN LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 429)**
Man Ki Ju, Myoung Soo Kim, Jinsub Choi, Gi Hong Choi, Hyung Jun Ahn, Hyun Jung Kim, Kyung Ock Jeon, Soon Il Kim. Seoul, Korea.

23 **PREOPERATIVE MAGNETIC RESONANCE CHOLANGIOPANCREATOGRAPHY (MRCP) IMAGING ALLOWS TO STRATIFY RISK OF BILIARY COMPLICATIONS IN RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION (LDLT). (Abstract # 430)**
Randeep Kashyap, Peter Abt, George Tsoulfas, Manoj Maloo, Peter Horton, Saman Safadjou, Maureen Graham, Ashokumar Jain, Mark Orloff, Adel Bozorgzadeh. Rochester, NY, USA.

24 **PREDICTIVE FACTORS OF EARLY ALLOGRAFT LOSS IN ADULT LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 431)**
Eduardo A. Fonseca, Eduardo Carone, Carla Matos, Rogerio Alves, Vincenzo Pugliese, Alcides A. Salzedas, Joao Seda Neto, Andre Godoy, Gilda Porta, Renata S. Pugliese, Irene K. Miura, Vera Baggio, Mario Kondo, Paulo Chapchap. Sao Paulo, Brazil.

25 **PREOPERATIVE MR CHOLANGIOGRAPHY OF POTENTIAL LIVING DONORS FOR LIVER TRANSPLANTATION. (Abstract # 432)**
Yong Jin Kwon, Kwang Soo Lee, Oh Jung Kwon. Seoul, Korea.

26 **OUTCOME OF 140 LIVING DONORS FOR LIVER TRANSPLANTATION: SINGLE-CENTER EXPERIENCE IN BRAZIL. (Abstract # 433)**
Sergio Mies, Thomson M. Palma, Vinicius M. R. Silva, Thiago Beduschi, Andrea Kondo, Ana Olga N. G. F. Mies, Ana Suely C. Zan, Bianca Della-Guardia, Carlos E. S. Baia, Eloiza H. Quintela, Leonardo R. Ferraz, Marcio D. de Almeida, Margareth P. Lallee, Osvaldo I. Pereira. Sao Paulo, SP, Brazil.

27 **USE OF CHOLEDOCHAL VARIX AS A PORTAL INFLOW IN DIFFUSE PORTAL VEIN THROMBOSIS DURING ADULT LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 434)**
Dong-Hwan Jung, Sung-Gyu Lee, Shin Hwang, Chul-Soo Ahn, Hyo-Jun Lee, Jeong-Ik Park, Je-Ho Ryu, Kwan-Woo Kim, Kyung-Hun Ko, Hi-Sung Kim. Seoul, Korea.

28 **LIVING DONOR LIVER TRANSPLANTATION USING EXTENDED RIGHT LOBE GRAFT. (Abstract # 435)**
Bum-Soo Kim, Sung-Gyu Lee, Shin Hwang, Kwang-Min Park, Ki-Hun Kim, Chul-Soo Ahn, Deok-Bog Moon, Tae-Yong Ha, Gi-Won Song, Ki-Myung Moon, Dong-Hwan Jung, Je-Ho Ryu, Hyo-Jun Lee, Jung-Ik Park. Seoul, Korea.

29 **FIRST DUAL LEFT LOBE LIVER TRANSPLANTATION IN TURKEY. (Abstract # 436)**
Burcin Taner, Murat Dayangac, Baris Akin, Deniz Balci, Zahide Kurt, Omer Ayanoglu, Cihan Duran, Refik Killi, Suleyman Uraz, Yildiray Yuzer, Yaman Tokat. Istanbul, Turkey.

30 **THE IMMUNOLOGICAL ROLE OF LIPID TRANSFER/METABOLIC PROTEINS IN LIVER TRANSPLANTATION TOLERANCE. (Abstract # 437)**
Yu-Fan Cheng, Toshiaki Nakano, Shigeru Goto, Chia-Yun Lai, Li-Wen Hsu, Seiji Kawamoto, Yu-Chun Lin, Ying-Hsien Kao, Kuei-Chen Chiang, Naoya Ohmori, Takeshi Goto, Shuji Sato, Bruno Jawan, Kazuhisa Ono, Chao-Long Chen. Kaohsiung, Taiwan; Oita, Japan; Higashi-Hiroshima, Japan; Chiba, Japan.

31 **EFFECTIVENESS OF THE USE OF RABBIT ANTI-THYMOGLOBULIN FOR THE TREATMENT OF ACUTE CELLULAR REJECTION IN LIVER TRANSPLANTATION. (Abstract # 438)**
Daniel G. Maluf, Robert A. Fisher, Luciana Mas, Valeria R. Mas, Adrian H. Cotterell, Marc P. Posner. Richmond, VA, USA; Cordoba, Argentina.

32 **SAFE USE OF SIROLIMUS IN PATIENTS AFTER LIVER TRANSPLANTATION (LTX) ACCORDING TO THE GERMAN CONSENSUS RECOMMENDATIONS FOR SIROLIMUS IN LIVER TRANSPLANTATION. (Abstract # 439)**
Dominik Faust, Bora Akoglu, Christina Zapletal, Markus Golling, Wolf O. Bechstein. Frankfurt am Main, Germany.

33 **THREE YEAR FOLLOW-UP OF LIVER TRANSPLANT PATIENTS AFTER CONVERSION TO SIROLIMUS. (Abstract # 440)**
Georg P. Gyoeri, Susanne Rasoul-Rockenschaub, Gabriela A. Berlakovich, Rudolf Steininger, Thomas Soliman, Ferdinand Muehlbacher, Herwig Pokorny. Vienna, Austria.

34 **CONVERSION OF CALCINEURIN INHIBITORS TO SIROLIMUS IN LIVER TRANSPLANT RECIPIENTS. (Abstract # 441)**
Sergio Mies, Thiago Beduschi, Vinicius M. R. Silva, Ana Olga N. G. F. Mies, Bianca Della Guardia, Carlos E. S. Baia, Marcio D. de Almeida. Sao Paulo, SP, Brazil.

35 **CLINICAL DIAGNOSIS OF BACTERIAL INFECTIONS FOLLOWING 106 CASES OF LIVER TRANSPLANTATION. (Abstract # 442)**
Wang Lin, Zhao Qingchuan, Tao Kaishan, Yang Yanling, An Jiaze, He Yong, Dou Kefeng. Xian, China.

36 **LIVER RETRANSPLANTATION FOR HEPATITIS C, DO EXTENDED CRITERIA DONORS AFFECT OUTCOME? (Abstract # 443)**
Timothy M. Schmitt, Timothy L. Pruett, David Kashmer, Carl L. Berg, Patrick G. Northup. Charlottesville, VA, USA.

37 **EXCELLENT LONG-TERM OUTCOME USING SEVERE STEATOTIC LIVER GRAFTS FOR TRANSPLANTATION. (Abstract # 444)**
Lucas McCormack, Henrik Petrowsky, Wolfgang Jochum, Beat Mullhaupt, Pierre Alain Clavien. Zurich, Switzerland.

38 **HEPATITIS B VIRUS DNA DETECTION IN ANTI-HBc POSITIVE DONORS GRAFTS. (Abstract # 445)**
Ben-Hur Ferraz-Neto, Fernando Pandullo, Roberta Sitnik, Rogerio C. Afonso, Marcelo B. Rezende, Sergio P. Meira-Filho, Luis E. P. Fonseca, Joao R. R. Pinho. São Paulo, Brazil.

39 **ASSESSMENT OF CADAVERIC LIVERS DISCARDED FROM TRANSPLANTATION. A CORRELATION BETWEEN CLINICAL AND HISTOLOGICAL PARAMETERS. (Abstract # 446)**
Jaroslaw Czerwinski, Agnieszka Perkowska, Andrzej Mroz, Beata Lagiewska, Leszek Adadynski, Magdalena Durlik, Maciej Glyda, Marek Pacholczyk, Paczek Leszek, Wojciech Polak, Zbigniew Sledzinski, Janusz Walaszewski, Dariusz Wasiak, Zbigniew Wlodarczyk, Wojciech Rowinski, Andrzej Chmura. Warsaw, Poland; Poznan Juraszow, Poland; Wroclaw, Poland; Gdansk Debinki, Poland; Bydgoszcz Sklodowskiej, Poland.

40 **MARKERS OF HEPATITIS TYPE B IN THE POPULATION OF DECEASED LIVER DONORS IN POLAND. (Abstract # 447)**
Jaroslaw Czerwinski, Piotr Malanowski, Dariusz Wasiak, Anna Grzybowska, Dominika Gutowska, Artur Kwiatkowski, Marek Pacholczyk, Andrzej Chmura, Janusz Walaszewski, Piotr Malkowski. Warsaw, Poland.

41 **LIVER TRANSPLANTATION FOR INCIDENTAL CHOLANGIOCARCINOMA: LARGE SINGLE CENTER EXPERIENCE. (Abstract # 448)**
George Tsoulfas, Randeep Kashyap, Peter Abt, Ashokumar Jain, Peter Horton, Manoj Maloo, Saman Safadjou, Maureen Graham, Mark Orloff, Adel Bozorgzadeh. Rochester, NY, USA.

42 **FIVE YEAR FOLLOW-UP AFTER LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA. (Abstract # 449)**
Andres Valdivieso, Jorge Ortiz De Urbina, Mikel Gastaca, Maria Jesus Hernandez, Jose Ramon Fernandez, Javier Bustamante, Milagros Testillano, Maria Jesus Suarez, Miguel Montejo. Bilbao-Baracaldo, Vizcaya, Spain.

43 **LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA: EXPERIENCE IN A SAUDI POPULATION. (Abstract # 450)**
Hatem Khalaf, Mohammed Al-Sagheir, Yasser Medhat, Hamad Al-Bahili, Yasser El-Sheikh, Ayman Abdo, Mohammed Al-Sofayan, Mohamed Al-Sebayel. Riyadh, Saudi Arabia.

44 **LIVER TRANSPLANTATION OUTCOME FOR HEPATOCELLULAR CARCINOMA LIMITED TO MILAN CRITERIA AND FOR EXTENDED CRITERIA. (Abstract # 451)**
Maria L. Zanotelli, Guilermo Kiss, Ana L. Gleisner, Mario H. Meine, Tomaz M. J. Grezzana, Ian Leipnitz, Eduardo S. Schlindwein, Claudio A. Marroni, Ajacio M. Brandão, Guido P. C. Cantisani. Porto Alegre, RS, Brazil.

45 **SYSTEMIC ADJUVANT CHEMOTHERAPY FOR STAGE III OR IV HEPATOCELLULAR CARCINOMA POST LIVER TRANSPLANTATION IMPROVES SURVIVAL. (Abstract # 452)**
Gary S. Xiao, Sheng Tai, Paulo Fontes, T. Clark Gamblin, David A. Geller, Wallis Marsh, Michael A. Nalesinik, Brian I. Carr, Michael E. De Vera. Pittsburgh, PA, USA; Harbin, Heilongjiang, China.

46 **HCC IN LIVING DONOR LIVER TRANSPLANTATION – DO WE NEED FURTHER MODIFICATIONS WITH THE MILAN CRITERIA? (Abstract # 453)**
Choon Hyuck David Kwon, Gyu-seong Choi, Jae Berm Park, Doo Jin Kim, Sung-Joo Kim, Jae-Won Joh, Suk-Koo Lee. Seoul, Korea.

47 **HEPATOCELLULAR CARCINOMA IN THE SETTING OF LIVER TRANSPLANTATION – AN INITIAL EXPERIENCE. (Abstract # 454)**
Jose T. Valenca Junior,Gleydson Cesar O. Borges, Ivelise Regina C. Brasil, Katia F. Vasconcelos, Douglas H. Campos Filho, Fernanda P. Cavalcante, Paulo Everton G. Costa, Joao Batista M. Vasconcelos, Jose Huygens P. Garcia. Fortaleza, Ceara, Brazil.

48 **EXTRAGASTROINTESTINAL STROMAL TUMOR AND LIVER TRANSPLANTATION – CASE REPORT. (Abstract # 455)**
Ilka F. S. F. Boin, Marilia I. Leonardi, Raquel Stucchi, Jazon R. Almeida, Luiz S. Leonardi. Campinas, São Paulo, Brazil.

49 **INTERPRETING "NO SIGNIFICANT DIFFERENCE" BETWEEN MILAN AND UCSF CRITERIA: A META-ANALYSIS OF LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA. (Abstract # 456)**
Thomas D. Johnston, Roberto Gedaly, Hoonbae Jeon, Dinesh Ranjan. Lexington, KY, USA.

50 **LIVER RETRANSPLANTATION (ReLT) OUTCOME IN A SINGLE INSTITUTION. A 18-YEAR EXPERIENCE. (Abstract # 457)**
Ramon Charco, Josep Marti, Calatayud David, Ferrer Joana, Antonio Rimola, Miquel Navasa, Constantino Fondevila, Jose Fuster, Juan Carlos Garcia-Valdecasas. Barcelona, Spain.

51 **THE POST-TRANSPLANT OUTCOME OF VERY ILL PATIENTS WITH HIGH MELD SCORES IN ADULT-TO-ADULT LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 458)**
Nam-Joon Yi, Kyung-Suk Suh, Hae Won Lee, Eung-Ho Cho, Woo Young Shin, Jai Young Cho, Jung-Hwan Yoon, Kuhn Uk Lee. Seoul, Korea.

52 **OUTCOME OF PATIENTS TRANSPLANTED FOR ALCOHOLIC LIVER DISEASE – ANALYSIS OF THE EUROPEAN LIVER TRANSPLANT REGISTRY (ELTR). (Abstract # 459)**
Patrizia Burra, Marco Senzolo, Rene' Adam, Vincent Karam, Giacomo Germani, James Neuberger, for ELITA. Padova, Italy; Paris, France; Birmingham, United Kingdom.

53 **NON-HEART BEATING DONOR LIVER TRANSPLANTATION: EXPERIENCE IN THE NETHERLANDS AFTER INTRODUCTION OF A RESTRICTIVE NATIONAL PROTOCOL. (Abstract # 460)**
Jeroen Dubbeld, Robert Porte, Bart Hoek v, Ahmet Demirkiran, Geert Kazemier, Herold Metselaar, Maarten Slooff, A. Berg vd, Jan Ringers. Leiden, Netherlands; Groningen, Netherlands; Rotterdam, Netherlands.

54 **ETIOLOGY, CLINICAL SEVERITY AND HEALTH-RELATED QUALITY-OF-LIFE (HRQOL) IN CIRRHOTIC PATIENTS IN WAITING LIST FOR LIVER TRANSPLANTATION. (Abstract # 461)**
Carla A. Taroncher, Ana Luiza M. Gleisner, Maria Lucia Zanotelli, Guido P. C. Cantisani, Ajácio B. M. Brandão, Marcelo P. A. Fleck, Claudio Augusto Marroni. Porto Alegre, Rio Grande do Sul, Brazil.

55 **OUTCOME COMPARISON OF LIVER TRANSPLANT PATIENTS WITH MODERATE/SEVERE PORTOPULMONARY HYPERTENSION VS. AVERAGE PATIENT POPULATION. (Abstract # 462)**
Lindsay S. Rogers, Kate B. Newman, Linda Jennings, Mohammad L. Ashfaq, Gary L. Davis, Goran B. Klintmalm, Michael A. E. Ramsay. Dallas, TX, USA.

56 **DIFFERENT SURVIVAL BENEFIT BETWEEN LIVER TRANSPLANTATION AND WAITING LIST IN RELATION TO DIFFERENT MELD CLASSES. AN INTENTION TO TREAT ANALYSIS. (Abstract # 463)**
Alfonso W. Avolio, Massimo Siciliano, Salvatore Agnes, Antonio Gasbarrini, Gianluigi Caracciolo, Raffaella Barbarino, Marco Castagneto. Rome, Italy.

57 **NON-ANASTOMOTIC BILIARY STRICTURES AFTER LIVER TRANSPLANTATION: NOVEL INSIGHTS IN PRESENTATION AND PATHOGENESIS. (Abstract # 464)**

Carlijn I. Buis, Robert C. Verdonk, Eric J. vd Jagt, Christian S. vd Hilst, Maarten J. H. Slooff, Elizabeth B. Haagsma, Robert J. Porte. Groningen, Netherlands;.

58 **INFLUENCE OF THE LENGTH OF THE ANHEPATIC PHASE ON OUTCOME AFTER PRIMARY LIVER TRANSPLANTATION. (Abstract # 465)**

A. J. C. IJtsma, C. S. van der Hilst, E. M. TenVergert, M. T. de Boer, K. P. de Jong, P. M. J. G. Peeters, R. J. Porte, M. J. H. Slooff. Groningen, Netherlands.

59 **PREVALENCE AND TREATMENT OF DECREASED BONE MINERAL DENSITY IN EARLY PERIOD AFTER LIVER TRANSPLANTATION: IS IT WORTH TO ADD BISPHOSPHONATES TO CALCIUM AND ACTIVE VITAMIN D SUPPLEMENTATION? (Abstract # 466)**

Ewa Nowacka-Cieciura, Anna Sadowska, Tomasz Cieciura, Olga Tronina, Teresa Baczkowska, Arkadiusz Urbanpwicz, Marek Pacholczyk, Beata Lagiewska, Andrzej Chmura, Witold Chudzinski, Magdalena Durlik. Warsaw, Poland.

60 **NON-ANASTOMOTIC BILIARY STRICTURES AFTER LIVER TRANSPLANTATION: MANAGEMENT, OUTCOME, AND RISK FACTORS FOR DISEASE PROGRESSION. (Abstract # 467)**

Robert C. Verdonk, Carlijn I. Buis, Eric J. van der Jagt, Annette S. H. Gouw, Abraham J. Limburg, Maarten J. H. Slooff, Jan H. Kleibeuker, Robert J. Porte, Elizabeth B. Haagsma. Groningen, Netherlands; Groningen.

61 **OUTCOMES OF LIVER TRANSPLANTATION (OLT) IN THE MORBIDLY OBESE. (Abstract # 468)**

C. Quintini, F. Aucejo, K. Hashimoto, K. Hirose, T. Diago Uso, S. Nakagawa, N. Sopko, J. Rosenblum, B. Eghtesad, D. Kelly, C. Winans, D. Vogt, J. Fung, C. Miller. Cleveland, OH, USA.

62 **HEMODYNAMIC CHANGES DURING ORTHOTOPIC LIVER TRANSPLANTATION MEASURED BY LIDCO MONITOR. (Abstract # 469)**

Zorica B. Jankovic, Bruce Duncan, Charles Taylor. Leeds, West Yorkshire, United Kingdom.

63 **ASSOCIATION OF CENTER VOLUME WITH OUTCOME AFTER LIVER TRANSPLANTATION IN SÃO PAULO STATE. (Abstract # 470)**

Francisco Monteiro, Luiz A. Pereira, Rogerio C. Afonso, Ben-Hur Ferraz-Neto. Sao Paulo, Brazil.

64 **COST-EFFECTIVENESS IN LIVER TRANSPLANTATION – A SYSTEMATIC REVIEW. (Abstract # 471)**

Christian S. van der Hilst, Alexander J. C. IJtsma, Danielle M. Nijkamp, Jan T. Bottema, Maarten J. H. Slooff, Elisabeth M. TenVergert. Groningen, Netherlands.

65 **CORRELATION BETWEEN MEASURE GLOMERULAR FILTRATION RATE AND ESTIMATE GLOMERULAR FILTRATION RATE BEFORE AND AFTER ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 472)**

Alfeu M. Fleck, Jr., Claudio A. Marroni, Ajacio B. M. Brandao, Guido P. C Cantisani, Maria Lucia L. Zanotelli, Osvaldo E. Anselmi, Clarice Luz. Porto Alegre, Rio Grande do Sul, Brazil.

66 **AUDIT AND PREDICTIVE FACTORS FOR ALCOHOL CONSUMPTION POST LIVER TRANSPLANTATION – MUST TRY HARDER? (Abstract # 473)**

Vibhakorn Shusang, Laura Marelli, Pinelope Manousou, Liz Shepherd, David Patch, Andrew K. Burroughs. London, United Kingdom.

67 **THE RISK ASSOCIATED WITH PLATELET TRANSFUSION IN LIVER TRANSPLANTATION. (Abstract # 474)**

Marieke T. de Boer, Christian S. van der Hilst, Ilona T. Pereboom, Ans A. Hagenaars, Herman G. D. Hendriks, Maarten J. Slooff, Robert J. Porte. Groningen, Netherlands; Groningen.

68 **VARIABLES RELATED TO SURVIVAL AFTER LIVER RETRANSPLANTATIONS IN ADULTS. (Abstract # 475)**

Umberto Maggi, Paolo Reggiani, Ernesto Melada, Paolo Bertoli, Giorgio Rossi. Milano, Italy.

69 **PROFILE OF ORTHOTOPIC LIVER TRANSPLANT (OLT) PATIENTS WITH CRYPTOGENIC CIRRHOSIS. (Abstract # 476)**

Claudio A. Marroni, Alex Schwengber, Christina G. S. Fraga, Camila Benfica, Ajacio B. M. Brandao, Alfeu Fleck, Jr., Maria L. Zanotelli, Guido Cantisani. Porto Alegre, Rio Grande do Sul, Brazil.

70 **PROSPECTIVE ANALYSIS OF QUALITY INDICATORS ON A PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION CENTER. (Abstract # 477)**

Renata Pugliese, Vincenzo Pugliese, Gilda Porta, Irene K. Miura, Vera Baggio, Eduardo Carone, Joao Seda Neto, Alcides A. Salzedas, Eduardo Antunes, Teresa Guimaraes, Andre Godoy, Paulo Chapchap. Sao Paulo, Brazil.

71 **ASSOCIATION BETWEEN PORTOPULMONARY HYPERTENSION AND HEPATOPULMONARY SYNDROME IN CIRRHOTICS, CANDIDATES TO HEPATIC TRANSPLANTATION. (Abstract # 478)**

Eduardo Garcia, Alessandra I. Zille, Jose S. Moreira, Ajacio B. M. Brandao, Claudio A. Marroni, Maria L. Zanotelli, Guido Cantisani. Porto Alegre, Rio Grande do Sul, Brazil.

72 **LIVER TRANSPLANTATION IN ADULTS PATIENTS IN THE ARGENTINEAN PUBLIC HEALTH ORGANIZATION. TEN YEARS OF EXPERIENCE AT THE ARGERICH HOSPITAL. (Abstract # 479)**
Pedro L. Trigo, Gabriel Aballay, Pablo Barros Scheloto, Gustavo A. Braslavsky, Nora G. Cejas, Fernando Duek, Graciela Cueto, Diana Rodriguez, Carlos Quarin, Cristina Romero, Gabriel Raffin, Alejandra Oks, Javier Lendoire, Oscar Imventarza. Ciudad Autonoma de Buenos Aires, Buenos Aires, Argentina.

73 **BEYOND THE FIRST 100 LIVER TRANSPLANTS: EXPERIENCE AND OUTCOME. (Abstract # 480)**
Mohammed Al-Sebayel, Hatem Khalaf, Mohammed Al-Sofayan, Mohammed Al-Sagheir, Ayman Abdo, Yasser El-Sheikh, Yasser Medhat, Hamad Al-Bahili, Ahmed Al-Jedai. Riyadh, Saudi Arabia.

74 **RESULTS IN 100 CONSECUTIVE LIVER TRANSPLANTS IN A MEXICAN PROGRAM. (Abstract # 481)**
Marco A. Covarrubias-Velasco, Luis C. Rodriguez-Sancho, Eduardo Solano-Peralta, Hector E. Montes-Munoz, Salvador Castillo-Baron, Marisela Correa-Valdez. Guadalajara, Jalisco, Mexico.

75 **RESULTS OF A LIVER TRANSPLANT UNIT AFTER 4 YEARS OF ACTIVITY. LEARNING CURVE EFFECT. (Abstract # 482)**
Jesus M. Villar, Karim M. Granero, Maria T. Villegas, Maria J. Alvarez, Ana Garcia, Flor Nogueras, Maria D. Espinosa, Alfonso Mansilla, Daniel Garrote, Jose A. Ferron. Granada, Spain.

76 **A MODEL TO DEMONSTRATE THE ECONOMIC BENEFITS OF GASTROENTEROLOGY FELLOWSHIP PROGRAMS. (Abstract # 483)**
Tracy Giacoma, Reem Ghalib, Cheryl Levine, Alejandro Meija, Roozbeh Rassadi. Dallas, TX, USA.

77 **LIVING DONOR LIVER TRANSPLANTATION FOR WILSON DISEASE: 50 CASES DURING 8 YEARS. (Abstract # 484)**
Serguei V. Gautier, Olga M. Tsiroulnikova, Andrey V. Filin, Edward F. Kim, Alexey V. Semenkov, Olga I. Malomooge. Moscow, Russian Federation.

78 **OUTCOMES OF LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA IN CIRRHOTIC PATIENTS DEPENDS ON ALPHA FOETOPROTEIN EVOLUTION DURING WAITING LIST. (Abstract # 485)**
Eric Vibert, Salvatore Marco Iacopinelli, Vincent Karam, Chady Salloum, Daniel Azoulay, Denis Castaing, Didier Samuel, Rene Adam. Villejuif, France.

79 **IS LIVER TRANSPLANTATION SUITABLE FOR OLD PATIENTS? (Abstract # 486)**
Andres Valdivieso, Jorge Ortiz De Urbina, Mikel Gastaca, Miguel Montejo, Maria Jesus Hernandez, Javier Bustamante, Jose Ramon Fernandez, Milagros Testillano, Maria Jesus Suarez. Bilbao, Vizcaya, Spain.

80 **RESULTS OF URGENT LIVER RETRANSPLANTATION IN THE STATE OF SÃO PAULO, BRAZIL. (Abstract # 487)**
Ben-Hur Ferraz-Neto, Rogerio C. Afonso, Francisco Monteiro, Maria P. V. C. Zurstrassen, Renato Hidalgo, Marcelo B. Rezende, Sergio P. Meira-Filho, Fernando Pandullo, Luiz E. P. Fonseca, Luiz A. Pereira. Sao Paulo, Brazil.

81 **ROLE OF THE MELD SCORE IN PATIENTS WITH VIRAL HEPATITIS AWAITING LIVER TRANSPLANTATION. (Abstract # 488)**
Oreste Cuomo, Alessandro Perrella, Giuseppe Arenga, Aristide Ferrara, Donatella Pisaniello, Lorenzo Iovine. Naples, Italy.

82 **COMBINED CARDIOHEPATIC TRANSPLANTATION FOR HOMOZYGOUS FAMILIAL HYPERCHOLESTEROLEMIA. FIRST CASE IN ARGENTINA. (Abstract # 489)**
Pedro L. Trigo, Gabriel Aballay, Nora A. Cejas, Gabriel Raffin, Gustavo G. Braslavsky, Fernando Duek, Graciela Cueto, Pablo Barros, Diana Rodriguez, Carlos Quarin, Veronica Garay, Alejandra Oks, Javier Lendoire, Oscar Imventarza. Ciudad Autonoma de Buenos Aires, Buenos Aires, Argentina.

83 **DEVELOPMENT OF SECONDARY SEXUAL CHARACTERISTICS DURING ADOLESCENCE AFTER PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 490)**
Allan M. Concejero, Chao-Long Chen, Chih-Cheng Chen, Chih-Chi Wang, Shih-Ho Wang, Yueh-Wei Liu, Chin-Hsiang Yang, Chee-Chien Yong. Kaohsiung, Taiwan.

84 **Abstract Withdrawn. (Abstract # 491)**

85 **ANALYSIS OF THE RISK FACTORS FOR EARLY POSTTRANSPLANT MORTALITY IN PEDIATRIC LIVER TRANSPLANTATION. (Abstract # 492)**
Izabel M. Coelho-Lemos, Julio C. Wiederkehr, Sabryna L. Werneck, Sandra L. Schuler, Luiz R. Farion, Daniela D. Ouno, Sylvio A. Avilla, Claudio Schulz, Vitor B. Nascimento. Curitiba, PR, Brazil.

86 **PEDIATRIC LIVER TRANSPLANTATION IN A COMBINED PEDIATRIC AND ADULT TRANSPLANT PROGRAM: THE RESULTS OF A SINGLE CENTER. (Abstract # 493)**
Rodrigo Amil, Marcelo Enne, Glauber Gouvea, Alexandre Cerqueira, Jose Martinho, Jefferson Alves, Elisabeth Balbi, Rodrigo Diaz, Lucio Auler, Giusepe Santalucia, Lucio Pacheco. Rio de Janeiro, Brazil.

87 **SUCCESSFUL AMPLATZER DEVICE DEPLOYMENT FOR CLOSURE OF AN ENLARGING ATRIAL SEPTAL DEFECT AFTER LIVING DONOR LIVER TRANSPLANTATION. (Abstract # 494)**
Amornetta Jordan, Allan M. Concejero, Chao-Long Chen, Chi-Di Liang, Chih-Chi Wang, Shih-Ho Wang, Yueh-Wei Liu, Chin-Hsiang Yang, Chee-Chien Yong, Bruno Jawan, Yu-Fan Cheng. Kaohsiung, Taiwan.

88 **Abstract Withdrawn. (Abstract # 495)**

89 **TEN YEARS OF LIVING DONOR LIVER TRANSPLANTATION IN ONE CENTER: SURGICAL CONSIDERATONS. (Abstract # 496)**
Serguei V. Gautier, Andrey V. Filin, Edward F. Kim, Olga M. Tsiroulnikova, Alexey V. Semenkov, Eugeny A. Smirnov, Alexander A. Ammosov, Eugenia J. Krizhanovskaja, Juli R. Kamalov, Valery V. Hovrin. Moscow, Russian Federation.

90 **OUTFLOW RECONSTRUCTION IN DOMINO LIVER TRANSPLANTATION WITH INTERPOSITION OF AUTOLOGOUS PORTAL VEIN GRAFT. A NEW TECHNICAL OPTION IN LIVING DONOR DOMINO LIVER TRANSPLANTATION SCENARIO. (Abstract # 497)**
Alexandre Cerqueira, Marcelo Enne, Lucio Pacheco, Elizabeth Balbi, José Manoel Martinho, Rodrigo Amil. Rio de Janeiro, Brazil.

91 **SIMULTANEOUS ARTERIAL AND BILIARY REPAIR AFTER LIVER TRANSPLANTATION. (Abstract # 498)**
Daniele Sommacale, Fédérica Dondéro, Wellington Andraus, Claire Francoz, Alain Sauvanet, Valérie Vilgrain, Annie Sibert, Guido Liddo, François Durand, Jacques Belghiti. Clichy, France.

92 **SURGICAL TREATMENT OF BILIARY COMPLICATIONS AFTER PEDIATRIC LIVER TRANSPLANTATION. (Abstract # 499)**
Gregorio Maldini, Mara Giovanelli, Alessandro Lucianetti, Vittorio Corno, Michela Guizzetti, Domenico Pinelli, Marco Zambelli, Roberto Manfredi, Mariaclara Dezza, Giuliano Torre, Michele Colledan. Bergamo, Italy.

93 **STRATEGIES TO REDUCE BILIARY FISTULA AFTER DONOR HEPATECTOMY IN A LIVING DONOR LIVER TRANSPLANTATION PROGRAM. (Abstract # 500)**
Vincenzo Pugliese, Eduardo Carone, Renata S. Pugliese, Eduardo A. Fonseca, Joao Seda Neto, Alcides A. Salzedas, Andre Godoy, Gilda Porta, Irene K. Miura, Vera Baggio, Tereza Guimaraes, Rogerio C. Pinheiro, Carla A. Matos, Mario Kondo, Paulo Chapchap. Sao Paulo, Brazil.

94 **HMGB1 AS A NEW MARKER OF ISCHEMIA-REPERFUSION INJURY IN HUMAN LIVER TRANSPLANTATION. (Abstract # 501)**
Eija Tukiainen, Minna Ilmakunnas, Ari Rouhiainen, Heikki Rauvala, Arno Nordin, Heikki Mäkisalo, Krister Höckerstedt, Helena Isoniemi. Helsinki, Finland.

95 **VENOUS RENAL ISCHEMIA REPERFUSION INJURY IS MORE SEVERE THAN ARTERIAL ISCHEMIA REPERFUSION INJURY IN A RAT MODEL. (Abstract # 502)**
Ryutaro Hirose, YeonHo Park, Kim Dang, Matthias Behrends, John P. Roberts, Claus U. Niemann. San Francisco, CA, USA; Incheon, Korea.

96 **FIRST-LINE LIVER RESECTION AND SALVAGE LIVER TRANSPLANTATION IS AN INCREASING THERAPEUTIC STRATEGY FOR PATIENTS WITH HCC AND CHILD A CIRRHOSIS. (Abstract # 503)**
Giovanni Vennarecci, Giuseppe Ettorre, Roberto Santoro, Mario Antonini, Michela Maritti, Gianfranco Tacconi, Domenico Spoletini, Letizia Perracchio, Giuseppe Visco, Claudio Puoti, Eugenio Santoro. Rome, Italy; Marino, Italy.

97 **TRANSTHORACIC OPEN WINDOW HEPATOSTOMY FOR THE TREATMENT OF LARGE RIGHT BILIARY ABSCESSES AFTER LIVER TRANSPLANTATION. (Abstract # 504)**
Renato Romagnoli, Patrono Damiano, Mirabella Stefano, Strignano Paolo, Moro Francesco, Rizza Giorgia, Salizzoni Mauro. Turin, Italy.

98 **MORPHOMETRIC STUDY COMPARING TWO METHODS OF HEPATIC VENOUS OUTFLOW RECONSTRUCTION IN PIGGYBACK LIVER TRANSPLANTATION. (Abstract # 505)**
Fabricio F. Coelho, Paulo C. B. Massarollo, Gina C. R. Silvestre, Henrique D. M. Giroud, Fabio P. Gallucci, Fernando Matheus, Rodrigo J. Oliveira, Consuelo J. Rodrigues, Aldo J. Rodrigues, Jr.. São Paulo, Brazil.

99 **PIGGYBACK TECHINIQUE WITH AND WITHOUT CROSS-CLAMPING OF THE INFERIOR VENA CAVA (IVC) FOR ORTHOTOPIC LIVER TRANSPLANT (OLT) – A COMPARATIVE STUDY. (Abstract # 506)**
Marcelo Sette, Edmundo Lopes, Alvaro Ferraz, Mauricio Barros, Telesforo Bacchela, Hoel Sette, Jr., Marcel Machado, Marcelo Maia, Edmundo Ferraz. Recife, Pernambuco, Brazil; Recife, Brazil; Sao Paulo, Brazil.

100 **LEARNING FROM THE DEAD FOR THE LIVING – AN INTRODUCTION OF PILOT COURSE IN SPLIT LIVER TECHNIQUES. (Abstract # 507)**
Suresh K. Singhvi, Tom Karbe, Micheal Kammal, Klaus Puschel, Dieter C. Broering. Newcastle Upon Tyne, United Kingdom; Hamburg, Germany; Kiel, Germany.

101 **EXPERIMENT ON THE EFFECTS OF SELECTIVE DIGESTIVE DECONTAMINATION AND GLUTAMINE TO PREVENT INTESTINAL BACTERIAL TRANSLOCATION IN THE MODEL OF RABBIT PIGGYBACK LIVER TRANSPLANTATION. (Abstract # 508)**
Li Li, Zhu Li, Ming X. Wen, Hua J. Ran, Gang Chen. Kunming, Yunnan, China.

102 **LIVER TRANSPLANTATION FOR PATIENTS WITH TIPS: ANALYSIS OF TECHNICAL DIFFICULTIES. (Abstract # 509)**
Renato F. da Silva, Paulo C. Arroyo, Jr., William J. Duca, Fabio B. Francischi, Erica Figikaha, Fabio F. Quagliato, Maria L. P. Pinheiro, Adinaldo A. M. da Silva, Luis F. Reis, Daniel G. Micheline, Rita C. M. A. da Silva. Sao Jose do Rio Preto, Sao Paulo, Brazil.

103 **LIVER TRANSPLANTATION WITH CAVO-PORTAL HEMI-TRANSPOSITION: REPORT OF A CASE WITH VENOUS PRESSURE MEASUREMENTS. (Abstract # 510)**
Renato Romagnoli, Alessandro Franchello, Gianluca Paraluppi, Paolo Strignano, Andrea Doriguzzi Breatta, Mauro Salizzoni. Torino, Italy.

104 **ENDOVASCULAR MANAGEMENT OF EARLY PORTAL VEIN THROMBOSIS CAUSED BY CORONARY VEIN STEAL AFTER LIVER TRANSPLANTATION. (Abstract # 511)**
Hee Chul Yu, Bon Yong Koo, Hyo Sung Kwak, Young Min Han, Baik Hwan Cho. Jeonju, Jeonbuk, Korea.

105 **PORTAL VEIN STENOSIS AFTER LIVER TRANSPLANTION: A SINGLE-CENTER EXPERIENCE. (Abstract # 512)**
Agnaldo S. Lima, Alexandre P. Resende, André L. R. Seabra. Belo Horizonte, Minas Gerais, Brazil.

106 **SUCCESSFUL SURGICAL CORRECTION OF COMPLETE PORTAL VEIN OCCLUSION BY THROMBOSIS AND CONCOMITANTLY DEVELOPED A-P SHUNT WITHOUT HEPATOCELLULAR DYSFUNCTION COMPLICATING ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 513)**
Koo-Jeong Kang, Yong-Hoo Kim, Hyung-Tae Kim, Won-Hyun Cho, Kyang-Bum Cho, Jae-Suk Hwang, Jung-Hyuk Kwon. Daegu, Korea.

107 **HEPATIC ARTERY THROMBOSIS TREATED BY THROMBOLYSIS AFTER LIVER RETRANSPLANT. (Abstract # 514)**
Sergio P. Meira-Filho, Rogerio C. Afonso, Jose M. A. Moraes-Junior, Fernando Pandullo, Luis E. P. Fonseca, Marcelo B. Rezende, Felipe Nasser, Francisco C. Carnevale, Ben-Hur Ferraz-Neto. Sao Paulo, Brazil.

108 **TRANSJUGULAR INTRAHEPATIC PORTOSYSTEMIC SHUNTS: PICTORIAL REVIEW AND PRELIMINARY EXPERIENCE USING ECHO ENHANCED CONTRAST AGENT PESDA. (Abstract # 515)**
Rodrigo C. Surjan, Andre C. Oliveira, Ailton Sepulveda, Jr., Antonio S. Marcelino, Maria C. Chammas, Giovanni G. Cerri, Telesforo Bacchella, Marcel C. Machado. São Paulo, Brazil.

109 **EVOLVING EXPERIENCE WITH PREVENTION AND TREATMENT OF ARTERIAL STEAL SYNDROMES AFTER ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 516)**
Martina T. Mogl, Christoph Heidenhain, Nada Rayes, Natascha C. Nuessler. Berlin, Germany.

110 **EFFICACY AND SAFETY OF PEGYLATED INTERFERON PLUS RIBAVIRIN IN PATIENTS WITH HEPATITIS C RECURRENCE AFTER LIVER TRANSPLANTATION: A SINGLE CENTRE EXPERIENCE. (Abstract # 517)**
Francesca Agnelli, Mauro Viganò, Cristina Rigamonti, Giorgio Rossi, Massimo Colombo, Maria F. Donato. Milan, Italy; Italy.

111 **TREATMENT OF HEPATITIS C RECURRENCE AFTER LIVER TRANSPLANTATION: RESULTS FROM A MULTICENTER RETROSPECTIVE STUDY IN BRAZIL. (Abstract # 518)**
Rita C. M. A. da Silva, Renato F. da Silva, Mario G. Pessoa, Hoel Sette, Jr., Claudia A. Couto, Eduardo G. Vilela, Claudio A. Marroni, A. M. Fleck, Jr., L. Codes, Paulo L. Bittencourt. Sao Jose do Rio Preto, Sao Paulo, Brazil; Sao Paulo, Brazil; Belo Horizonte, MG, Brazil; Porto Alegre, Brazil; Salvador, BA, Brazil.

112 **INFECTIONS IN LIVER TRANSPLANT RECIPIENTS UNDERGOING IN-HOSPITAL RETRANSPLANTATION AND/OR WITH PRETRANSPLANT HOSPITALIZATION. (Abstract # 519)**
R. Corey, S. Schmitt, B. Eghtesad, C. Miller, S. Gordon, C. Fatica, T. Fraser, S. Mawhorter, S. Mossad, C. Winans, D. Vogt, F. Aucejo, L. Johnson, J. Fung, R. Avery. Cleveland, USA.

113 **NON-VIRAL INFECTION TRANSMISSION FROM DONOR TO RECIPIENT OF A LIVER TRANSPLANTATION. (Abstract # 520)**
Oscar Len, Joan Gavalda, Yolanda Puigfel, Itxarone Bilbao, Luis Castells, Lluis Llopart, Jose L. Lazaro, Alfredo Escartin, Teresa Pont, Nuria Masnou, Joaquim Balcells, Albert Pahissa. Barcelona, Spain.

114 **INCIDENCE OF MULTIDRUG RESISTANT ORGANISMS INFECTION THE FIRST 30 DAYS AFTER LIVER TRANSPLANTATION. (Abstract # 521)**
Oscar Len, Joan Gavalda, Yolanda Puigfel, Itxarone Bilbao, Luis Castells, Lluis Llopart, Alfredo Escartin, Jose L. Lazaro, Joaquim Balcells, Albert Pahissa. Barcelona, Spain.

115 **RISK FACTORS FOR METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS INFECTION IN LIVER TRANSPLANTATION. (Abstract # 522)**
Maristela P. Freire, Patricia R. Bonazzi, Estela R. R. Figueira, Rinaldo S. Fochaccia, Telesforo Bacchella, Marcel C. C. Machado, Edson Abdala. São Paulo, Brazil.

116 **HISTOLOGIC BENEFIT OF LONG TERM RIBAVIRIN MONOTHERAPY IN PATIENTS WITH HCV RECURRENCE AFTER LIVER TRANSPLANTATION. (Abstract # 523)**
Thierry Bizollon, Pierre Pradat, Christian Ducerf, Christian Trepo. Lyon, France.

117 **OCCURRENCE OF OCCULT HEPATITIS B VIRUS INFECTION IN HEPATITIS C CIRRHOTIC LIVER EXPLANTS WITH OR WITHOUT HEPATOCELLULAR CARCINOMA. (Abstract # 524)**
Regiane S. S. M. Alencar, João Renato R. Pinho, Flair J. Carrilho, Ivete M. V. G. C. Mello, Evandro S. Mello, Venancio A. F. Alves, F. M. Malta, Michelle M. S. Gomes, R. Sitnik. São Paulo, Brazil.

118 **CLINICAL OUTCOME AFTER LIVING DONOR LIVER TRANSPLANTATION IN PATIENTS WITH HEPATITIS C VIRUS RELATED CIRRHOSIS. (Abstract # 525)**
Jeong-Ik Park, Sung-Gyu Lee, Shin Hwang, Kwang-Min Park, Ki-Hun Kim, Chul-Soo Ahn, Deok-Bog Moon, Tae-Yong Ha, Dong-Hwan Jung, Bum-Soo Kim, Kwan-Woo Kim, Hi-Sung Kim, Kyung-Hun Ko. Seoul, Republic of Korea.

119 **ORTHOTOPIC LIVER TRANSPLANTATION IN PATIENTS WITH HBV. (Abstract # 526)**
Claudio A. Marroni, Alex Schwengber, Christina G. S. Fraga, Camila Z. Benfica, Douglas Simonetto, Alfeu F. Junior, Guilhermo Kiss, Thomaz G. Filho, Mario H. Meine, Ian Leipnitz, Eduardo Schlindwein, Maria L. Zanotelli, Ajacio B. M. Brandao, Guido Cantisani. Porto Alegre, Rio Grande do Sul, Brazil.

120 **CHRONIC HEPATITIS C RECURRENCE AFTER LIVER TRANSPLANTATION. (Abstract # 527)**
Sílvia V. Campos, Patrícia R. Bonazzi, Edson Abdala, Daniela R. M. Gotardo, Leonardo S. Silva, Rodrigo S. Honorio, Evandro S. Mello, Estela R. R. Figueira, Venancio A. F. Alves, Telésforo Bacchella, Marcel C. C. Machado. São Paulo, SP, Brazil.

121 **SPECIFIC ANTI-HCV IMMUNE RESPONSES AFTER LIVER TRANSPLANTATION IN HIV/HCV CO-INFECTED PATIENTS. (Abstract # 528)**
A. Samri, A. M. Roque-Afonso, O. Beran, C. Feray, E. Dussaix, D. Samuel, B. Autran, J. C. Duclos-Vallee. Paris, France; Villejuif, France.

122 **PERITONEAL IMPLANTATION OF CRYOPRESERVED ENCAPSULATED PORCINE HEPATOCYTES IN RATS WITHOUT IMMUNOSUPPRESSION: VIABILITY AND FUNCTION. (Abstract # 529)**
Raffaele Cursio, Edoardo Baldini, Georges De Sousa, Andrea Margara, Jiri Honiger, Marie-Christine Saint-Paul, Pascale Bayer, Vincent Raimondi, Roger Rahmani, Jean Mouiel, Jean Gugenheim. Nice, France; Antibes, France; Paris, France.

123 **TRIMETAZIDINE PROTECTS EFFECTIVELY STEATOTIC LIVERS PRESERVED IN IGL-1 SOLUTION. (Abstract # 530)**
Amine Zaouali, Ismail B Mosbah, Isabel Fernandez Monteiro, Hassen Ben Abdennebi, Olivier Boillot, Silvina Ramella, Joan Rosello Catafau, Carmen Peralta. Barcelona, Spain; Lyon, France; Saint Didier au Mont d'Or, France.

124 **MICRODIALYSIS AS A TOOL FOR MEASURING ISCHEMIA-REPERFUSION INJURY IN AN ISOLATED REPERFUSION MODEL OF PIG LIVER – IS IT WORTH WHILE? (Abstract # 531)**
Frank Ulrich, Peter Fellmer, Michael Meißler, Volker Unger, Sandra Höfer, Andrea Preuss, Juliane Unger, Birgit Rudolph, Christian Grosse-Siestrup, Peter Neuhaus, Johann Pratschke. Berlin, Germany.

125 **LIVER HYPERACUTE REJECTION IN DOG-TO-PIG AND PIG-TO-DOG MODEL OF MULTIVISCERAL XENOTRANSPLANTATION. (Abstract # 532)**
Flavio H. F. Galvao, Eduardo Pompeu, Eduardo K. Mory, Rafael M. Santos, Telesforo Bacchella, Marcel C. Machado. Sao Paulo, Brazil.

126 **EVALUATION OF PHYSICAL PERFORMANCE IN HEPATIC TRANSPLANTATION PRE-PHASE PATIENTS. (Abstract # 533)**
Luciana Elena S. F. Machado, Alexandre M. S. Carvalho, Sara Lucia S. Menezes. Rio de Janeiro, RJ, Brazil; Brazil; Rio de Janeiro, Brazil.

127 **GENE EXPRESSION PROFILING IN LIVER TRANSPLANT RECIPIENTS. (Abstract # 534)**
Laila Hassan, Pablo Bueno, Carmen Olmedo, Ana-Maria Comino, Carlos Cano, Ignacio Ferron-Celma, Karim Muffak, Mario Serradilla, Ana Garcia-Navarro, Alfonso Mansilla, Jesus Villar, Daniel Garrote, Armando Blanco, Jose-Antonio Ferron. Granada, Spain.

128 **ANALYSIS OF HEMODYNAMICS ALTERATIONS DURING ORTHOTOPIC LIVER TRANSPLANTATION IN PIGS. (Abstract # 535)**
Orlando J. M. Torres, Erica S. Barbosa, Patricia B. Pantoja, Cristiany A. Barros, Noelia C. Barros, Elizabeth T. Servin. Sao Luiz, Maranhao, Brazil.

129 **SAFETY OF AN INTRACRANIAL PRESSURE MONITOR IN PATIENTS WITH ACUTE LIVER FAILURE AND GRADE III/IV ENCEPHALOPATHY. (Abstract # 536)**
Robert Raschke, Geetha Kolli, Silke Rempe, Mark Wong, Steve Curry, Richard Manch. Phoenix, USA.

130 **ARTERIAL AMMONIA LEVEL DOES NOT CORRELATE WITH INTRACRANIAL HYPERTENSION IN PATIENTS WITH ACUTE LIVE FAILURE AND GRADE III/IV HEPATIC ENCEPHALOPATHY. (Abstract # 537)**
Robert Raschke, Geetha Kolli, Silke Rempe, Ester Little, Adam Randolph, Richard Gerkin, Mark Wong, Ann Moore, Richard Manch. Phoenix, USA.

131 **OUTCOME OF ACUTE LIVER FAILURE WITH AND WITHOUT LIVER TRANSPLANTATION – AN INITIAL EXPERIENCE. (Abstract # 538)**
Cyntia F. G. Viana, Tarciso Daniel S. Rocha, Fernanda P. Cavalcante, Jose T. Valenca Junior, Dirk Schreen, Douglas H. Campos Filho, Jose Huygens P. Garcia. Fortaleza, Ceara, Brazil.

132 **RECOMBINANT FACTOR VIIa DURING LIVER TRANSPLANTATION FOR FULMINANT HEPATIC FAILURE? WHEN? (Abstract # 539)**
J. Hudcova, R. Schumann. Boston, MA, USA.

133 **RESULTS OF CADAVERIC LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA. (Abstract # 540)**
Marilia I. Leonardi, Ilka F. Boin, Cecilia Escanhoela, Luiz S. Leonardi. Campinas, SP, Brazil.

Late Breaking Poster Abstracts
5:30 PM – 6:30 PM

Room: Leme, 5th Floor

134 **PERIOPERATIVE COAGULATION MANAGEMENT IN A PATIENT WITH AFIBRINOGENEMIA UNDERGOING LIVER TRANSPLANTATION. (Abstract # 541)**
Ralph J Fuchs, Jay Levin, Meghan Tadel, William Merritt. Baltimore, MD, USA.

135 **EVOLUTION AND PROGNOSIS OF ORTHOTOPIC LIVER TRANSPLANTATION IN PATIENTS WITH HEPATORENAL SYNDROME TREATED WITH VASOPRESSIN ANALOGS. (Abstract # 542)**
Ana M. Lopez-Lago, Juan R. Fdez-Villanueva, Jose M Garcia-Acuna, Enrique Ferrer Vizoso, Esther Molina, Evaristo Varo Perez. Santiago de Compostela, A Coruna, Spain.

136 **SIROLIMUS: A SIMPLE, RAPID AND HIGHLY SENSITIVE HPLC/ ELECTROCHEMICAL DETECTION (ECD) ASSAY SUITABLE FOR ROUTINE THERAPEUTIC MONITORING OF LIVER TRANSPLANT RECIPIENTS. (Abstract # 543)**
Satoshi Kishino, Etsuko Suka, Nobuo Mochizuki, Keiko Ohno, Tsuyoshi Shimamura, Hiroyuki Furukawa, Satoru Todo. Kiyose, Tokyo, Japan; Sapporo, Hokkaido, Japan.

137 **CALCINEURIN INHIBITORS AND HCV RECURRENCE WITHIN SIX MONTHS AFTER LIVER TRANSPLANTATION. (Abstract # 544)**
Alessandro Perrella, Giuseppe Arenga, Oreste Cuomo. Naples, Italy.

138 **LATE MORTALITY FOLLOWING ORTHOTOPIC LIVER TRANSPLANTATION: A SINGLE CENTRE EXPERIENCE. (Abstract # 545)**
Norma C McAvoy, Peter C Hayes. Edinburgh, United Kingdom.

139 **CORRELATION OF CORONARY ARTERY CALCIFICATION SCORES WITH FRAMINGHAM CARDIAC RISK INDIVIDUAL VARIABLES IN PATIENTS UNDERGOING ASSESSMENT FOR ORTHOTOPIC LIVER TRANSPLANTATION. (Abstract # 546)**
Norma C McAvoy, Graham McKillop, Peter C Hayes. Edinburgh, United Kingdom.

140 **PORTO-UMBILICAL ANASTOMOSIS DURING LIVER TRANSPLANTATION; A SIMPLE METHOD TO CREATE A TRANSIENT PORTOSYSTEMIC SHUNT TO AVOID SPLACHNIC CONGESTION. (Abstract # 547)**
Ignacio M Gonzalez-Pinto, Carmen Garcia-Bernardo, Alberto Miyar, Lino Vazquez, Luis Barneo, Emilia Cortes, Violeta Fernandez, Pedro Picatto, Luis Luyando. Oviedo, Asturias, Spain.

141 **RELATIONSHIP BETWEEN CALCIUM CHANNEL BLOCKER AND HEPATIC CELLS APOPTOSIS IN PRESERVATION-REPERFUSION INJURY OF LIVER TRANSPLANTATION IN RATS. (Abstract # 548)**
Liu Hongtao, Li Jiansheng. Hefei, Anhui Province, China.

142 **THE INFLUNENCE OF CALCIUM CHANNEL BLOCKERS ON INTRACELLULAR CALCIUM LEVELS OF COLD PRESERVATION-REPERFUSION INJURY DURING LIVER TRANSPLANTATION IN RATS. (Abstract # 549)**
Li Jiansheng, Liu Hongtao. Hefei, Anhui Province, China.

Gala Dinner
8:00 PM – 11:00 PM

Off-site – Copacabana Palace
*Transportation will be provided by the ILTS, departing from the Sheraton Rio Hotel promptly at 7:30 PM.

The International Liver Transplantation Society
Day-at-a-Glance, Saturday, June 23, 2007

8:00 AM – 10:00 AM	**Plenary Session II**
Page 56	*Room: Gavea A&B, 5th Floor*
10:00 AM – 10:30 AM	**Coffee Break**
	Room: Foyer, Gavea A&B, 5th Floor
10:30 AM – 12:00 PM	**Featured Symposium**
Page 57	**Burning Issues**
	Room: Gavea A&B, 5th Floor
12:00 PM – 12:20 PM	**Cutting Edge Presentation**
Page 57	**Critical Assessment of MELD for Organ Allocation**
	Room: Gavea A&B, 5th Floor
12:20 PM – 1:00 PM	**Panel on MELD**
Page 57	*Room: Gavea A&B, 5th Floor*

Saturday, June 23, 2007

Plenary Session II
8:00 AM – 10:00 AM

Room: Gavea A&B, 5th Floor
Chairs: Jacques Belghiti , MD, Hospital Beaujon University of Paris, Paris, France & Chung Mau Lo, MD, The University of Hong Kong, Hong Kong, China

8:00 AM **ALL POTENTIAL LIVING LIVER DONORS SHOULD UNDERGO LIVER BIOPSY PREDONATION. (Abstract # 550)**
Peter Horton, George Tsoulfas, Randeep Kashyap, Peter Abt, Saman Safadjou, Maureen Graham, Parvez Mantry, Benedict Maliakkal, Charlotte Ryan, Mark Orloff, Adel Bozorgzadeh. Rochester, NY, USA.

8:10 AM **LIVING DONOR LIVER TRANSPLANTATION FOR CHILDREN UNDER 10 KG IN BRAZIL. (Abstract # 551)**
Joao Seda Neto, Eduardo Carone, Vincenzo Pugliese, Alcides A. Salzedas, Eduardo Antunes, Gilda Porta, Renata S. Pugliese, Irene Miura, Vera Baggio, Massami Hayashi, Teresa Guimaraes, Andre Godoy, Marcos Beloto, Mario Kondo, Paulo Chapchap. Sao Paulo, Brazil.

8:20 AM **MULTIVISCERAL TRANSPLANTATION FOR COMPLEX THROMBOSIS OF THE PORTO-MESENTERIC SYSTEM IN THE ABSENCE OF INTESTINAL FAILURE. (Abstract # 552)**
Rodrigo M. Vianna, Richard S. Mangus, Jonathan A. Fridell, Joseph Tector. Indianapolis, IN, USA.

8:30 AM **LONG TERM OUTCOME FOLLOWING LIVER TRANSPLANTATION FOR FULMINANT LIVER FAILURE DUE TO PARACETAMOL OVERDOSE. (Abstract # 553)**
Gabriel C. Oniscu, Lucy Khan, James J. Powell. Edinburgh, United Kingdom.

8:40 AM **DETECTION OF HCV ANTIGENS IN EARLY POST-LIVER TRANSPLANT GRAFT BIOPSIES PREDICTS RECURRENT HEPATITIS C AFTER 1 YEAR IN PATIENTS TRANSPLANTED FOR HCV RELATED LIVER DISEASE. (Abstract # 554)**
Alberto Grassi, Chiara Quarneti, Micaela Susca, Matteo Ravaioli, Valentina Cipriano, Antonia D'Errico, Cristina Morelli, Fabio Piscaglia, MariaRosa Tamè, Piero Andreone, GianLuca Grazi, Daniela Zauli, Antonio D. Pinna, Francesco B. Bianchi, Giorgio Ballardini. Rimini, Italy; Bologna, Italy.

8:50 AM **ACCURACY OF EARLY BIOPSIES TO PREDICT LONG-TERM SEVERITY OF RECURRENT HEPATITIS C AFTER LIVER TRANSPLANTATION. (Abstract # 555)**
Valeria I. Descalzi, Diana J. Krasniansky, Silvina E. Yantorno, Andres E. Ruf, Oscar C. Andriani, Luis G. Podesta, Federico G. Villamil. Buenos Aires, Argentina.

9:00 AM **CORRELATION BETWEEN LIVER FIBROSIS AND INFLAMMATION IN PATIENTS TRANSPLANTED FOR HCV LIVER DISEASE. (Abstract # 556)**
Mario Angelico, Leonardo Baiocchi, Luciano Perrone, Alessandra Petrolati, Ilaria Lenci, Laura Tariciotti, Daniele Sforza, Giuseppe Iaria, Giampiero Palmieri, Giuseppe Tisone. Rome, Italy.

9:10 AM **ARE TACROLIMUS (TAC) VS. CYCLOSPORINE ME (CSA)-BASED IMMUNOSUPPRESSIVE REGIMINS ASSOCIATED WITH DIFFERENT RISKS OF DEATH DUE TO MALIGNANCY IN ADULT LIVER TRANSPLANT RECIPIENTS? (Abstract # 557)**
Julie Thompson, Russell Weisner, John Lake. Minneapolis, MN, USA; Rochester, MN, USA.

9:20 AM **IS INTRAOPERATIVE APROTININ PROPHYLAXIS ASSOCIATED WITH THE DEVELOPMENT OF RENAL DYSFUNCTION OR FAILURE AFTER LIVER TRANSPLANTATION? AN ANALYSIS OF 1067 PATIENTS. (Abstract # 558)**
Nienke Warnaar, Susan V. Mallett, Nancy Rolando, Marieke T. de Boer, Maarten W. N. Nijsten, Maarten J. H. Slooff, Andy K. Burroughs, Keith Rolles, Robert J. Porte. Groningen, Netherlands; London, United Kingdom.

9:30 AM **SIGNIFICANT CORRELATION BETWEEN INTRAGRAFT GENE EXPRESSION PROFILES LINKING TO ACUTE PHASE INJURY AND ANGONENESS WITH HCC RECURRENCE AFTER LDLT. (Abstract # 559)**
Kwan Man, Chung-Mau Lo, Kevin T. Ng, Bai-Shun Sun, Chris K. Sun, Sheung-Tat Fan. Hong Kong, China.

9:40 AM **COVALENTLY CLOSED CIRCULAR DNA (ccc DNA) IN POST-TRANSPLANT LIVER BIOPSIES: A NEW TEST TO ASSESS THE PRESENCE OF THE VIRUS IN HBV TRANSPLANTED PATIENTS. (Abstract # 560)**
Mario Angelico, Ilaria Lenci, Daniele Di Paolo, Raffaella Lionetti, Laura Tariciotti, Linda De Luca, Andrea Monaco, Daniele Sforza, Alessandro Anselmo, Carlo Federico Perno, Giuseppe Tisone. Rome, Italy.

9:50 AM **LONG-TERM CONSEQUENCES OF DOMINO LIVER TRANSPLANTATION USING FAMILIAL AMYLOIDOTIC POLYNEUROPATHY GRAFTS. (Abstract # 561)**
Shinji Yamamoto, Henryk E. Wilczek, Hassan Kansoul, Takashi Iwata, Marie Larsson, Henrik Gjertsen, Gunnar Söderdahl, Göran Solders, Bo-Göran Ericzon. Stockholm, Sweden.

Coffee Break
10:00 AM – 10:30 AM

Room: Foyer, Gavea A&B, 5th Floor

Featured Symposium: Burning Issues
10:30 AM – 12:00 PM

Room: Gavea A&B, 5th Floor
Chairs: John J. Fung, MD, PhD, Cleveland Clinic Foundation, Cleveland, United States & Paulo Fontes, MD, University of Pittsburgh Medical Center, Pittsburgh, United States

10:30 AM **Creating an International Registry on LDLT**
John J. Fung, MD, PhD
Cleveland Clinic Foundation
Cleveland, United States

10:45 AM **Immunosuppression and Antiviral Therapy for HCV Recipients**
Michael Charlton, MD
Mayo Clinic , Rochester
Rochester, United States

11:00 AM **How to Prevent and Treat Kidney Failure after Liver Transplantation**
John R. Lake, MD
University of Minnesota Medical School
Minneapolis, United States

11:15 AM **Diabetes and Cardiovascular Risk**
Peter Neuhaus, MD
Universitatsmedizen Berlin
Berlin, Germany

11:30 AM **Evolving Strategies for the Prevention and Treatment of Hepatitis B in the Liver Transplant Recipient**
Geoffrey McCaughan, MD, PhD
Royal Prince Alfred Hospital
Sydney, Australia

11:45 AM **Discussion**

Cutting Edge Presentation
12:00 PM - 12:20 PM

Room: Gavea A&B, 5th Floor
Chairs: Claudio de Moura Lacerda, MD, Hospital Universitario Oswaldo Cruz, Recife, Brazil & Russell H. Wiesner, MD, Mayo Clinic, Rochester, United States

Critical Assessment of MELD for Organ Allocation
Richard Freeman, MD
Tufts-New England Medical Center
Boston, United States

Panel on MELD
12:20 PM – 1:00 PM

Room: Gavea A&B, 5th Floor
Chairs: Geoffrey McCaughan, MD, Royal Prince Alfred Hospital, Sydney, Australia & Russell H. Wiesner, MD, Mayo Clinic, Rochester, United States

Panelists: *Sue V. McDiarmid, MD*
University of California, Los Angeles
Los Angeles, United States;
Andres Ruf, MD
Favaloro Foundation and University
Buenos Aires, Argentina;
Jacques Belghiti, MD
Hosp Beaujon Univ Paris VII 07
Paris, France;
Richard Freeman, MD
Tufts-New England Medical Center
Boston, United States;
Mario Kondo, MD
Universidade Federal de Sao Paulo
Sao Paulo, Brazil

Notes

Notes

Notes

INTERNATIONAL LIVER TRANSPLANTATION SOCIETY 2007 ABSTRACTS

Poster Session I

Abstract# 1 Poster Board #-Session: P1-I

PROPOFOL PRETREATMENT ATTENUATES LIPOPOLYSACCHARIDE-INDUCED INFLAMMATORY CYTOKINE GENE EXPRESSION IN CULTURED HEPATOCYTES. Bruno Jawan[1], Chao-Long Chen[2], Ying-Hsien Kao[2], Chih-Hsien Wang[1], Chia-Jung Huang[1], Kuan-Hung Chen[1], Yu-Fan Cheng[2], Chi-Chih Wang[2], Allan Concejero[2]. *[1]Anesthesiology, Chang Gung Memorial Hospital. Kaohsiung Medical Center, Kaohsiung, Taiwan; [2]Liver Transplant Program, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.*

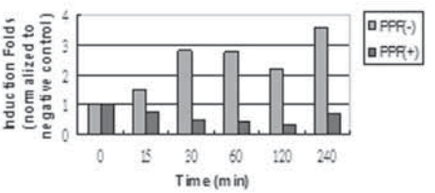
Objective: Propofol (PPF) is widely used as an anesthetic agent in liver transplantation. Recently, it was reported to possess suppressive actions on host immunity by modulating the pro-inflammatory cytokine production in macrophages and reducing nitric oxide synthesis in lipopolysaccharide (LPS)-activated monocytes. The aim of this study is to investigate whether PPF plays a role in modulating the inflammatory cytokine production in liver parenchymal cells-hepatocytes.

Methods and Materials: Cultured hepatocytes were treated with PPF for 24h. The study group was followed by LPS stimulation. The total RNAs were collected at different time points and subjected to reverse transcriptase-polymerase chain reaction for mRNA quantification.

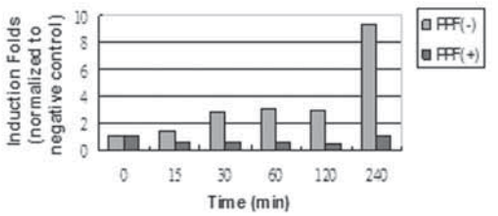
Results: PPF at concentrations up to 300 mM showed no hepatotoxicity as determined by cellular viability assay. PPF treatment at 100 mM *per se* showed no significant alteration in gene expression of pro-inflammatory cytokines. However, PPF pretreatment exhibited suppressive actions on LPS-induced TLR-4 and CD14 gene expression (Fig. 1). Likewise, PPF pretreatment also attenuated the LPS-induced IL-6 and GM-CSF gene expression. PPF, however, increased IL-10 gene expression. Furthermore, The phosporylation of IkB protein was also significantly suppressed.

Conclusion: PPF treatment may drive the hepatocytes toward anti-inflammation and less responsive to LPS stimulation. The use of PPF as anesthetic agent in liver transplantation surgery may provide additional protection to the hepatocytes against insults caused by inflammation and infection.

Figure 1 tlr4 gene Expression



cd14 gene Expression



Abstract# 2 Poster Board #-Session: P2-I

A RARE ASSOCIATION OF LIVER TRANSPLANTATION AND TAKOTSUBO CARDIOMYOPATHY. Camila Paiva[1], Leonardo Ferraz[1,2], Jose Augusto Marcondes de Souza[2], Rafael Pecora[1], Sergio Mies[1]. *[1]Liver Unit, Albert Einstein Hospital, São Paulo, Brazil; [2]Intensive Care Unit, Albert Einstein Hospital, São Paulo, Brazil.*

Introduction: The transient left ventricular apical ballooning syndrome, also called as Takotsubo cardiomyopathy or "broken heart syndrome", is characterized by transient wall-motion abnormalities involving the left ventricular apex and mid-ventricle in the absence of obstructive coronary disease. This report describes, for the first time, a rare association of liver transplantation and Takotsubo cardiomyophathy.

Case report: The patient was a 68 year-old male with chronic hepatitis C virus (HCV) and hepatocellular carcinoma that was submitted to *domino* liver transplantation in April 2006. The pre-operative evaluation showed good ventricular function without signs of coronary arterial disease. In the operative setting there were no complications. Within the first 48 hours of transplantation the patient developed hemodynamic instability with a severe decrease of the cardiac index and requirement of high doses of vasopressors. Cardiac enzymes were slightly elevated and electrocardiography revealed anterior T wave inversion. Transthoracic echocardiography demonstrated a pattern of severe left ventricular dysfunction, in which all segments except the base became hypokinetic. Urgent coronary angiography showed normal coronary arteries and left ventricular angiography demonstrated the presence of apical ballooning akinesis associated with basal hypercontraction. To achieve hemodynamic stability the patient demanded aortic balloon counterpulsation for three days and inothropic therapy for one week. Follow-up echocardiography on day 11 revealed complete resolution of regional contractility of the left ventricle. After 36 days, the patient died from a multiple organ dysfunction due to septic shock induced by a multi-resistant catheter related infection.

Conclusion: To our knowledge, broken heart syndrome after liver transplantation has not been reported previously. Hemodynamic instability in the post-operative setting of liver transplantation has several causes. We report one more cause that should be ruled out when severe ventricular dysfunction happens soon after liver transplantation. Although the prognosis of Takotsubo cardiomyopathy is good, with complete reversal of heart failure and 1% mortality in literature, it could be fatal in liver transplanted patients.

Abstract# 3 Poster Board #-Session: P3-I

PULMONARY EMBOLISM IN DONORS UNDERGOING RIGHT LOBE HEPATECTOMY FOR LIVING DONOR TRANSPLANTATION. Alexandre Teruya[2], Alexandre P. Oliveira[2], Flavio Takaoka[2], Rogerio P. Barbosa[2], Sergio Mies[1]. *[1]Liver Unit, Hospital Israelita Albert Einstein, Sao Paulo, SP, Brazil; [2]Anesthesiology, Hospital Israelita Albert Einstein, Sao Paulo, SP, Brazil.*

Introduction

Until recently the occurrence of deep vein thrombosis has not been clearly anticipated as a significant source of serious and even fatal event in donors of living donor liver transplantation (LDLT).

The objective of this study was to evaluate the donor outcome of adult-to-adult LDLT in our Institution, specially the occurrence of pulmonary thromboembolism (PTE).

Methods

From January 2002 to December 2005, we performed 121 LRLT. Right lobectomy was performed in donor patients (74 men and 47 women) aged 32.8±8.9 (18 to 50 years). Anesthesia induction and maintenance consisted of propofol, fentanyl, remifentanil and cisatracurium. No epidural catheters were placed in the last 116 donors. No anticoagulation was used preoperatively. Prophylactic regimen for deep vein thrombosis included graduated compression stockings and intermittent pneumatic compression or footpumps in all patients.

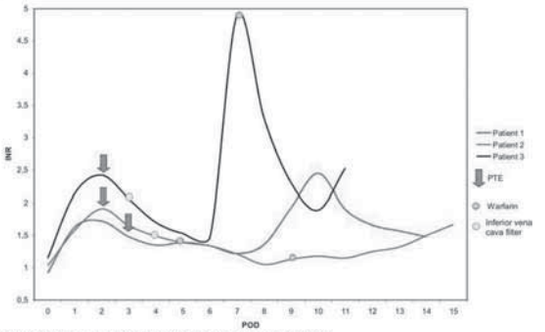
Results

Mean surgery time was 593.7 ± 107 min. One hundred and three patients were extubated in the operating room. Postoperatively, all but one donor required intensive care unit admission. In the immediate postoperative period, all donors exhibited significant elevation of liver enzymes and a 63% prolongation in the prothrombin time (Mean preoperative INR = 1.08 ± 0.13. Mean first postoperative day INR = 1.77 ± 0.34). Three patients (2.4%) presented deep vein thrombosis (DVT) and pulmonary thromboembolism.

Patient 1 was treated conservatively with warfarin. An inferior vena cava filter was placed on patients 2 and 3. None of them required reintubation and mechanical ventilation; they had a favorable evolution.
Median hospital stay was 5 days (3 to 31 days). No long-term complications were encountered.

Conclusions

PE is a major risk to patients submitted to right lobe hepatectomy for LDLT. Use of regional analgesia may be reconsidered as an adjunct to provide additional protection against venous thromboembolism despite the risks for epidural hematoma.



INR variation on patients with pulmonary embolism
Red arrows show the POD when embolism has occurred, blue dots show warfarin introduction and green dots IVC placement

Abstract# 4 Poster Board #-Session: P4-I

SHORT-TERM PROGNOSIS IN LIVER TRANSPLANTATION PATIENTS ADMITTED TO INTENSIVE CARE UNIT ASSESSED BY PROGNOSTIC SCORING SYSTEMS. Pedro Medeiros, Jr.[1], Rodrigo Surjan[1], Telésforo Bacchella[1], Marcel Machado[1]. *[1]Liver Transplantation Surgery, School of Medicine University of São Paulo, São Paulo, SP, Brazil.*

Introduction: Short-term prognosis of liver transplanted patients is affected by the degree of previous hepatic insufficiency, extrahepatic organ systems dysfunction and surgery and donor organ conditions. Prognostic indexes in ICU have been used in order to predict survival, but none could assessed it properly. **Aim:** To prospectively evaluate ICU admission indexes and clinical conditions of liver transplanted patients in order to identify predictors of inhospital mortality.

Method: 30 liver transplanted patients were prospectively evaluated in 2006. Demographic and clinical variables were registred.

Demographic and Clinical Characteristics of 30 Liver Transplant Patients Admitted to a Liver Intesive Care Unit

	All Patients (n=30)	Hospital Survivors (n=26)	Hospital Nonsurvivors (n=4)	P
Gender (F/M)	16/14	15/11	1/3	NS
Age (years ± SD	46.1± 14,5	45.1± 13.3	59 ± 13	NS
MELD score	19.8± 8.9	18.9± 8.7	30.3± 2.3	0.0002
Child-Pugh points (mean ± SD)	8.6± 2.2	8.6 ± 2.2	9.6± 1.5	NS
APACHE II 24h ICU admission (mean ± SD)	14.1± 5.5	13.2± 4.8	22.6± 5.5	NS
SAPS II 24h ICU admission (mean ± SD)	28.9± 14	27.9± 13.5	43.3± 8.1	0.05
SOFA (mean ± SD)	9± 3.8	8.9± 3.8	11.6± 3	NS
Charlson Comorbidity Index	4.3± 1.5	4.1± 1.2	6.3± 1.1	0.06
Mechanical Ventilation (days ± SD)	3.7± 10.7	2.6± 10.5	10.3± 6.8	0.05
BE ICU admission	-7.0± 4.3	-6.4± 4.1	-9.5± 3.3	NS
Briceño score	3.2± 1.6	3± 1.4	5.6 ± 1.5	0.08
Hemodialysis (n)	6/30	3/26	3/4	NS
BMI kg / m²	26.7± 5	26.6± 5	29.1± 5.4	NS

In an initial analysis, MELD score and SAPSII at 24 hours of ICU admission were the principal variables related to hospital mortality. APACHE II, Charlson Comorbity Index, Briceño score and mechanical ventilation (MV) time yielded a trend to influence hospital mortality. **Discussion:** MELD and SAPSII were the main scores associated to hospital mortality in liver transplanted patients. Child-Pugh score, although frequently used to stratify cirrhosis severity, was not correlated to short-term prognosis. APACHE II, Charlson Comorbity Index and Briceño score and MV did not reach statistical significance, but this situation may be modified by population enlargement. Conclusion: Identifying predictors of early mortality in ICU may help to stratify severity and improve patients outcome in liver transplantation.

Abstract# 5 Poster Board #-Session: P5-I

EARLY EXTUBATION IN LIVER TRANSPLANT RECIPIENTS. Alexandre Teruya[1], Flavio Takaoka[1], Rogerio P. Barbosa[1], Marcel V. Vitorelli[1], Sergio Mies[2]. *[1]Anesthesiology, Hospital Israelita Albert Einstein, Sao Paulo, SP, Brazil; [2]Liver Unit, Hospital Israelita Albert Einstein, Sao Paulo, SP, Brazil.*

Introduction

Advances in anesthetic management, surgical techniques and patient preparation, in addition to improved postoperative care and reported advantages of early postoperative tracheal extubation of liver recipients, encouraged us to extubate selected recipients at the end of the operation. The aim of the present study was to evaluate perioperative data of liver transplant recipients who were extubated immediately at the end of surgery.

Methods

We retrospectively reviewed perioperative data of patients who underwent Orthotopic Liver Transplant (OLT) between January 2002 and December 2005. In this period a total of 370 adult OLTs were performed (120 living donor liver transplantation). Exclusion criteria for extubation were defined as: age > 60 years old, preoperative cerebral encephalopathy, obesity (body mass index > 34kg/m2), previously intubated in the ICU, packed red blood cell transfusion > 10 U, marginal donors and vasoactive support at end of surgery. Patients in the study group were separated into 3 groups: Group 1: Extubated in the OR; Group 2: Extubated less than 12 hours in the ICU; Group 3: Extubated longer than 12 hours in the ICU. Venovenous bypass or temporary porto-caval shunting were not applied in a routine basis (only 2 cases). Surgical technique consisted of piggyback with caval preservation (316 cases), with the remaining cases having conventional caval reconstruction. Standard anesthesia monitoring with radial artery and pulmonary artery catheter, electrocardiogram, pulse oxymeter, Bispectral Index, capnogram and anesthetic gas concentration and urine output were used in all patients.

Results

One hundred and sixty-six patients matched the exclusion criteria, leaving 204 patients in this study. Among this group, 70 patients (34.3%) were extubated immediately after surgery. None of these patients required reintubation postoperatively. Ninety-nine patients (48.5%) were extubated in the ICU within 12 h after OLT, with a mean extubation time of 5.26h. Twenty-nine patients (34.3%) were extubated after 12 h, with a mean extubation time of 166h. Six patients (2.9%) were not extubated, 3 died on ICU and 3 were submitted to retransplantation.

Conclusions

Advances in surgical and anesthetic technique and management allowed safe early extubation. In this series most of the patients were safely extubated in less than 6 hours.

Abstract# 6 Poster Board #-Session: P6-I

BISPECTRAL INDEX (BIS™) MONITORING AND END-TIDAL ISOFLURANE CONCENTRATIONS DURING ANESTHESIA FOR LIVER TRANSPLANTATION. R. Schumann[1], J. Hudcova[1], C. Anderson[1], I. Bonney[1]. *[1]Dept. of Anesthesia, Tufts-New England Medical Center, Boston, USA.*

Introduction: Limited information is available for bispectral index (BIS) depth of anesthesia monitoring during liver transplantation (LT). To report BIS values during different stages of LT and compare possible effects of BIS monitoring on Isoflurane use during anesthesia for LT, we conducted a retrospective chart analyses.

Methods: Following institutional review board approval, records of 45 patients undergoing LT using an isoflurane/air/O2 + opioid infusion based anesthetic were analyzed. Demographic data collection included age, BMI and MELD score. 23 BIS monitored patients were compared to 22 controls. Preanhepatic, anhepatic and postanhepatic end-tidal Isoflurane concentrations (etISO) were compared, as well as BIS values for each of these LT stages using the t-test; p values <0.05 were considered statistically significant. Values in means ± standard deviation.

Results: There was no significant difference in demographics, or time to extubation between groups. The mean BIS was 39±5. The values between preanhepatic, anhepatic and neohepatic stage were 38.6±5, 37.5±6 and 38.9±7 respectively (ns). Neither the etISO for the different LT stages, nor its percent change between stages was significantly different between BIS and control group (Table I). For the entire study population etISO was significantly different between preanhepatic - anhepatic and anhepatic - postanhepatic phase (p=0.004 and p=0.022 respectively), with a lower etISO in the anhepatic stage.

Conclusion: In our study BIS values for depth of anesthesia monitoring are not significantly different between 3 examined stages of LT. Intraoperative BIS monitoring did not change the time to extubation. Isoflurane as one component of anesthesia was not administered differently between groups and respective LT stages. However, when analyzing the entire cohort, the Isoflurane dose was significantly reduced during the anhepatic stage, revealing a distinct BIS independent anesthesia practice pattern. To extend or confirm and these initial results a larger scale study on BIS utility in LT is desirable.

TABLE I

	% End-tidal Isoflurane		
LT stage	BIS group	Control group	p Value
Preanhepatic	0.64	0.68	0.78
Anhepatic	0.52	0.62	0.32
Postanhepatic	0.63	0.73	0.29
Combined	0.59	0.66	0.36

Isoflurane during LT

Abstract# 7 Poster Board #-Session: P7-I

NASAL BRIDLE: A TECHNIQUE TO SECURE NASOJEJUNAL FEEDING TUBES IN LIVER TRANSPLANT CANDIDATES AND RECIPIENTS. David J. Kramer[1], Juan M. Canabal[2], Lisa C. Arasi[3], Jaime Aranda-Michel[4]. *[1]Transplant and Critical Care, Mayo Clinic, Jacksonville, FL, USA.*

Purpose: Present a minimally invasive technique to secure feeding tubes for prolonged nasojejunal feedings in liver transplant recipients and candidates.

Background: Liver transplantation is the accepted long-term treatment of end-stage liver disease. Progressive liver failure results in malnutrition which adversely affects the outcome from liver transplantation. A growing imbalance between the number of candidates and the number of organs donated for liver transplantation has increased waiting times. Malnutrition in liver failure results from loss of appetite, early satiety, post-prandial discomfort, nausea and vomiting, esophagitis and sodium and protein restriction. Concerns about safety lead many physicians to avoid placement. Hepatic encephalopathy results in agitation which results in inadvertent removal of the nasojejunal tube.

Methods: Nasojejunal tubes are placed in the intensive care unit or in the radiology suite in malnourished patients who are candidates for or recipients of liver transplants. A lubricated cotton-tipped applicator is used to sound the passage to the posterior aspect of the naso-oropharynx. A 10-French, 140 cm feeding tube is advanced into the small bowel, distal to the ligament of Treitz, guided by fluoroscopy. An 8-French red rubber tube is advanced into each naris and into the oropharynx. The patient's mouth is opened and tongue depressed with a 3 Mac laryngoscope blade and the two red tuber tubes are extracted with a McGill forceps. These are tied together and returned to the oropharynx where one red rubber tube is guided into the nasopharynx and out of the contralateral naris. The red rubber tube is secured to itself with a 1 cm overlap using 0-silk ties. The feeding tube is then secured with 0-silk ties to the bridle. The nasojejunal tube can be replaced without disturbing the nasal bridle.

Conclusions: This technique has secured feeding tubes for up to three months in patients with varying acuity—from ICU to outpatient. No epistaxis or sinusitis has developed in these patients. In patients for whom tape had secured previous tubes we observed a marked reduction in the times tubes were dislodged. In summary, we present a simple technique which facilitates the correction of malnutrition in patients with liver disease. We speculate this will reduce the morbidity of liver transplantation in severely malnourished recipients.

Abstract# 8 Poster Board #-Session: P8-I

IS LIMITED EFFICACY OF rFVIIa PREDICTABLE DURING OLT? R. Schumann[1], J. Hudcova[1]. *[1]Department of Anesthesia, Tufts-NEMC, Boston, USA.*

Background: Recombinant activated factor VII (rFVIIa) has been used 'off-label' in complex coagulopathy during liver transplantation (LT). However, its indication, safety, efficacy and dosing in LT are undefined, and its use may be unsuccessful. We report two LT cases of ineffective rFVIIa administration for bleeding.

Cases: 1. A 52 yo. man with hep C cirrhosis, MELD 20, presented for LT. Surgery was uneventful with the following coagulation parameters at graft reperfusion: PT 15.2 (10.7-13.2 sec), INR 1.3 (0.9-1.1), aPTT 37.7 (23-34 sec), fibrinogen (F) 196 (221-421 mg/dl), platelets (plts) 89 (150-400k/µL). Within 3 hours progressive non-surgical bleeding developed, despite continued blood product (BP) administration. With a PT 17.0, INR 1.5, aPTT 99, F 110 and plts 59, a 66 mcg/kg rFVIIa bolus was given plus aminocaproic acid (AA, 250mg bolus, then 250mg/h). PT and INR normalized, F improved, but no clot formation ensued. Plts remained low; aPTT peaked at 104 staying elevated, and bleeding continued unabated. Estimated blood loss (EBL) was 15L and continued at 1L/hr in the ICU for 3 hours. Treatment included AA and 2 additional 14 mcg/kg rFVIIa doses at 4 hr intervals. At re-exploration 6 hours later clot formation was present and the patient ultimately recovered fully.

2. A 63 y.o man underwent LT for cryptogenic cirrhosis, MELD 27. At graft reperfusion PT was 15.1, INR 1.4, aPTT 50, F 236 and plts were 68. Within 2 hours significant, increasing non-surgical bleeding evolved, despite continuous BP replacement. With a PT 14.4, INR 1.3, aPTT 77 (peak 130), F 155 and plts 62, a 70mcg/kg rFVIIa bolus was given, and AA as above. The PT, INR and F normalized while aPTT remained at 77 and plts were 43 with unrelenting clinical bleeding. The EBL was 17L and with continued treatment the patient stabilized and eventually recovered.

Significance: Both cases illustrate post-reperfusion coagulopathy failing BP replacement therapy. PT, INR and fibrinogen were corrected with F, plts, AA and rFVIIa, without clinical improvement. A heparin-like effect following graft reperfusion may be responsible, and is supported by the sustained aPTT prolongation. While rFVIIa facilitates thrombin generation and platelet function, a heparin-like effect will prevent hemostasis. Such an effect may be due to poor initial graft function with intrinsic heparinoid release, that might respond to protamine. Thrombelastography could further characterize this hemostatic defect, aid in its treatment, and help avoid unnecessary rFVIIa use in LT.

Abstract# 9 Poster Board #-Session: P9-I

CAN PATIENTS WITH VALVULAR CONGESTIVE HEART FAILURE SAFELY UNDERGO ORTHOTOPIC LIVER TRANSPLANTATION? Samuel A. Irefin, Brian M. Parker, Charles M. Miller, John Fung, Donald Hammer. *[1]Anesthesiology & Critical Care, Cleveland Clinic, Cleveland, OH, USA; [2]Transplant Center, Cleveland Clinic, Cleveland, OH, USA; [3]Cardiovascular Medicine, Cleveland Clinic, Cleveland, OH, USA.*

In patients with congestive heart failure and older than 65 years of age, studies have demonstrated that these patients are at an increased risk of substantial morbidity and mortality after non-cardiac surgery despite advances in perioperative care. We present a case and management of a patient with atrial fibrillation, congestive heart failure and severe mitral regurgitation who presents for orthotopic liver transplantation.

Case Report:

Our patient is a 67 year-old male with known history of ESLD secondary to Hepatitis C. In addition, he has myxomatous mitral valve disease with severe mitral regurgitation, congestive heart failure, hypertension and chronic atrial fibrillation. The advanced liver cirrhosis was complicated by esophageal varices and renal insufficiency. He was referred to our institution for mitral valve repair or replacement and orthotopic liver transplantation.

It was reasoned that the cardiac procedure needs to be attempted first before he can be listed for liver transplantation. At our institution we entertained combined heart-liver procedure but decided against it due to advanced liver disease and the complexity of the heart procedures that will be required.

We therefore opted for orthotopic liver transplantation to be followed at a later date by mitral valve replacement/repair and maze procedure for atrial fibrillation.

Our patient underwent successful orthotopic liver transplantation with significant intraoperative hemodynamic changes secondary to severe mitral regurgitation, congestive heart failure and atrial fibrillation. Six months later he underwent mitral valve repair with Cosgrove-Edwards annuloplasty ring, closure of left atrial appendage and maze procedure. He did well post-operatively and was discharged to home a few weeks later.

Conclusion Non-cardiac surgery in patients with significant heart disease is associated with substantial cardiac morbidity and mortality. Cases of combined cardiac surgery and liver transplantation in patients with significant heart disease have been reported in the literature. Our case illustrate that liver transplantation can be successfully performed in patients with significant heart disease without major sequence. This can be followed by cardiac surgery at a later date if necessary.

Abstract# 10 Poster Board #-Session: P10-I

PREOPERATIVE PREDICTORS OF EARLY EXTUBATION ON ORTHOTOPIC LIVER TRANSPLANTATION.

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Preoperative ASA status can be essential to the early extubation, but in orthotopic liver tranplant cases, the preoperative MELD/CHILD score is directly linked with the extubation.

This is retrospective study of the first 50 consecutive patients transplanted at Bonsucesso General Hospital between 2001 and 2004.

We excluded the patients with Fulminant Hepatic Failure because they arrived in the OR in coma already intubated and the pediatric patients (< 25 kg) who were at the time out of the fast-tracking protocol. The anesthesia protocol for OLT recipients was: propofol; remifentanyl; atracurium; aprotinin. The patients were monitored with 5-lead ECG, SpO2, end-tidal CO2, mean arterial pressure, central venous pressure , pulmonary arterial pressure , SvO2, cardiac output, blood temperature, urine output, peripheral nerve stimulation, and BIS.

Extubation criteria was: awake state; positive reflexes; neuromuscular reversal; body temperature; not hypoxemic; ABG not acidotic; ETCO2 < 50 mm Hg; Tidal Volume of at least 7 ml/kg; hemodynamically stable.

The early extubation after long surgeries was possible to be done with safety after the development of the new anesthesia drugs, which were metabolized faster and not uncommonly by non-specific esterases in the blood, independently of the liver and the kidney functions. Several studies have described respiratory complications after OLT as infections, pleural effusion, pneumothorax, respiratory insufficiency and weaning difficulties, as we saw in our patients who stayied intubated, especially the pediatric patients. Results: 34 patients (68%) were extubated in the OR and 4 (11,7%) were reintubated in the ICU.Child A, B and were extubated on a 100%, 72,6% and 56% basis respectively. 73,7% of the non diabetic patients were early extubated compared to 50% of the diabetic ones. 51,7% of the patients older than 50y were extubated versus 93,3% yonger than 50y (P<0,01). We concluded that patients who were extubated in the OR had a preoperative clinical status better than the ones who stayied intubated, as the CHILD score and were younger. The incident of reintubations was low and related to complications of the graft, not pulmonary complications.

Abstract# 11 Poster Board #-Session: P11-I

COMPARISON THE EFFECTS OF DIFFERENT GAS FLOWS OF ANESTHESIA AND DIFFERENT AMBIENT OPERATION ROOM TEMPERATURES ON THE CORE TEMPERATURES OF PATIENTS UNDERGOING PARTIAL LIVING DONOR HEPATECTOMY.

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Purpose

Maintenance of perioperative normothermia should become a standard practice. The purpose of the study was to compare the effect of different combinations of fresh gas flows of anesthesia and different ambient operation room temperature on the changes of core temperature in healthy donors undergoing partial living donor hepatectomy

Methods and patients

The anesthesia records of 114 patients undergoing partial living donor hepatectomy were reviewed retrospectively. Anesthesia and measures to prevent heat loss, except ORT and flows of the anesthesia were all the same. Nasopharyngeal temperature (NT) was recorded after anesthesia induction, then hourly until completion of operation. Changes in NTs were analyzed and compared. Patients age, weight, duration of anesthesia, blood loss, intravenous fluids, total urine output, pre- and post-operative hemoglobin and hematocrit were also compared by using one way ANOVA.

Results

The patients were divided into four groups. The grouping was not randomized or blinded. The patients were assigned chronologically as they were admitted.

GI(n=37): isoflurane in 2 liters(L) oxygen and 2 L air at typical ambient ORT (Temperature: 19-21 °C).

GII(n=11) isoflurane in 1L oxygen and 1L air at typical ambient ORT.

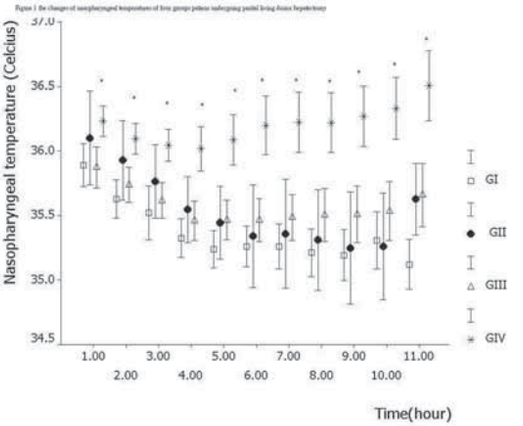
GIII(n=31) isofulrane in O.5 L oxygen at typical ambient ORT.

GIV(n=35) isoflurane in 0,5L oxygen at ORT of 24 °C.

Patients age, weight, duration of anesthesia, blood loss, intravenous fluids, total urine output, pre- and post-operative hemoglobin and hematocrit were not significantly different among groups. The changes NTs of GIV were significantly higher in comparison to the other three groups, while the changes of NTs of GI, GII and GIII were almost the same.

Conclusion

Increased ORT to 24 °C resulted in an increased of core temperature of at least 0.5 °C at any measured time points during partial living donor hepatectomy. No significant effects of low flow anesthesia on the NTs could be identified.



Abstract# 12 Poster Board #-Session: P12-I

BILE CAST SYNDROME: A CAUSE FOR HEPATIC ALLOGRAFT FAILURE.

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Background: Development of diffuse bile casts in hepatic allograft is uncommon but generally leads to graft failure and re-transplantation. Stated to occur as frequently as in 4 18 % of grafts in early years of liver transplantation, its incidence is much lower in recent years, probably under 2%. Sufficient consideration is not accorded to this phenomenon in contemporary liver transplant literature. The pathogenesis of bile casts is poorly understood and likely multifactorial including ischemia, extrahepatic biliary stricture formation and donor factors. We undertook this study to highlight potential underlying factors in the development of bile cast syndrome (BCS).

Design: Between 1999 and 2006, 10 failed grafts due to BCS were identified in our files from about 900 OLTs (1%). 10 other age-matched patients with OLT and no graft dysfunction for at least 1 year were used as controls. The following information was collected: Donor factors such as age, warm and cold ischemia times, heart-beating status (HBD or NHBD); duration of graft survival, recurrence of BCS in new grafts, biliary stricture formation and ischemia contributed by hepatic artery thrombosis (HAT), sepsis and/or rejection.

Results: As opposed to controls the BCS patients were more likely to have the following: NHBD (40%), biliary stricture (30%) and ischemia contributed by HAT (20%), cellular rejections (50%) and sepsis (20%). The median duration of graft survival before BCS was 6 months and there was no recurrence of BCS in the new grafts. The donor age and the warm and cold ischemia times seemed non-contributory to the risk of BCS.

Conclusions: The incidence of BCS is lower in recent years with median graft survival of 6 months and no predisposition to similar process in the new graft. All proposed pathogenetic mechanisms including donor factors, ischemia and biliary strictures appear to contribute individually or collectively in the development of BCS. Among these, non-heart beating donor status and cellular rejections leading to ischemia are major promoters of BCS.

Abstract# 13 Poster Board #-Session: P13-I

PERITONEAL LEUKOCYTOCLASTIC VASCULITIS AS A CAUSE OF UNEXPLAINED PERSISTENT ASCITES AFTER LIVER TRANSPLANTATION. Renato Romagnoli[1], Paolo Strignano[1], Francesco Lupo[1], Francesco Tandoi[1], Daniela Di Franco[1], Stefano Mirabella[1], Alessandro Ricchiuti[1], Andrea Brunati[1], Elisabetta Cerutti[2], Mauro Salizzoni[1]. *[1]Liver Transplant Unit - General Surgery, S. Giovanni Battista Hospital, Turin, Italy; [2]Intensive Care Unit, S. Giovanni Battista Hospital, Turin, Italy.*

Clinical background: the case of a peritoneal leukocytoclastic vasculitis after liver transplantation is reported.

Case Report: a 43-year-old female affected by essential thrombocytemia underwent liver transplantation (LT) on november 1999. Main indication to LT was chronic Budd Chiari syndrome. Caval anastomosis was performed with piggy back technique. Hepatic artery thrombosis occurred three days after LT requiring urgent retranplantation (re-LT). During re-LT caval anastomosis was done with classical technique. The patient was discharged at the 18th postoperative day under oral anticoagulant therapy. In the following days refractory ascites appeared caused by supra-anastomotic caval stenosis: a successful procedure of balloon dilatation and caval stenting was performed. Despite the well working vascular stent, ascites persisted. Contemporaneously a "de novo" B hepatitis was diagnosed: donor serology anti-HBcAb was positive and a liver biopsy showed anti-HBV immunostaining. The episode was succesfully treated with antiviral therapy. At the same time diffuse arthralgias appeared: immunological test showed anti-cardiolipine and anti-nucleus antibody positivity with slightly consumed complement. A further liver biopsy showed no evidence of sinusoidal enlargement or B hepatitis features, while peritoneal biopsies revealed leukocytoclastic vasculitis. After conventional steroid therapy ascites gradually disappeared. Five years later there was a recurrence of the caval stenosis successfully treated with caval stent balloon dilatation. Afterwards no ascites recurrence was observed. At present the patient is doing well with normal liver enzymes and negative serum HBV-DNA.

Significance: as we know this is the first case of peritoneal leukocytoclastic vasculitis after LT. Sierosal vasculitis can be a cause of persistent ascites; this clinical condition should ever be considered when ascites remains unexplained.

Abstract# 14 Poster Board #-Session: P14-I

RECURRENT IDIOPATHIC GRANULOMATOUS PHLEBITIS AFTER LIVER TRANSPLANTATION: PRESENTATION AND MANAGEMENT. Kymberly D. S. Watt[1], Kevork M. Peltekian[1], Mark Walsh[2], Michele Molinari[2], Ian Wanless[3]. *[1]Gastroenterology/Hepatology, Dalhousie University, Halifax, NS, Canada; [2]Surgery, Dalhousie University, Halifax, NS, Canada; [3]Pathology, Dalhousie University, Halifax, NS, Canada.*

Background: We describe a case of idiopathic granulomatous phlebitis that recurred post transplantation. **Case Report:** A 66 year old male initially diagnosed with primary sclerosing cholangitis listed for liver transplantation based on refractory ascites, variceal bleeding and pancytopenia attributed to splenomegally. On June 11, 2005, he underwent orthotopic liver transplantation. His immunosuppressive regime included IV Basiliximab, tapering steroids, and cyclosporine. Post transplant doppler ultrasounds were normal. The explanted liver showed significant fibrous obliteration of the large and small intrahepatic vasculature, with no evidence of PSC. He had no risk factors for veno-occlusive disease. A hypercoagulation workup was normal.

At 6 months post transplant, he developed recurrent ascites with worsening pancytopenia and renal insufficiency. He had moderate cholestasisis but liver function and transaminases were normal and CMV PCR negative. Magnetic resonance venogram showed normal hepatic veins and inferior vena-cava, with the main portal vein patent although the left becoming rapidly attenuated. The liver pathology revealed granulomatous phlebitis of the hepatic and portal veins with fibrous obliteration of the intrahepatic venules and sinusoidal congestion, with zone 3 necrosis. He was anticoagulated with warfarin and aspirin. His platelet counts continued to decrease, thus the prednisone dose was increased to 30 mg per day. His cholestasis slowly improved, his ascites resolved and his platelet counts improved over the subsequent weeks to months. 16 months post transplant his graft function is normal, with stable mild cholestasis, and his platelet counts continue to be stable. **Significance**: This is the first case of recurrent idiopathic GP of the liver described. This case presented as a cholestatic, chronic, progressive liver disease with significant portal hypertension. Whether there is an association between cholestatic diseases of the liver and GP or whether GP is misdiagnosed as a cholestatic disease is unknown. This patient was managed with anticoagulation (warfarin and aspirin), and moderate dose steroids and has remained stable.

Abstract# 15 Poster Board #-Session: P15-I

SEVERE HEPATIC STEATOSIS MIMIKING BUDD-CHIARI LIKE SYNDROME AS A SYMPTOM OF NONCOMPLIANCE AFTER LIVER TRANSPLANTATION. Felix Braun[1], Holger Hinrichsen[2], Antje Grosse[3], Fred Faendrich[1], Dieter Broering[1]. *[1]Klinik für Allgemeine Chirurgie und Thoraxchirurgie, Universitätsklinikum Schleswig-Holstein, Campus Kiel, Kiel, Germany; [2]I. Medizinische Klinik, Universitätsklinikum Schleswig-Holstein, Campus Kiel, Kiel, Germany; [3]Klinik für Diagnostische Radiologie, Universitätsklinikum Schleswig-Holstein, Campus Kiel, Kiel, Germany.*

Alcoholic cirrhosis is the second most common indication for liver transplantation (LTx) in Europe. The recurrence rate ranges 17-34 %, and alcohol recidivism is often difficult to verify. We report on a Budd-Chiari- like syndrome caused by alcohol-induced hepatic Steatosis after LTx.

A 41 year old male underwent LTx due to alcoholic cirrhosis. Compliance and abstinence to alcohol were verified by psychiatric examination over a 1 year period prior to transplantation. 15 months after transplantation, the patient presented with elevated liver function tests and cholestasis. Duplex ultrasound implicated hepatic Steatosis and venous outflow obstruction. Magnetic resonance angiography outlined a Budd-Chiari like syndrome with pseudoobstruction of the hepatic veins and compression of the inferior vena cava by hepatomegaly. The patient was hospitalised, improved liver function test, cholestasis, and hepatomegaly within days. Alcohol consumption was strictly denied. A liver biopsy outlined severe alcoholic steatohepatitis. The suggestion of alcohol recidivism was confirmed by the patient after histological confirmation. Therefore, frequent psychiatric consultation was initiated. The patient remains abstinent and frequently joins a self-help group with excellent liver function test.

There is lack of parameters to verify alcohol recidivism after LTx, despite meticulous psychiatric evaluation and repeated blood alcohol tests. Hepatic steatosis and hepatomegaly are frequently observed in alcohol abuse. The unusual appearance of a Budd-Chiari like syndrome in a patient transplanted for alcoholic cirrhosis might indicate non-compliance, and liver biopsy is mandatory in this setting.

Abstract# 16 Poster Board #-Session: P16-I

VALUE OF DOPPLER ULTRASOUND FOR THE DIAGNOSIS OF HEPATIC VENOUS CONGESTION IN PARAMEDIAN SECTOR OF THE MODIFIED RIGHT-LOBE GRAFT AFTER LIVING DONOR LIVER TRANSPLANTATION: A PROSPECTIVE STUDY OF 39 PATIENTS. So Yeon Kim[1], Kyoung Won Kim[1], Seung Soo Lee[1], Moon-Gyu Lee[1], Sung Gyu Lee[2]. *[1]Department of Radiology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea; [2]Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea.*

Purpose: To assess the value of Doppler US for diagnosis of hepatic venous congestion (HVC) in paramedian sector of modified right-lobe graft (MRLG) during the early (< 24 hours) postoperative period following living donor liver transplantation (LDLT).

Materials & **Methods:** Doppler US examinations were prospectively performed in 39 patients within 24 hours after following LDLT with MRLG, in which middle hepatic vein (MHV) tributaries larger than 5 mm were reconstituted with interposition vein graft. On color Doppler US, numbers of MHV tributaries, their flow velocity and direction, and flow direction of segmental portal vein were evaluated. In addition, parenchymal grayscale echo of corresponding territory were recorded. HVC was diagnosed when there is no Doppler-detectable flow or monophasic waveform of MHV tributaries. Doppler US results were correlated to donors' preoperative CT for sensitivity in detection of MHV tributaries, categorized as being small (< 5 mm) or large (≥ 5 mm). Doppler US results were also correlated to recipients' postoperative CT for diagnostic values for HVC. Ancillary findings were also evaluated.

Results: Doppler US identified 120 of 133 MHV tributaries (90%) and 100 of 103 large MHV tributaries (97%). For detection of HVC, Doppler US overall produced sensitivity, specificity, positive predictive value, and negative predictive value of 90%, 81%, 30%, and 99%, respectively. Regarding large

MHV tributaries, the values were 89%, 93%, 57%, and 99%, respectively. Increase of parenchymal echogenicity in corresponding territory was more frequently seen with HVC group (6/10) than in non-HVC group (9/110). (p = .0002). The reversed flow of MHV tributaries was seen in five, in non-HVC group. The reversed flow of corresponding segmental portal vein was seen in two, in HVC group.
Conclusion: Doppler US provides a reliable noninvasive surveillance for detection of HVC in paramedian sector of the MRLG. This examination is both highly sensitive and highly specific, when there is no Doppler-detectable blood flow of MHV tributaries, commonly associated with increased parenchymal echogenicity of corresponding territory.

Abstract# 17 Poster Board #-Session: P17-I

PARTIAL MIDDLE HEPATIC VEIN INCLUSION IN RIGHT LOBE GRAFTS: A NEW DONOR FRIENDLY APPROACH TO BETTER VENOUS DRAINAGE OF THE ANTERIOR SECTOR. A. S. Soin[1], R. Kakodkar[1], S. Saigal[1], S. Nundy[1]. *[1]Department of Liver Transplantation, Sir Ganga Ram Hospital, New Delhi, India.*

Background: The ideal method to ensure anterior sector outflow in live donor right lobe liver grafts is debatable. A right lobe without the middle hepatic vein (MHV) has inadequate anterior sector outflow. Reconstructed MHV tributaries via extension grafts to cava may not drain well due to small calibre and awkward lie. On the other hand, inclusion of MHV in a right lobe graft may put the donor to risk. We present our experience with partial MHV retrieval with right lobe grafts which minimizes the undrained portion of the graft without compromising donor safety as donor segment IVB drains well via umbilical vein tributaries.
Methods: Out of a total of 70 live donor right lobe transplants (RLDLT) performed until November 2006, MHV retrieval policy was used in the last 50 (study group). Full MHV was included (n=40) if the donor remnant was more than 33% (without caudate) with good drainage of segment IV via the left hepatic vein. Partial MHV (n=6) draining segments IVB and V was retrieved with the graft if remnant volumes were 29-33% without caudate and/or in those with significant seg 4A veins draining into the distal MHV. The partial MHV was extended to the cava using recipient left portal vein or cryopreserved grafts with an end-side seg 8 vein to graft anastomosis in 4 cases. MHV was left with the donor (n=4) in those with lower remnant volumes (1), insignificant or single large anterior sector drainage into MHV (2), GRWR > 1.5 (1).
Results: Overall, 62 out of 70 and 47 out of the last 50 RLDLT recipients are currently well at 1 to 32 months. All 6 patients with partial MHV were documented to have normal Doppler flows intraoperatively and on days 7 and 30 postoperatively. Serum transaminases and INR on days 3 and 7, and hospital stay were similar in the 3 groups of donors. Five out of 6 recipients with partial MHV and 38 out of 40 with full MHV are well. Their postoperative transaminases, INR and hospital stay were similar.
Conclusion: Retrieval of partial MHV for right lobe grafts is a new donor-friendly technique that enables good anterior sector drainage in a right lobe graft with borderline donor remnant and MHV dependent segment IV drainage. This modification allows the benefits of MHV retrieval in right lobe grafts without compromising donor safety.

Abstract# 18 Poster Board #-Session: P18-I

IMPACT OF MHV INCLUSION IN RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION. R. Kakodkar[1], A. S. Soin[1], S. Saigal[1], S. Nundy[1]. *[1]Department of Liver Transplantation, Sir Ganga Ram Hospital, New Delhi, India.*

Introduction: The anterior sector of the right lobe preferentially drains into the middle hepatic vein (MHV). Grafts devoid of this drainage in right lobe live donor liver transplantation (RLLDLT) may not function adequately.
Aim: i) To assess the impact of loss of MHV on donors in RLLDLT. **ii)** To compare the outcomes of recipients of right lobe grafts with and without MHV.
Methods Seventy patients underwent RLLDLT between June 2002 and November 2006. MHV was retrieved for sick recipients and/or those with graft to body weight ratios of < 1 with : good venous drainage of segment 4 into left hepatic vein or preservation of its sole drainage into MHV, and donor liver remnant > 33% of standard liver volume. Out of 70 right lobe grafts, 46 were retrieved with MHV (Group A), and the remaining 24 without MHV (Group B) with reconstruction of > 5mm segment V/VIII veins using vein grafts. Inferior hepatic veins > 5mm were reconstructed in all recipients unless bench flush demonstrated collateral drainage. Parameters compared between the two groups were graft weight, operative time, intra-operative blood loss, prothrombin time (INR), aspartate aminotransferase (AST), bilirubin and hospital stay among the donors; and warm ischaemia time, operative time, clinical sepsis, ICU stay, hospital stay and operative mortality among the recipients.
Results: There was no donor mortality. Mean graft weight ,operative time ,blood loss , hospital stay , day 3 bilirubin and day 7 bilirubin were similar between groups A and B respectively. Day 3 AST (140 vs 95 IU, p=0.01) and INR (1.6 vs 1.3, p=0.001) were significantly higher in MHV donors but the differences became insignificant by day 7 – AST and INR .Among recipients, 8 died (3 in Group A, 5 in Group B, p=0.74). MHV recipients had a shorter mean warm ischaemia time (54 vs 67 min, p=0.003), and lower incidence of clinical sepsis (7 vs 11 patients, p=0.02). The mean operative time (634 vs 715 min), ICU stay (9.8 vs 11.7days), and hospital stay (25 vs 30 days) however, were not significantly different between the two groups.
Conclusion: Donation of right lobe of liver with MHV is safe for the donor. Recipients of right lobe grafts with MHV have significantly lower warm ischemia time and sepsis with a trend towards better early survival, and reduced ICU and hospital stay. The better outcome in MHV recipients is due to better anterior sector drainage rather than higher graft volume.

Abstract# 19 Poster Board #-Session: P19-I

DETERMINANTS OF EARLY AND LATE MORTALITY IN ADULT TO ADULT LIVING DONOR LIVER TRANSPLANTATION. Shridhar Iyer[1], Chao-Long Chen[1], Chih-Chi Wang[1], Shih-Ho Wang[1], Yueh-Wei Liu[1], Chin-Hsiang Yang[1], Chee-Chien Yong[1], Allan Concejero[1], Amornetta Jordan[1], Bruno Jawan[1], Yu-Fan Cheng[1], Hock-Liu Eng[1]. *[1]Liver Transplantation Program, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.*

Introduction The aim of this study is to determine the factors for early and late mortality in adult living donor liver transplantation (LDLT)
Patients and methods 126 adult patients underwent LDLT from January 1999- April 2006. The mean age was 48.02 (±10.37) years. The grafts were : right lobe only (44) , right lobe with anterior sector outflow reconstruction (58) and right lobe including middle hepatic vein (21), left lobe (3), dual (2). The mean MELD score was 14.73(±6.96) and Childs status was A in 15, B in 57, C in 54. The disease etiologies were hepatits B cirrhosis (79), hepatitis C cirrhosis (HCV, 22) and others (25). 51 patitents had hepatocellular carcinoma. The mean follow up was 33.14 (±20.34) months. The survivors (group 1) were compared with early mortality (group 2) and late mortality (group 3). Cox proportional hazards model was used to identify risk factors for early and late mortality
Results There were 7 early (hospital) mortalities and 7 late mortalities. The overall 5 year survival was 87.7%. In the group 1 and 2 there were differences in mean age (years) (47.73 vs 49.67 years), the MELD score (14.39 vs 17.7), blood transfusion (2.1 vs 7.7 litres), cold ischemia (minutes) (78.6 vs 91), warm ischemia (58.32 vs 66.14), anhepatic time (118.68 vs 152.14) and donor age (32 vs 27.57). The disease category, Childs status, graft to recipient weight ratio (GRWR) and graft types were similar in Group 1 and 2. On multivariate analysis the only risk factor for early mortality was blood transfusion (litres) (hazard ratio 1.15, 95% CI 1.06-1.24, P=0.001). Among group 1 and 3 there were differences in mean age (47.7 vs 50.9), MELD (14.4 vs 17.14), blood transfusion (2.2 vs 1.8 litres), donor age (32 vs 42) and disease etiology. There were no differences in GRWR, operative time, cold, warm ischemia and anhepatic time and the graft types. The only determinant of late mortality was HCV disease (hazard ratio 9.78 95% CI 1.82-52.6, p=0.008). On comparing survivals in patients with and without HCC there was no significant difference (p=0.76, log rank test). There was only one recurrence of HCC 1 year post transplantation.
Conclusions Blood transfusions increase the risk of early mortality in LDLT. HCV related liver disease is associated with higher late mortality.

Abstract# 20 Poster Board #-Session: P20-I

INITIAL EXPERIENCES OF LIVING DONOR LIVER TRANSPLANTATION IN CHINA. Xiangcheng Li, Xuehao Wang, Feng Zhang, Cunming Liu, Yuefeng Ma, Feng Cheng, Guoqiang Li. *[1]Liver Transplantation Center, Department of Surgery, Jiangsu Province Hospital, Nanjing Medical University, Nanjing, Jiangsu Province, China.*

Objective: To summarize the initial surgical experiences on LDLT and studies the surgical technique and relevant complications on reconstruction of vessel and biliary duct.

Methods: 60 cases of LDLT have been performed in our Center from Jan 2001 to Nov 2006. In 60 cases, left lobe with middle hepatic veins was harvested in 38 cases, left lateral lobe in 6 cases, right lobe with middle hepatic vein in 2 cases, right lobe without middle hepatic veins in 14 cases. Donor operation was determined on the basis of donor liver volumetry using CT scan and the anatomic analysis of hepatic veins, portal veins and hepatic artery using intraoperative ultrasound. The hepatic parenchyma was transected using ultrasonic aspirator without blood vessel clamping. The isolated graft was perfused in situ through the portal vein branch. The partial liver graft was transplanted into the recipient who underwent total hepatectomy with preservation of the inferior vena cava. The hepatic vein reconstruction was performed in end-to-end fashion or end to side with vena cava after venoplasty. Hepatic artery reconstruction was performed using microsurgical technique. Biliary reconstruction all use duct-to-duct anastomosis with or without T tube.
Result: All the 60 donors are uneventfully after operation and discharged. In the 60 recipients, 1 case needed retransplantation because of hepatic artery thrombosis, one case died of biliary cirrhosis and hepatic failure on the postoperative day 72. The other recipients recovered and were discharged from hospital, whose liver function had returned to normal.
Conclusion: The procedure of LDLT is relatively safe for the donors. It is a helpful option for patients with end stage liver disease. Reconstruction of vessel and bile duct is key procedure in the operation. Comprehending anatomical variations of vascular pre and intra operation and correct surgical management might reduce the incidence of complications.

Abstract# 21 Poster Board #-Session: P21-I

LONG TERM OUTCOME OF THIRTY TWO CASES OF WILSON DISEASE UNDERWENT LIVING DONOR LIVER TRANSPLANTATION. Elena Y. Yoshitoshi[1], Mikiko Ueda[1], Fumitaka Oike[1], Yasutsugu Takada[1], Shinji Uemoto[1], Koichi Tanaka[2]. *[1]Surgery, Kyoto University Hospital, Kyoto, Japan; [2]Transplantation, Institute of Biomedica Research and Innovation, Kobe, Japan.*
Background: Wilson's disease is an autosomal recessive metabolic disease. Liver transplantation has been considered the curative treatment when the pharmacological approach is not effective in patients with end stage liver disease. In countries like Japan, where the deceased donor organ donation is scarce, the living donor liver transplantation has been used to overcome the organ shortage. As the majority of the donors have some kinship relation with the recipient, it is essential to assure the safety to transplant an organ from heterozygous donor. **Patients and methods:** Thirty-two WD patients (15m:17f, mean: 16y, range: 6-40y) that underwent LDLT in the Kyoto University from July, 1990 to May, 2006 were evaluated retrospectively in terms of recurrence. The pre and post operative serum cerulloplasmin and the urinary copper levels were compared. Donor's pre operative serum copper and cerulloplasmin were also analyzed. The survival rate of the recipients was obtained. Four patients who had neuropsychological manifestations were evaluated for their clinical outcome after the LT. **Results:** The mean cerulloplasmin level was 9.67 ± 7.31 mg/dl before and increased to 22.39±6.69mg/dl after the LT (normal range=18-37mg/dl). The mean urinary copper level was 2,704 ± 2,800 µg/day before and decreased to 81 ± 27.01 µg/day after the LT (NR=14-63 µg/day). The mean serum copper was 72.89±54.7 and increased to 75.43±102.06mg/dl (NR=78-131mg/dl). Six patients have died with an overall five-year survival rate of 82.5% and ten-year survival rate of 74.3%. The improvement of neuropsychological symptoms after the LDLT was good in one with mild symptoms and bad in one patient with severe neurological symptoms. Two patients presented complications (central pontine myelinolysis and early death) which lead to the disablement of neurological evaluation post LDLT. None of the patients showed symptoms of recurrence of the WD. **Conclusion:** WD is a good indication for LDLT. In our series using living related donors, we obtained a good improvement in the copper metabolism without any evidence of recurrence of WD after the LT. The neuropsychological manifestations improved in a patient mildly affected, but not in the severely affected patient.

Abstract# 22 Poster Board #-Session: P22-I

THE USEFULNESS OF INTRA-OPERATIVE CINE-PORTOGRAM TO FIND SPONTANEOUS PORTOSYSTEMIC COLLATERALS UNDETECTED BY INTRAOPERATIVE DOPPLER ULTRASONOGRAPHY. Deok-Bog Moon[1], SungGyu Lee[1], Shin Hwang[1], ChulSoo Ahn[1], KiHun Kim[1], GiWon Song[1], DongHwan Jung[1], JeHo Ryu[1], HyoJun Lee[1], JeongIk Park[1], KwangMin Park[1], HeaSeon Ha[1], JungJa Hong[1]. *[1]Division of Hepatobiliary Surgery & Liver Transplantation, Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea.*
(Background & Purpose) An adequate portal inflow is essential to the partial liver graft's regeneration after adult living donor liver transplantation (**LDLT**). If the recipient had large spontaneous portosystemic collaterals associated with or without portal vein(**PV**) stenosis, surgical interruption of large collaterals and/or correction of **PV** stenosis must be essential to prevent "portal flow steal phenomenon" postoperatively. Intraoperative Doppler ultrasound (**IOUS**) estimating the adequacy of portal inflow to the graft has a limitation to identify the correct anatomical and hemodynamic informations of protosystemic collaterals. (Method) We first introduced intraoperative cine-portogram(**IOCP**) in order to overcome the limitation of **IOUS**. The role of **IOCP** is indispensable to monitor the completeness of surgical interruption of large spontaneous collaterals and the correct placement of stent for stenotic **PV**. (Results) In 156 adult **LDLT**s from March 2003 to February 2004, the missed spontaneous portysystemic large collaterals were precisely identified by **IOCP** and successfully ligated in 5. Three of them having stenotic **PV**(< 1cm in diameter) were effectively treated by the placement of intraoperative **PV** stenting. (Conclusion) **IOCP** seems to be an effective tool for precise visualization of the significant spontaneous portosystemic collaterals that are usually not detected by **IOUS,** and for monitoring the completeness of collateral ligation.

Abstract# 23 Poster Board #-Session: P23-I

DONOR MORBIDITY AFTER LIVE LIVER DONATION: AN INEVITABLE CONSEQUENCE OF A NECESSARY EVIL. Hatem Khalaf, Mohammed Al-Sofayan, Mohammed Al-Sagheir, Yasser El-Sheikh, Hamad Al-Bahili, Mohammed Al-Sebayel. *[1]Liver Transplantation, King Faisal Specialist Hospital, Riyadh, Saudi Arabia.*
Purpose: To objectively evaluate the donor outcome after live donor hepatectomy.
Patients and Methods: Between November 2002 and August 2006, a total of 45 procedures were performed (35 right, 9 left, and one aborted after surgical incision). Clavien classification was used to record surgical complication as follows; Grade I, alterations from the ideal postoperative course not requiring specialized pharmacological nor surgical treatment; Grade II, complications requiring specialized pharmacological treatment, blood transfusion or total parentral nutrition; Grade III-a, complications requiring invasive intervention without general anesthesia; Grade III-b, requires general anesthesia; Grade IV-a, single organ dysfunction; Grade IV-b, multiorgan dysfunction; Grade V, death; The suffix ***d*** indicates disability. Grades I and II were considered minor complications, while Grades III-V and any lasting disability were considered as serious complication.
Results: Male/female ratio was 34/11; median age was 25 years (range, 18-42); median hospital stay was 6 days (range, 4-14); and only 3 donors required intra-operative blood transfusion. After a median follow-up period of 529 days (range, 8-1354), a total of 28 morbidities were encountered in 17 donors (37.8%); out of which 9 donors (20%) had serious complications. Out of the 28 donor morbidities; 18 were Grade I, 3 were grade III-a, 5 were grade III-b, and 2 were grade IV-a. Grades IV-b and V (death) were not encountered in our experience. Serious complications included; sever liver dysfunction due to small remaining liver volume in 2 donors; bile leak in one donor treated with ERCP and stenting; biloma in one donor treated with percutaneous drainage, incisional hernia in 2 donors treated with laparoscopic mesh repair; scar revision in 3 donor, skin dehiscence in one patient treated with secondary closure. Minor complications included; pressure induced alopecia areata in 3 donors, neurapraxia of the right arm in one donor, minor depression in 3 donors, abdominal discomfort in 5 donors, incisional pain in 4 donors, and unsatisfactory in 2 donors.
Conclusions: In our experience donor hepatectomy is not an entirely safe procedure; therefore, extreme care should be always given by the transplant teams to live donors to avoid any distressing morbidity or even, the less likely but more catastrophic, donor mortality.

Abstract# 24 Poster Board #-Session: P24-I

ADULT LIVING DONOR LIVER TRANSPLANT: THE BARCELONA CLINIC EXPERIENCE. Constantino Fondevila, Jose Fuster, Ramon Charco, Joana Ferrer, Amelia J. Hessheimer, David Calatayud, Josep Marti, Josep M. Llovet, Alberto Sanchez-Fueyo, Miguel Navasa, Antonio Rimola, Juan C. Garcia-Valdecasas. *[1]Surgery, Hospital Clinic. University of Barcelona, Barcelona, Spain.*

The aim of this study is to present the results of the adult living donor liver transplant (ALDLT) program at our major European transplant center.

Patients and methods. Between March 2000 and March 2006, 51 ALDLT were performed at the Barcelona Clinic using the right hepatic lobe. They represent 11.4% of the total patients transplanted during the same period. In 14 patients, the indication was expanded for hepatocellular carcinoma (n=11) or advanced age (n=3) following the inclusion criteria of our institution's protocol. The indications of the 37 remaining patients were end-stage liver disease (n= 31), HCC (n=5) and familial amiloidotic polineuropathy (n=1), with a mean time on the waiting list of 3.9 months (r= 1-8). Globally, HCV infection was present in 65% and HCC in 37% of the recipients. Thirty seven percent of recipients were Child-Pugh C, and 22% had a MELD score > 20.

Results. The median transplanted graft weight was 758 g (range 545-1045), with a median graft-weight-to-body-weight ratio of 1.02 (range 0.75-1.83). All of the recipients presented adequate posttransplant graft function, except for one who was retransplanted due to hepatic artery intimal disection after completion of the anastomosis. The median follow-up of the whole series was 54 months. One- and three-year actuarial survivals are 90 and 74% (recipient) and 88 and 72% (graft) respectively. Twelve patients (23%) are dead, of whom one had HCC regional recurrence and three recurrent HCV cirrhosis. Surgical complications were mainly biliary: 22 leakages (44%) and 19 anastomotic stenoses (38%). Leakages were primarily treated by surgery (16/22) or percutaneous drain placement (5/22). Interventional radiology consisting in balloon dilatation or stent placement resolved the majority of anastomotic stenoses (17/19).

Conclusion. Aside from a higher incidence of biliary complications, the results from ALDLT are similar to those from deceased donor liver transplant. ALDLT performed by experienced surgeons is a valid option to increase the donor pool and decrease dropout on the liver transplant waiting list.

Abstract# 25 Poster Board #-Session: P25-I

HYPOPHOSPHATEMIA AFTER LIVIE DONOR HEPATECTOMY. Hae Won Lee[1], Kyung-Suk Suh[1], Woo Young Shin[1], Eung-Ho Cho[1], Jai Young Cho[1], Nam-Joon Yi[1], Jung-Hwan Yoon[2], Hee Chul Yu[3], Baik Hwan Cho[3], Kuhn Uk Lee[1]. *[1]Department of Surgery, Seoul National University College of Medicine, Seoul, Republic of Korea; [2]Department of Internal Medicine, Seoul National University College of Medicine, Seoul, Republic of Korea; [3]Department of Surgery, Chonbuk National University Medical School, Jeonbuk, Republic of Korea.*

Hypophosphatemia develops frequently after live donor hepatectomy, but its clinical significance has not been yet clarified. The purpose of this study was to investigate the correlation between postoperative recovery and hypophosphatemia after donor hepatectomy. Eighty-eight live liver donors were enrolled, who had undergone right hemihepatectomy between Jan 2002 and Dec 2005. Sixty-one patients were male and twenty-seven were female. The mean age of patients was 31.0±0.9 (±standard error of mean) years. According to the severity of postoperative hypophosphatemia, we divided donors into 3 groups; mild (1.5-2.5 mg/dL, n=30), moderate (1.0-1.5 mg/dL, n=41), and severe (<1.0 mg/dL, n=17) groups and compared the incidence of complication among these groups. Additionally, we investigated the correlation between the lowest postoperative phosphorus level and several liver function variables; bilirubin, alanine aminotransferase (ALT), alkaline phosphatase (ALP), and gamma glutamyl transpeptidase (*r*-GT). All donors developed hypophospatemia postoperatively and the mean value of the lowest phosphorus level was 1.4±0.04 mg/dL, yet no significant difference of the incidence of postoperative complication was observed among hypophosphatemia groups. The lowest phosphorus level did not significantly correlate with the level of postoperative ALT or *r*-GT. However, it positively correlated with the highest postoperative bilirubin level with significance (p=0.012). In addition, it negatively correlated with the degree of early postoperative increase of ALP (p=0.014). In conclusion, Hypophosphatemia after live donor right hemihepatectomy was frequent, yet it was unlikely to be related to the postoperative morbidity. Severe hypophosphatemia reduced postoperative hyperbilirubinemia and induced early increase of ALP, which may indicate hypophosphatemia may be a biomarker of early liver regeneration after donor hepatectomy.

Abstract# 26 Poster Board #-Session: P26-I

EXPERIENCE OF LIVE DONOR LIVER TRANSPLANT FROM A DEVELOPING COUNTRY. Vivek Vij[1], Ajitab Srivastva[1], Manav Wadhawan[1], Subhash Gupta[1]. *[1]Liver Transplant and Surgical Gastroenterology, Indraprastha Apollo Hospital, New Delhi, Delhi, India.*

Introduction

Lack of cadaveric organs and increasing experience in LDLT in Asian countries has stimulated the interest in live donor transplant in India. Initial experience has included many technical refinements along with improvement in overall management of these patients. We present our experience of 35 live donor liver transplants.

Patients and Methods

Thirty-five patients underwent liver transplant from January 2005 till November 2006. There were 24 males and 11 females with mean age 46 years. 31 (88%) underwent right lobe liver transplant and 4 underwent left lobe transplant. 19/31 (61.3%) of the right lobes were with harvested with Middle Hepatic vein (extended right lobe graft) and 12/31 (38.7%) without MHV (Modified right lobe graft). Primary disease was HCV in 10 (28.6%), HBV without HCC in 3 (8.5%), HBV with HCC in 5 (14.3%), Alcohol related in 7 (20%), Cryptogenic in 8 (22.9%) and Wilson's disease in 2 patients.

Results

There was no donor mortality. One of the donors had prolonged bile leak, which was managed with percutaneous drainage. Three recipients died in the hospital (8.5%). The cause of death was bacterial sepsis, fungal sepsis and primary nonfunction. The mean hospital stay was 23 days in recipients of modified right lobe graft and 17 days in recipients of extended right lobe graft. Morbidity was seen in 14 patients (40%). Sepsis was the most common complication overall, followed by bile leak which was managed by conversion to hepaticojejunostomy in 4 patients. Extended right lobe grafts resulted in significantly shorter hospital stay as compared to modified right lobe grafts. There was one late death due to intracerebral bleed. The Mean Follow up was 10 months.

Conclusion

Living donor liver transplant has acceptable results and currently is the only option for end stage liver disease in India.

Abstract# 27 Poster Board #-Session: P27-I

SURGICAL EXPERTISE WITH LIVER RESECTION FOR TUMOR IS ENOUGH TO PERFORM LIVE DONOR SURGERY? COMPARATIVE ANALYSIS OF THE LIVE LIVER DONATION RISK USING A SEVERITY GRADING SYSTEM. Lucio F. Pacheco-Moreira[1], Jefferson Alves[1], Marcelo Enne[1], Glauber Gouvea[1], Alexandre Cerqueira[1], Elizabeth Balbi[1], Rodrigo C. Amil[1], José Manuel Martinho[1]. *[1]Liver Transplantation Unit, Bonsucesso General Hospital, Rio de Janeiro, Brazil.*

Background/Aim: In all living liver donor (LLD) transplant centers, the mortality and morbidity of donors remain a crucial point to be considered. An accurate definition of donor morbidity has not been established. Clavien proposed a classification to grade negative outcomes in surgery. The aim of this study is to compare quantitatively the morbidity between the first 31 LLD and the last 31 patients, submitted to this surgery in a center with expertise in performing hepatectomy for tumor.

Methods: From Dec01 to Nov06, 62 patients underwent a liver donation, 32 were submitted to right lobectomy and 29 patients underwent left lateral segmentectomy. Data were obtained retrospectively through review of the medical records. The patients were included into two groups, group 1: the first 31 patients (from Dec/01 to Apr/05) and, group 2: the last 31 patients (from Apr/05 to now). A modification of the Clavien classification was used to grade the severity of complications. We investigated whether surgical expertise with LLD was responsible for any morbidity differences between both groups. A chi-square test was used to compare the morbidity. Significance was established when p was < 0,05.

Results: There was no donor mortality in this series. 25.8% of all LLD presented at least one complication, 32.3% of group 1 and, 16.1% of group 2 donors (p>0,05). When only more severe complications was analyzed (grade 2/3), 8,1% of donors presented complications. Group 1 presented 12.9% of grade 2/3 complications and, group 2 presented only 3.2%(p>0.05). Maybe these differences were not significant due to the small number of included patients. When graded by severity, we could observe that complications in group 1 were more severe than complications in group 2.

Discussion: Living liver donation represents a peculiar procedure, even in a center with great experience in liver resection. When only more severe complications are analyzed, there is a tendency to happen more frequently in donors submitted to liver resection, when the liver transplantation team was acquiring experience in this surgery.

Abstract# 28 Poster Board #-Session: P28-I

AUXILIARY LIVER TRANSPLANTATION USING A LAPAROSCOPICALLY-HARVESTED LEFT LATERAL SECTION GRAFT IN ADULTS: A NEW APPROACH TO MINIMIZE DONOR'S RISK AND TO OVERCOME RECIPIENT'S SMALL FOR SIZE SYNDROME.

Olivier Scatton[1], Pierre-Philippe Massault[1], Bruto Randone[1], Luciana Haddad[1], Denis Bernard[1], Yvon Calmus[1], Olivier Soubrane[1]. *[1]Liver Department, Cochin Hospital, Paris, France.*

Introduction: Living donation has been developed to alleviate organ shortage. In living donors, harvesting the left lateral section, especially through laparoscopy, is associated with significantly less mortality and morbidity rates as compared to right hepatectomy. However, using a left lateral section in adult recipients most often leads to small for size syndrome (SSS). Auxiliary partial orthotopic liver transplantation (APOLT) using a left lateral section could be an alternative to prevent this complication.

Case report: we describe herein the first APOLT performed in a cirrhotic patient using a left lateral section graft which was harvested through laparoscopy. The recipient was a 61 yrs old male with alcoholic cirrhosis, MELD score 19, Child-Pugh C10. Considering the rarity of his blood group and severity of cirrhosis, living donation was proposed. The donor was his 32 yrs old daughter. Preoperative donor's left graft volume was estimated 305 cc at CT-scan and biliary anatomy demonstrated left bile duct duplication. There was no steatosis at liver histology. The recipient's left lateral sectionectomy was performed and the donor's left lateral section was harvested through laparoscopy. The graft was orthotopically implanted and corresponded to 0.45% of recipient's body weight. The postoperative course in the donor was uneventful and she was discharged 5 days after surgery. The recipient developed large amount of ascites during several weeks. The graft volume was estimated at 650cc and 1050 cc at post operative day 7 and 30, respectively. The recipient's hospitalisation stay was 2 months. Normal liver function was achieved after 1 month with a prothrombin rate of 80 % and total bilirubin level at 29 µmol/L. A liver graft biopsy was taken at po day 7 and no SSS was observed.

Conclusion: APOLT using a laparoscopically-harvested left lateral section is a new solution allowing both minimizing donor's risk and overcoming SSS in the recipient. We suggest that APOLT could be applied not only for fulminant hepatitis but also in case of chronic liver disease.

Abstract# 29 Poster Board #-Session: P29-I

ONE SUCCESSFUL ADULT-TO-ADULT LIVING DONOR LIVER TRANSPLANTATION USING DUAL GRAFTS INCLUDING RIGHT THREE SEGMENTS AND LEFT LOBE.

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Objective The growing gap between the number of patients waiting for transplantation and available organs has continued to be the number one issue facing the transplant community. The major limitation of adult-to-adult living donor liver transplantation (A-A LDLT) is the adequacy of the graft size. But donor safety is the major concern in LDLT. **Methods** One patient with liver cirrhos after C hepatitis and hepatic metastatic carcinoma from right hemicolon was succfussfully performed adult-to-adult living donor liver transplantation using dual grafts in our centre. One donor's graft is right three segments(V, VI, VII in Couinaud's unit) from his old brother ,the other is left external lobe from his wife .The carcinoma in right hemicolon was resected and ileum was anastomosed with transverse colon by end-to-side mode under nontumor principles. **Results** Both recipient and two donors display good liver function after operation .The examination shows the good blood supply in VIII segment in his old brother. There was no serious complications in donors. **Conclusion** The critical issue of LDLT is donor morbidity. Dual grafts from two living donors can help to alleviate the problem of small-for-size grafts and guarantee the safety of the donor. But the complicated surgical techniques make a great challenge for liver transplant surgeons.

[**Key words**] Living donor Dual grafts Adult-to-Adult Living donor liver transplantation.

Abstract# 30 Poster Board #-Session: P30-I

EASY MODEL FOR TRAINING MICROSURGICAL TECHNIQUE AND INITIAL RESULTS OF LOUPES ONLY HEPATIC ARTERY RECONSTRUCTION IN LIVING DONOR LIVER TRANSPLANTATION. FROM THE LIVER TRANSPLANT SURGEON POINT OF VIEW.

Marcelo Enne[1], Lucio Pacheco-Moreira[1], Alexandre Cerqueira[1], Rodrigo Amil[1], Jefferson Alves[1], José Manoel Martinho[1,2]. *[1]Hepatobiliary Surgery - Liver Transplantation, Hospital Geral de Bonsucesso, Rio de Janeiro, RJ, Brazil; [2]Hospital Universitário Antônio Pedro - UFF.*

Background. Microsurgical hepatic artery (HA) reconstruction has become the essential technique in LDLT, especially for pediatric patients. But in many transplant centers are still linked with microsurgery experts, with microscope help, who are engaged in the liver transplant program only to perform the HA anastomoses.Despite the vast indications for microsurgery, even adult's liver transplantation surgeons deals with a low incidence of patients in need for these techniques. Live animals have been used as a microsurgery training tool model, however costs and hardship are major concerns.

Aim. The aim of the study is to describe our microsurgical training in HA reconstruction, before the beggining of our LDLT program, and the HA course of the first recipients in a starting adult and pediatric LDLT program at a developing country.

Material and Methods. Microsurgical training: Legs of fresh slaughtered chickens were used. Divided leg arteries were used for end-to-end anastomoses with interrupted 9-0 or 10-0 monofilament. The anastomoses were performed under 10X microscope or 6X loupe magnification.

Patients: From March 2002 to October 2006 we performed a total of 203 liver transplantations. Among these, 57 cases were LDLT under elective situation, 27 pediatrics and 30 adults. For children median weight was 11.9kg. Reconstructions were end-to-end 8-0 or 9-0 monofilament using a 6X surgical loupe. Color Doppler ultrasonography were done daily in the first PO week and once a week until patient discharge or clinical and laboratory suspicion of HA complication.

Results. HAT occurred in 2 patients(3,5%) of 57 LDLT, with the incidence of 1/30(3,3%) and 1/27(3,7%) respectively in adults and pediatrics patients. Both were successfully retransplanted.

Conclusion. Microsurgery training is important to lead the surgeon to improve his technique. Although chicken leg is a nonliving model, we feel that for surgeon habituated with adults' HA reconstruction, this model provides a reasonable progression to small live vessel repair, as occurs in LDLT. HA reconstruction with 6X Loupe magnification can achieve the same result, without significant difference, between adults and children in LDLT.

Abstract# 31 Poster Board #-Session: P31-I

RIGHT POSTERIOR SEGMENTECTOMY OF THE LIVING DONOR WITH A LEFT-SIDED GALLBLADDER FOR ADULT DUAL LIVING DONOR LIVER TRANSPLANTATION.

Ki-Hun Kim[1], Sung-Gyu Lee[1], Shin Hwang[1], Dong-Hwan Jung[1], Bum-Soo Kim[1], Jung-Ik Park[1], Kyung-Hoon Koh[1], Bum-Sik Shin[1], Jung-Ja Hong[1], Eun-Bok Lee[1]. *[1]Surgery, Asan Medical Center, Ulsan University, Seoul, Korea.*

A left-sided gallbladder usually means that the gallbladder is located to the left side of the round ligament without situs inversus viscerum. Additionally, the middle hepatic vein should run to the right of the gallbladder and the round ligamentitself should originate from the left portal vein to meet its definition.(*ref: Hwang et al, Liver Transpl 2004;10:141-6*) 45-year-old female cousin of the recipient was one of the living donors. The CT sacn showed the presence of a left-sided gallbladder with type IV portal vein anomaly during preoperative evaluation of the donor. Her body weight and height were 79.7 kg and 165 cm, respectively. There was no fatty change in the liver biopsy. The right posterior segment was estimated as 510 ml in CT volumetry, but it did not seem to be enough for 68 kg recipient with UNOS status IIA. We decided to perform dual LDLT using right posterior segment and left lobe. After laparotomy, we confirmed the anomaly of a left-sided gallbladder. The intraoperative cholangiogram showed classical anatomy

of the bile duct. We dissected and encircled right posterior portal vein and hepatic artery with vessel loops after mobilization of right lobe. The hepatic parenchyma was divided using CUSA along the left side of the right hepatic vein and then the right posterior bile duct was cut using our method of the radio-opaque rubber band tagging. The donor and recipient have recovered without any problem.

Abstract# 32 Poster Board #-Session: P32-I

TOLERANCE OF SKIN TRANSPLANTATION INDUCED BY SYNGENIC HEMATOPOIETIC STEM CELL TRANSPLANTATION. Wang Lin, Zhao Qingchuan, Tao Kaishan, Yang Yanling, An Jiaze, He Yong, Dou Kefeng. [1]*Center of Organ Transplantation, Xijing Hospital, Fourth Military Medical University, Xian, China.*

Objective To investigate the mechanism of tolerance of organ transplantation following syngenic HSCT. **Method** The mouse model was constructed by allogenic skin transplantation, and FK506 was injected into peritoneal cavity 2 weeks later. 3 weeks later,the treated group was exposed to total body irradiation and accepted the syngenic bone marrow transplantation from GFP C57BL/6 transgenic mice. The viability of chimeric mice and graft were observed constantly. The GFP and Treg expression in peripheral blood was analyzed by FACS; The specification of induced tolerance was detected by MLR, and IL-2 IL-10 in serum by ELISA. **Result** The survival time of mouse from treated group was 29.14±4.92d, significantly longer than the control group, $p<0.05$. The expression of GFP following BMT was 82% (4w) and 91%(6w) respectively. The outcome of MLR for the treated group had significant difference towards the control. The IL-2 was significantly lower and the IL-10 and Treg was higher, $p<0.05$. **Conclusion** Syngenic HSCT combined with immunosuppressive treatment may induce tolerance of skin transplantation, Th2 polarization and the up-regulation of Treg is supposed to be the chief mechanism.

Abstract# 33 Poster Board #-Session: P33-I

MIGRATION TO STEROID-FREE IMMUNOSUPPRESSION: THE IMPACT ON THE INCIDENCE OF REJECTION AND CMV INFECTION. Greg J. McKenna[1], Richard Ruiz[1], Edmund Q. Sanchez[1], Srinath Chinnakotla[1], Henry B. Randall[1], Nicholas Onaca[1], Tariq Khan[1], Dmitriy Nikitin[1], Robert M. Goldstein[1], Marlon F. Levy[1], Goran B. Klintmalm[1]. [1]*Transplant, Baylor Regional Transplant Institute, Dallas, TX, USA.*

INTRODUCTION

Current trends in liver transplant (OLT) are toward using steroid-free immunosuppression protocols (Calcineurin-Inhibitor, MMF/Sirolimus, Zenapax). Rejection (ACR) and CMV incidence are affected by the overall level of immunosuppression. We examine the impact of our change to a steroid-free regimen on ACR and CMV incidence comparing it to a similar time period one year earlier when a steroid-based protocol was used.

MATERIAL AND METHODS

Group I (08/01/05-01/31/06) included all OLT patients in the first 6 months post change to a steroid-free immunosuppression protocol. Group II (08/01/04-01/31/05) is a cohort from the same time period one year prior when a steroid-based protocol was used. The groups were compared evaluating ACR incidence, time to ACR, CMV incidence and peak CMV-DNA level. The cohort was prospectively followed for 6 months post transplant.

RESULTS

There were no differences in patient demographics or liver disease etiology for Group I (84 patients, 88 OLT) compared to Group II (89 patients, 93 OLT). The incidence of ACR in the steroid-free Group I was 32.1% compared to 24.7% in Group II. There was no difference in the distribution of grade of ACR (A1-ACR 30% vs 36% respectively) or the incidence of second episodes of ACR and steroid-resistant rejection requiring antibody therapy. The time to first episode of ACR was significantly longer in the steroid-free Group I vs Group II (Mean/Median time 60.9d/55d vs 35.5d/16.5d, $p=0.04$).

There was no difference in the CMV incidence between Group I and II (24.7% vs 25%). However the peak CMV-DNA level was higher in Group I (Mean/Median level 40850/17000 copies vs 20493/3940 copies, $p=0.04$). In Group I, 47.6% of CMV patients also had an episode ACR compared to 31.8% in Group II.

CONCLUSION

The use of steroid-free protocols results in a slight increase in ACR incidence, and these episodes occur significantly later from the time of transplant. The incidence of CMV infection is unchanged using a steroid-free protocol, however those infected have a significantly higher CMV viremia level, and are more commonly associated with a prior ACR episode. This overall higher viremia level and the association with ACR suggests ACR treatment may be the cause, necessitating increased CMV prophylaxis in these cases.

Abstract# 34 Poster Board #-Session: P34-I

CALCINEURIN INHIBITOR-FREE IMMUNOSUPPRESSIVE PROTOCOL WITH BASILIXIMAB INDUCTION AND EVEROLIMUS IN DE NOVO LIVER TRANSPLANT RECIPIENTS. Michele Masetti[1], Roberto Montalti[1], Gianluca Rompianesi[1], Fabrizio Di Benedetto[1], Nicola De Ruvo[1], Antonio Romano[1], Gian Piero Guerrini[1], Giorgio E. Gerunda[1]. [1]*Liver and Multivisceral Transplantation, University of Modena, Modena, Italy.*

Introduction. The use of Everolimus (Ev) as the main immunosuppressant in a calcineurin inhibitor-free regimen in the early post-operative period after liver transplantation (LT) is here reported.**Methods.** This is a single center, prospective randomized trial aim at demonstrate the safety and efficacy of immunosuppressive protocol consisting of a short course (30 days) of Cyclosporine (Cs) associated to Ev from the 12 post-operative day (group Ev) vs Cs (group Cs) immunosuppressant protocol with equal basiliximab induction in de novo liver transplant recipients. Ev was implemented at days 12, target Cs trough blood levels were between 50 and 150 ng/ml to the end of the first month when Cs was stopped (gr. Ev) while Cs trough blood levels were maintained between 50 and 150 ng/ml in the first twelve post-operative days, between 200 and 300 ng/ml up to the end of the first month and between 150 and 250 ng/ml from months 2 to months 6. Steroids was given as bolus of 500 mg during the anhepatic phase and then tapered beginning at 20 mg/day on day 1. Patients were weaned off prednisone by 5 weeks after surgery.**Results.** Between August and December 2006 11 LT were performed and recipient were randomized to 1 of 2 groups on a 3:1 computer based ratio. There was no difference in demographics between the two groups as well as pre-LT MELD score. The mean follow-up was of 2.1 months (0.6). There were no complications from the basiliximab infusion. Eight out of 11 patients (72.7%) were enrolled in gr. Ev, two patients (25%) experienced biopsy-proven rejection episodes; while 2 of the 3 patients in gr Cs (66.6%) experienced rejection. These rejection episodes were all mild and responded to 3 steroid boluses; no grafts were lost to rejection. Ev was well tolerated, there were no complications attributed to Ev. Specifically, there were no thrombotic events or wound complications. Mild thrombocytopenia or leukopenia occur in 3 out of eight (37.5%) patients in gr.E. **Conclusion.** These preliminary results using Ev in novo LT recipient show that it is safe and suggest that it provides for adequate immunosuppression with minimal risk of rejection. The long term impact of this immunosuppressive protocol on patients and graft survival needs longer follow up.

Abstract# 35 Poster Board #-Session: P35-I

THE EFFECT OF INDUCTION THERAPY WITH BASILIXIMAB ON ACUTE REJECTION IN LIVING DONOR LIVER TRANSPLANTATION (LDLT) (RETROSPECTIVE STUDY). Wael Safwat[1], Rasha Refaie[1], Ibrahim Mostafa[1], Medhat Abdel-Aal[1], Magda El-Monieri[1], Mahmoud El-Metient[1], Mohamed Fathy[1]. [1]*Liver Transplantation Unit, Wadi Al Neel Hospital, Cairo, Egypt.*

BACKGROUND: Episodes of acute cellular rejection (ACR) is an important complications of liver transplantation. Basiliximab, a high-affinity chimeric monoclonal antibody functions as an immunosuppressive agent, specifically binding to and blocking the interleukin-2 receptor on the surface of activated T-lymphocytes. Studies showed that Basiliximab reduces the incidence of ACR with no clinically relevant safety or tolerability concerns, but the effect in LDLT is not well studied and is suspected to have a role in HCV recurrence. **METHODS:**We did a retrospective study to determine the effect of using induction therapy with Basiliximab on the incidence of ACR in LDLT. In this study 67 patients were included from October 2001 till November 2006. Patients who had ACR were all proven histologically. All our patients received corticosteroids as part of their immunosuppressive therapy in addition to either tacrolimus or ciclosporine (Neoral). We divided the 67 patients into 2 groups; group I: patients who received Basiliximab and group II patients who did not receive Basiliximab. **RESULTS:** From the 67 transplanted patients 18 patients received Basiliximab from which 9 (13.4%) patients had histologically proven ACR, only 1 patient had severe rejection and needed corticosteroid bolus which resolved, the other 8 patients had mild to moderate rejection who all resolved by increasing the immunosuppressive dose or changing the type of immunosuppressive drug used. In group I in

which Basiliximab was used, ACR occurred in 11% of that group, while in Group II (no Basiliximab) ACR occurred in 14.3%% of that group (P> 0.05) non-significant. In patients who had ACR 22.2%% of patients received induction therapy with Basiliximab, meanwhile in the no-rejection group 27.6% of patients received Basiliximab (P>0.05) non significant.
CONCLUSION: The rate of ACR in LDLT in our series is 13.4% all of which resolved with modulation of immunosuppression. The rate of acute rejection episodes is not affected by the use of Basiliximab as induction therapy in cases of LDLT.

Abstract# 36 Poster Board #-Session: P36-I

SAFETY AND EFFICACY OF MYCOPHENOLATE MOFETIL AS MONOTHERAPY FOR ADULT LIVING DONOR LIVER TRANSPLANT RECIPIENTS. Eung-Ho Cho[1], Kyung-Suk Suh[1], Woo Young Shin[1], Hae Won Lee[1], Jai Young Cho[1], Nam-Joon Yi[1], Won Kim[2], Jung-Hwan Yoon[2], Kuhn Uk Lee[1]. *[1]Department of Surgery, Seoul National University, College of Medicine, Seoul, Republic of Korea; [2]Department of Internal Medicine, Seoul National University, College of Medicine, Seoul, Republic of Korea.*
Background Mycophenolate Mofetil (MMF) monotherapy with complete Calcineurine inhibitor (CNI) withdrawal after liver transplantation has been attempted with variable results. In this study, our goal was to evaluate the safety and efficacy of MMF monotherapy in liver transplant recipients and CNI -related side effects.
Methods Between February 1999 and December 2004, 172 cases of adult living donor liver transplantations (LDLT) were carried out with CNI as a first-line immunosuppressive agent. CNI was withdrawn and MMF monotherapy used instead in 11 patients (6.4%) who had chronic renal dysfunction (serum creatinine > 1.3) or post transplantation diabetes mellitus.
Results MMF monotherapy was started 22.4 ± 8.8 months (19 ~ 45) after transplantation. The mean maintenance MMF dose was 1.31 ± 0.4 g (range: 0.5 ~ 2 g) /day. After a median follow-up of 27.9 (13~46) months on MMF monotherapy, abnormal liver function was noted in three patients (27.3%). Low-dose tacrolimus (0.5~1 mg/day) was added to the therapy of these patients and liver function improved. There was no case of severe rejection. Leukocytopenia occurred in two patients (18.2%); however, the counts returned to normal after MMF dose reduction. There were no severe GI problems.
Conclusions MMF monotherapy may be used in stable LDLT recipients with a low incidence of MMF-related adverse effects. If abnormal liver function occurs during monotherapy, early detection and addition of low dose tacrolimus can reverse liver function disturbances in these patients.

Abstract# 37 Poster Board #-Session: P37-I

DIAGNOSIS AND TREATMENT OF ACUTE REJECTION FOLLOWING LIVER TRANSPLANTATION. Wang Lin, Zhao Qing-Chuan, Tao Kai-Shan, Yang Yan-Ling, An Jia-Ze, He Yong, Dou Ke-Feng. *[1]Department of Hepatobiliary Surgery, Center of Organ Transplantation, Xijing Hospital, Fourth Military Medical University, Xian, China.*
AIM To summarize the new manifestation of acute rejection (AR) following liver transplantation and discuss the diagnosis and treatment of AR. **METHODS** A total of 106 cases with liver transplantation in our center were retrospectively analyzed, with the purpose of investigating the pathologic change and clinical manifestation of AR, and discussing the diagnosis and treatment of it. **RESULTS** Among the 106 cases, 17 were regarded as AR after liver transplantation, the incidence of AR was only 16%. However, all the 17 cases which had pathologic change were lack of typical clinical manifestation and biochemical change. **CONCLUSION** With the use of superactive immunosuppressive drugs, AR following liver transplantation was lack of typical clinical manifestation, therefore we should notice the importance of the diagnosis and treatment of AR.

Abstract# 38 Poster Board #-Session: P38-I

DE NOVO USE OF mTOR INHIBITOR EVEROLIMUS IN COMBINATION WITH MYCOPHANOLATE SODIUM OR MYCOPHENOLATE MOPHETIL AND EARLY REPLACEMENT OF CNIs AFTER ORTHOTOPIC LIVER TRANSPLANTATION BY THIS COMBINATION. Efstathios A. Antoniou[1], Dimitris A. DIimitroulis[1], Alkiviadis J. Kostakis[1]. *[1]2nd Department of Propedeutic Surgery, School of Medicine, University of Athens, Athens, Greece.*
Introduction. We present the results from our new liver transplant centre using the combination treatment of everolimus (mammalian target of rapamycin –mTOR- inhibitor) and either mycopfenolate mophetil (MMF) or mycophanolate sodium (MPS), as de novo anti-rejection treatment or early replacement of calcineurin inhibitors (CNIs) -cyclosporin A (CyA) or tacrolimus (FK)- after orthotopic liver transplantation (OLTx).
Methods. Two out of our first three OLTx recipients, received de novo ant-irejection therapy with everolimus (1.5mg bid), MPS (720mg bid) and prednisolone (10mg bid). Both patient had advanced malignancy: one (No2 OLTx) had HBV cirrhosis and three lesions of HCC, with increased a-FP (>600), the other one (No3) had extended epithelioid haemangiendothelioma, with acute onset of liver failure and renal impairment. Two other, had an early conversion from CyA or FK to everolimus, plus MMF, 4 months after OLTx, either due to pre-transplant malignancy (HCC) in cirrhotic liver (No1) or due to developing renal function deterioration (No4, transplanted elsewhere).
Results. All patients had an improving liver function, coming almost to normal by the end of the first week, after starting the above treatment. No2 OLTx developed moderate acute rejection on day 7 and after a 3 days treatment with high doses of steroids, LFTs returned to normal. None presented any side effect due to everolimus and the two with renal impairment showed a significant renal function improvement. The survival range is between 12 days and 6 months. Everolimus blood level (Cmin) in all patients has been between 5.5 to 7.1ng/ml.
Conclusion. Everolimus has been used mainly in renal transplantation and only in few centres in OLTx, as late conversion from CyA or FK. To our knowledge, it is the first time of de novo use of everolimus and MPS or MMF combination, in OLTx patients. Although the number of patients is small, the results show that the above immunosuppressive combination can safely be used in OLTx patients, especially in those with malignancy and/or renal impairment.

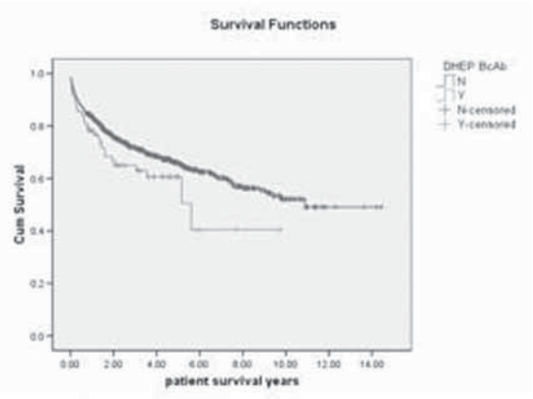
Abstract# 39 Poster Board #-Session: P39-I

USING LIVERS FROM HEPATITIS B CORE ANTIBODY POSITIVE DONORS EXPANDS THE DONOR POOL WITHOUT ADVERSELY AFFECTING SURVIVAL. George Tsoulfas[1], Randeep Kashyap[1], Peter Abt[1], Mark Orloff[1], Peter Horton[1], Manoj Maloo[1], Saman Safadjou[1], Maureen Graham[1], Ashokumar Jain[1], Adel Bozorgzadeh[1]. *[1]Solid Organ Transplantation and Hepatobiliary Surgery, University of Rochester Medical Center, Rochester, NY, USA.*
Background*:* The increasing gap between the number of available donors and potential recipients has led to aggressive efforts to expand the donor pool. One way with significant potential is the use of hepatic grafts from donors who are hepatitis B surface antigen (HBsAg) negative but who are positive for antibodies to hepatitis B core antigen (HBcAb).
Objective: Evaluate the outcomes of liver transplantation from HBcAb positive [(HBcAb (+)] donors, as a way to expand the donor pool.
Patients and methods: A single center, retrospective analysis was performed of 953 orthotopic liver transplants (OLTx) at our institution between 1992 and 2005. Living donor (n=155) and split liver recipients (n=5) were excluded and the sample consisted of 793 deceased donor recipients. Livers from 69 HBcAb(+) donors were transplanted. All recipients of HBcAb(+) livers received Lamivudine and antihepatitis-B immunoglobulin (HBIG) post-transplantation. The characteristics of the two groups, HBcAb(+) and HbcAb(-) liver recipients, are presented in the Table.
Results*:* There were no statistically significant differences among the two groups regarding recipient age, MELD score, cold ischemia time (CIT), and prevalence of hepatitis C. More importantly, despite the fact that the HBcAb(+) group donors were significantly older and had a higher donor risk index (DRI), there was no difference in 1-, 3-, and 5-year survival between the two groups (figure).

Conclusion: To the best of our knowledge, this study represents the largest single center experience with HBcAb (+) donors. The results show that livers from HBcAb(+) donors can be transplanted safely and are associated with patient survival equivalent to that obtained with livers from HbcAb(-) donors.

	HBcAb (+)	HBcAb (-)
	Median	Median
Recipient Age (yrs)	53.7	50.8
Donor Age (yrs)	55.0*	44.7
MELD score	22.8	24.1
DRI	2.18*	1.95
CIT (hrs)	10.7	10.5
	Frequency	
HCV pts	35.3%	33.4%

* p<0.01



Abstract# 40 Poster Board #-Session: P40-I

JUSTIFICATION FOR THE USE OF ECD GRAFTS IN HEPATOCELLULAR CARCINOMA. Takahiro Murakami[1], Javier Chapochnick[1], Alger Aquino[1], Ahmed Fahmy[1], Devon John[1], Glyn Morgan[1], Thomas Diflo[1], Lewis Teperman[1]. *[1]Transplant Surgery, New York University Medical Center, New York, NY, USA.*

Introduction

Following the introduction of the MELD allocation policy, Liver transplantation (LT) for Hepatocellular Carcinoma (HCC) has increased significantly in the US. At the same time, due to the critical organ shortage and geographical difference in the severity of disease, Extended Criteria Donor (ECD) grafts have became an important organ resource for the patients with HCC. In this study, we examined the impact of ECD grafts on clinical course and outcome.

Patients and Methods

103 LT procedures were performed for HCC during the MELD era (from February 27, 2002 to September 30, 2006). This represented 32% of all cases during this time. 53 ECD grafts (51%) and 50 non-ECD grafts (49%) were used. We retrospectively compared early complications (such as Primary non function (PNF), hepatic artery thorombosis (HAT), and delayed graft function), HCC recurrence, and patient survival in the ECD group with those of the non-ECD group. ECD grafts were defined: age>65, Na>170mEq, macrosteatosis>30%, cold ischemic time>14Hr, AST>150, split liver, and donation after cardiac death.

Results

There was no difference in average waiting time (253 vs 278 days), physiological MELD score (12.3 vs 13.2), list MELD score (28.3 vs 27.5), and etiology (HCV related 61% vs 77%) between the two groups. Mean observation times were 22.7 months. The occurrence of PNF (7% vs 0%) and HAT (4% vs 2%) were independent of graft quality (p=NS). However, delayed graft function was significantly higher in the ECD group (34% vs 11% p<0.01) and led to longer hospital stay. HCC recurrence rate (11% vs 12%) and tumor related death (6%vs 6%) were also similar among each groups (p=NS). 1 year patient survival was not statistically different (86% vs 93% p=NS), although 3 years patient survival was poorer in ECD group (68% vs 79% p=NS), this was mainly due to severe HCV recurrence.

Conclusion

In the current MELD era, LT for HCC can now be performed with relatively shorter waiting time and a lower physiological MELD score. The use of ECD grafts conveys no penalty to the HCC patient population. In order to overcome the critical organ shortage and geographical difference, more ECD grafts should be utilized. A donor-centric organ allocation system may be warranted for the HCC population.

Abstract# 41 Poster Board #-Session: P41-I

ACTUAL RESULTS OF ELDERLY GRAFTS IN CADAVERIC LIVER TRANSPLANTATIONS AND RETRANSPLANTATIONS. Umberto Maggi, Paolo Reggiani, Paolo Bertoli, Giorgio Rossi. *[1]Centro Trapianti Fegato, Fondazione Ospedale Maggiore Policlinico, Milano, Italy.*

AIM

In our unit since the Year 2000, liver grafts retrieved from older donors (age > 65 years) represent 20% of the whole number of grafts. However, there are always doubts in transplanting such grafts in different settings such as retransplantation (RETX), HCV+ patients, advanced MELD score or in urgent settings. Our aim is to clarify the outcome of elderly grafts (from donors with age > 65 years), and risk factors for their survival.

PATIENTS AND METHODS

From January 1995 through December 2006 in our Unit 325 primary liver transplantation (LT) were performed in adults. 49 whole grafts were retrieved from elderly donors whereas 115 from donors with age =<40 years. We compared short and long term survival of younger and elderly grafts with the log rank test. For both groups of grafts we compared also with appropriate tests (t-test, chi-squared test) data from lost and still functioning elderly grafts. Data included donor's sex, weight, gamma-GT; recipient's sex, age, serum creatinine, bilirubin, albumine, platelets, International Normalized Ratio (INR), MELD score, HCV/HBV/Viral status, UNOS status; intraoperative data as ischemia time, extracorporeal circulation, portal thrombosis, type of biliary anastomosis (duct to duct vs hepatico-jejunal), perfusion solution (UW, Celsior, HTK), the use of aortic conduits or of additional anastomoses.

P-Value =< .05 was considered statistically significant.

RESULTS

1,3, 5 years graft actuarial survival was 83, 72 63% in LT with older grafts and 84, 79, 78% with young grafts, respectively (log rank test: ns). Older grafts (n=5) used for RETXs had the worst outcome, since they were all lost.

In older grafts used in primary LT factors related to death with statistical significance were total ischemia time (p=.02), partial portal thrombosis in the recipient (p=.05) and serum bilirubine (p=.03).

In young grafts noone of the above mentioned factor was statistically associated with death after LT.

CONCLUSION

In our series of primary liver transplantations the donor's age didn't influence graft survival. On the contrary, elderly grafts in RETX settings were all lost. Risk factors for death in grafts retrieved from elderly donors and transplanted in primary LT are total ischemia time, partial portal thrombosis and serum bilirubin. Elderly grafts in HCV+ recipients were not related to statistically significant higher rates of mortality after primary LT.

Abstract# 42 Poster Board #-Session: P42-I

INFLUENCE OF ORGAN DONOR PARAMETERS IN GRAFT SURVIVAL AFTER LIVER TRANSPLANTATION. Ben-Hur Ferraz-Neto[1], Rogerio C. Afonso[1], Francisco Monteiro[2], Luiz A. Pereira[2]. *[1]Liver Transplantation Unit, Albert Einstein Jewish Hospital, Sao Paulo, Brazil; [2]Transplant Center, Secretariat of Health, Brazil.*

Background and Methods: Organ shortage remains a primary limitation to the progress of clinical transplantation and the use of expanded criteria donor is a routine. Some characteristics are suggested to jeopardize initial poor function and survival. The aim of this study was to asses the impact of potential donor risk factor on graft survival after liver transplantation. The donor features analyzed for expanded criteria were age ≥ 50 years old, Sodium >155 mEq/L, intensive care unit (ICU) stay > 4 days and the use of 2 inotropic drugs.

Results: From January 2002 to November 2006, 1936 potential donors were notified to the Transplantation System, Health Secretariat from the State of São Paulo and 1480 (76,4%) liver grafts were transplanted. Age was ≥ 50 years in 352 (23,8%) donors, Sodium was ≥ 155 mEq/L in 551(37,2%), ICU stay > 4 days in 609 (41,1%) and 199 (13,4%) were receiving 2 inotropic drugs. There was no difference in graft survival comparing donor with Sodium ≥155 mEq/L and < 155 mEq/l (p=0,3786), (ICU) stay ≥ 4 days and < 4 days (p=0,2114) and use of 2 inotropic drugs with < 2 inotropic drugs (p=0,8532).

The 1, 3 and 5 year graft survival was respectively 68,1%, 61,9% and 60,1% for donor age < 50 years compared to 56,4%, 52,7% and 52,7% for donor ≥ 50 years (p=0,0006).
Conclusion: Donor age ≥ 50 years had an adversely impact in graft survival for liver transplantation in São Paulo, Brazil.

Abstract# 43 Poster Board #-Session: P43-I

IMPACT OF CUMULATIVE RISK FACTORS FOR EXPANDED CRITERIA DONOR ON EARLY SURVIVAL AFTER LIVER TRANSPLANTATION. Rogerio C. Afonso[1], Renato Hidalgo[1], Jose M. A. Moraes-Junior[1], Sergio P. Meira-Filho[1], Fernando Pandullo[1], Luis E. P. Fonseca[1], Marcelo B. Rezende[1], Ben-Hur Ferraz-Neto[1]. *[1]Liver Transplantation Unit, Albert Einstein Jewish Hospital, Sao Paulo, Brazil.*
Background and Methods: Due to organ shortage, the use of expanded criteria donors for liver transplantation (LTx) is a strategy used routinely in many teams. Some features are suggested to jeopardize initial poor function and survival, most commonly donor age ≥ 60 years, BMI ≥ 30, Sodium ≥ 155 mEq/l, cold ischemic time ≥ 12 h and intensive care unit stay ≥ 4 days. The aim of this study was to evaluate the cumulative impact of donor risk factors on early (30 days) patient survival and retransplantation after LTx. From March 2003 to November 2006, 124 orthotropic liver transplantation were performed in 114 patients by the same team in 3 different hospitals, where variables of all patients are prospectively recorded. Patients were divided in 5 groups: group I – no risk factor; group II – 1 risk factor; group III – 2 risk factor; group IV – 3 risk factor and group V – 4 or more risk factors. Retransplantation was an exclusion criteria for the analysis. Groups were compared according early (30 day) survival and retransplantation.
Results: The overall patient survival was 81,58%. There were 18 patients in group I, 42 in group II, 38 in group III, 15 in group IV and 1 patient in group V. Early survival rate was respectively, 94,44%, 78,57%, 81,57% and 86,66% for group I, group II, group III and group IV (p=0,581). The patient in group V needed retransplantation and died 25 days after admission. Retransplantation rate for group I, group II, group III and group IV was respectively: 5,55%, 11,90%, 13,15% and 6,66% (p=0,786).
Conclusion: Cumulative donor risk factors did not impact early survival or frequency of retransplantation.

Abstract# 44 Poster Board #-Session: P44-I

LONG-TERM SURVIVAL PREDICTORS AFTER LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA. Alessandro Giacomoni[1], Andrea Lauterio[1], Abdallah Slim[1], Claudio Zavaglia[2], Bogdan Dorobantu[1], Luciano De Carlis[1]. *[1]Liver Transplant and Hepato-Biliary Surgery, Niguarda Hospital, Milan, Italy; [2]Hepatology, Niguarda Hospital, Milan, Italy.*
Introduction: the aim of this retrospective study is to identify predictors of both survival and tumor free survival of a cohort of patients (pts) with hepatocellular carcinoma (HCC) and cirrhosis, who were treated by orthotopic liver transplantation(OLT).
Methods: from January 1989 to December 2002 among 549 patients transplanted in our Institution 155 had HCC. HCC was diagnosed in 116 pts before OLT and in 39 at histological examination of the explanted livers. In this study group of 155 pts 129 (84%) met Milan criteria at histology. Ninety-four pts received neoadjuvant therapies. Nineteen pts had poorly differentiated HCC (G3), 85 had moderately differentiated HCC (G2), 33 had well differentiated HCC (G1). In 18 pts the grading could not be determinated as a consequence of complete nodule necrosis. Furthermore 8 pts had macro-vascular and19 micro-vascular invasion.
Results: With a median follow-up of 49 months (range 0-178) 10 pts (6.5%) had recurrence and died because of it. Among them 5 (26% of the G3 group) showed grading G3 and 5(6% of the G2 group) had grading G2; 4/8(50%) had macro-vascular invasion and 3/19 (15%) showed micro-vascular one. At the univariate analisys survival was not affected by patient's age or sex, etiology of liver disease, Child score at transplantation, rejection episodes, tumor number, total tumor burden, bilobar tumor, and pathologic Tumor, Nodes, Metastasis (pTNM)stages. On the other hand tumor encapsulation, α-fetoprotein levels, micro-vascular invasion, macro-vascular invasion and grading significantly affected patient survival. Five year survival according to the histological grading is 44% for G3, 67% for G2 and 97% for G1. Multivariate analysis showed that histological grade of differentiation and macro-vascular invasion are independent predictors of survival.
Conclusion: Histological grade of differentiation and macroscopic vascular invasion, as assessed on the explanted livers, are strong predictors of both survival and tumor recurrence in patients with cirrhosis who received transplants for HCC.

Abstract# 45 Poster Board #-Session: P45-I

LIVING DONOR LIVER TRANSPLANTATION FOR PATIENTS WITH HEPATOCELLULAR CARCINOMA: EXPANDED CRITERIA OR MORE. Deniz Balci[1], Burcin C. Taner[1], Murat Dayangac[1], Baris Akin[1], Zahide Kurt[1], Izzet Memi[1], Cihan Duran[1], Suleyman Uraz[1], Huseyin Sen[1], Omer H. Ayanoglu[1], Refik Killi[1], Levent Yalcin[1], Yildiray Yuzer[1], Yaman Tokat[1]. *[1]Organ Transplantation Unit, Istanbul Science University Florence Nightingale Hospital, Istanbul, Turkey.*
Milan Criteria (MC) is widely used for allocation of liver grafts for patients with HCC. Satisfactory results have also been reported with Barcelona criteria (BC). Living donor liver transplantation (LDLT) has emerged as an alternative where cadaveric organ availability is limited. We aimed to rewiev our LDLT series and compare the outcome of the patients within MC or BC.
Between July 2004 - December 2006 100 consecutive LDLT were performed at our institution. There were 28 cases with HCC (22 men, 6 women). Preoperative evaluation included CT or MRI of abdomen, metastatic work-up with CT of chest and bone scan. Two patients had surgical resection prior to transplantation. LDLT was considered for all patients with negative metastatic work-up. Either the number and size of the tumors or major vascular invasion did not constitute an exclusion criteria per-se. Two perioperative deaths were excluded from analysis. Twenty six patients (median age 57, range 45-72) were included in this review. Etiology of the cirrhosis consisted of HBV (n=18), HCV (n=4), Alcohol (n=3), PBC (n=1). The Child class of the patients were A (n=11, %43), B (n=9, 34%) and C (n= 6, %23). Eight patients were considered to be beyond Milan criteria (MC) by imaging studies. Of those 2 had partial or complete portal vein thrombosis.
Mean follow-up was 315 days (median=330 days). Estimated mean survival of the whole series was 25.6 months. After pathological examination, 13 patients were found to be within,13 patients beyond MC and 20 patients within and 6 patients beyond BC. HCC recurred in 1 patient beyond MC but within BC at 8 months requiring 2 surgical resections and 2 radiofrequency ablations. One patient beyond both MC and BC died of thrombosis in vena cava at 8 months. One patient within both MC and BC died of sepsis at 2 months. Tumor differentiation was lower and multifocality was significantly higher in patients with HCC beyond MC. Survival and tumor recurrence for patients with tumors within MC and BC was not statistically different.
Indication of LDLT can be expanded to include tumors beyond MC. LDLT offers timely liver transplantation opportunity with comparable result for patients with HCC exceeding MC.

Abstract# 46 Poster Board #-Session: P46-I

COMBINED HEPATOCELLULAR CARCINOMA-CHOLANGIOCARCINOMA: DIAGNOSIS AND OUTCOME OF TRANSPLANTATION. Ahmed E. Fahmy[1], Takahiro Murakami[1], Devon John[1], Thomas Diflo[1], Glyn Morgan[1], Donna Campbell[1], Lewis Teperman[1]. *[1]Department of Transplantation, New York University Medical Center, New York, NY, USA.*
Combined hepatocellular carcinoma and cholangiocarcinoma (cHCC-CC) is a rare form of primary liver cancer with a reported incidence of 0.6%-4%. These tumors have features of both hepatocellular and biliary differentiation and a presumed more aggressive clinical course than pure HCC. Pre-operative diagnosis is difficult and imaging studies usually reveal no specific features.
Methods and Results: We performed a retrospective analysis of all transplants done at our institution between January 1996 and November 2006. Of 166 patients transplanted with primary liver cancer, seven patients (4.2%) were found to have combined HCC-CC on explant pathology. All patients had CT scan or MRI as part of the pre-transplant workup. Six patients were diagnosed pre-operatively with HCC. One patient had no lesions identified on pre-operative MRI. Most lesions had patterns of enhancement consistent with hepatocellular carcinoma. All seven patients were males. Six patients had HCV cirrhosis and one patient had HBV cirrhosis. No patients had an overlap syndrome with PSC. Four patients had trans-arterial chemo embolization pre-operatively. Immunostains (Cytokeratins) were done in five of the seven patients. Vascular invasion was found in five patients (71%). Alpha fetoprotein level was < 50 ng/ml in five patients and >100 ng/ml in two patients. In no patient was AFP higher than 400 ng/ml. CA19-9 was

not routinely measured preoperatively. Mean length of follow up was 275 days (range 32-684 days). Four patients (57%) died within the first year post transplant with tumor recurrence. One patient is alive two years post transplant with no evidence of tumor recurrence and two patients are alive with less than 6 month follow up.
Conclusion: The pre-operative diagnosis of combined hepatocellular carcinoma-cholangiocarcinoma remains elusive. Discrepancies between serum tumor marker levels and the enhancement pattern on imaging studies should raise concern of a lurking cHCC-CC. These tumors frequently exhibit invasive characteristics with a clinical course more aggressive than HCC. Over all patient survival is less favorable than HCC patients. A more aggressive approach may be warranted if a combined tumor is suspected.

Abstract# 47 Poster Board #-Session: P47-I

DIFFICULTIES IN THE MANAGEMENT OF POSTTRANSPLANT LYMPHOPROLIFERATIVE DISEASE AFTER PEDIATRIC LIVER TRASNPLANTATION IN BRAZIL. Irene K. Miura[1], Gilda Porta[1], Renata S. Pugliese[1], Vera Baggio[1], Tereza Guimaraes[1], Joao Seda Neto[1], Vincenzo Pugliese[1], Eduardo A. Fonseca[1], Eduardo Carone[1], Andre Godoy[1], Alcides A. Salzedas[1], Paulo Chapchap[1]. *[1]Liver Transplant Unit, Hospital do Cancer/Hospital Sirio Libanes, Sao Paulo, Brazil.*
Posttransplant lymphoproliferative disease (PTLD) is a major complication after solid organ transplantation. It is associated with high morbidity and mortality, and the incidence in the literature varies from 2 to 30%. Early diagnosis and treatment are essential in achieving better outcomes. We retrospectively analyzed our data on 259 liver transplants in 243 patients under 18 years, from March 1991 to November 2006. PTLD was suspected by clinical and laboratorial findings and was confimed by the histological study (WHO classification), including the clonality analysis and evidence of EBV infection in the involved tissues. Quantitative EBV-PCR was not used for monitoring this series. Out of 243 patients, 21 (8.6%) developed PTLD. Eleven patients were male. 71.4% of the patients were under 2 years and sixteen patients (76.2%) were EBV IgG negative at the time of transplant. PTLD was diagnosed 2m to 2y10m after the liver transplant (median 14m). Basic immunosuppression consisted of Cyclosporine A (CSA) (n=3) or Tacrolimus (TAC) (n=18) associated with steroids which were weaned by 3 months post-transplant. The involved sites included: intestine (12), liver (5), lymphonodes (5), stomach (3), oral mucosa (2), skin (1) and bone marrow (1). Histopathology showed polymorphic PTLD in 15 patients, monomorphic PTLD (diffuse large B cell lymphoma) in 5 patients and Burkitt's lymphoma in 1 child. Treatment strategies consisted of reduction or withdrawal of the immunosuppression, antivirals, anti-CD20 therapy, and chemotherapy. Five patients (25%) died due to various reasons, and 16 patients are current alive; 3 patients have lymphoma on chemotherapy regime, eight patients are receiving minimal immunosuppression, and 5 patients are off immunosuppression. In conclusion, when the surveillance of EBV infection/PTLD with quantitative EBV-PCR is not available, a high degree of clinical suspicion and prompt diagnosis and treatment are required to control the disease.

Abstract# 48 Poster Board #-Session: P48-I

LOCO REGIONAL THERAPIES IN HEPATOCELLULAR CARCINOMA: ARE THEY DIFFERENT? Alejandro Mejia, Roozbeh Rassadi, Leslie Van Parys, Reem Ghalib, Cheryl Levine. *[1]Liver Institute, Methodist Dallas Medical Center, Dallas, TX, USA.*
Background: A variety of loco regional therapies (LRTs) are currently used in patients with the diagnosis of hepatocellular carcinoma (HCC) on the waiting list for liver transplantation. Comparison of efficacy of different modalities has not been reported. Here, we compare the efficacy and outcome of LRTs in pretransplant patients based on our experience.
Material and methods: A retrospective analysis of prospectively collected data of 139 patients who underwent OLT, identified 23 patients with diagnosis of HCC between July 2003 and November 2006. LRTs were radiofrequency microwave ablation (RFA), transcatheter hepatic arterial chemoembolization (TACE), pecutaneous ethanol injection (PEI) or selective internal radiation sphere (SIR sphere) therapy. Demographics, Mortality, length of stay and efficacy of these therapies were evaluated. Efficacy of treatments was evaluated based on percentage tumor necrosis in explant specimen.
Results: A total of 32 lesions in 23 patients were treated with a form of LRT before transplant. 6 patients received RFA, 5 received TACE and one had SIR sphere therapy. 6 patients had a combination of modalities (4 TACE+ RFA and one RFA+PEI and one RFA + SIR sphere). 5 patients did not receive any form of pretransplant treatment. 3 patients expired on follow up (mortality of 13.4%). Two of them received RFA and one received TACE before transplantation. Mean percent of tumor necrosis in TACE group was 85-90% and mean percentage of necrosis in RFA group was 60-70%. Only one patient received SIR sphere therapy and had 90% tumor necrosis in explant. Mean length of stay was 8 days with no significant difference between the treatment groups.
Conclusions: Loco regional therapies prior to liver transplant are effective as a bridge therapy to liver transplant. TACE and SIR sphere appear to be more effective in achieving tumor necrosis compared to RFA considering that there are no differences in mortality or length of stay in the hospital. TACE or SIR sphere therapy should become treatment of choice for HCC before OLT in the appropriate patients. Further studies are needed to confirm the above results.

Abstract# 49 Poster Board #-Session: P49-I

DE NOVO. POST-TRANSPLANT NON-LYMPHOPROLIFERATIVE MALIGNANCIES IN LIVER TRANSPLANT RECIPIENTS. Ilka F. S. F. Boin[1], Marilia I. Leonardi[1], Raquel Stucchi[1], Claudio S. R. Coy[2], Luiz S. Leonardi[1]. *[1]Unit of Liver Transplantation, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil; [2]Coloproctology, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil.*
INTRODUCTION: The risk of developing .de novo. malignancies after liver transplantation is around 1% per year. The incidence varies from 3 to 15%, and it is greater than that in the general population. The potential causes for cancer after solid organ grafting are: chronic immunosuppression and human herpes viral infection.
AIM:The goals of this paper were to review the medical literature about the subject and to verify the incidence of de novo malignancies in our service.
METHODS: A retrospective analysis of the medical files of 325 successive patients submitted to orthotopic liver transplantation from September 1991 to February 2006 was performed. Type of tumor, the risk factors involved, the treatment modality and the patient survival were registered and analyzed. The recurrence of hepatocellular carcinoma was excluded.
RESULTS: There were only 6 (1.8%) cases, five men and one woman, the average age being 44.6. The type of tumor, the age of each patient, time from liver transplantation to malignancy diagnosis and the survival of each patient are noted. There was a 66.6% mortality. The survival time was affected by the benign nature of two of the tumors and by the early manifestation of intestinal obstruction in another allowing adequate surgical treatment. Three of the patients were heavy alcohol consumers before the transplant.
CONCLUSION:The screening for premalignant lesions must be strongly encouraged, aiming for better postoperative results.

Abstract# 50 Poster Board #-Session: P50-I

ORTHOTOPIC LIVER TRANSPLANTATION (OLT) IN PATIENTS WITH HEPATOCELLULAR CARCINOMA (HCC): A LIVER TRANSPLANTATION GROUP EXPERIENCE. Claudio A. Marroni[1], Christina G. S. Fraga[1], Alex Schwengber[1], Ajacio B. M. Brandao[1], Guilhermo Kiss[2], Alfeu Fleck, Jr.[2], Mario H. Meine[2], Thomaz Grezzana[2], Thadeu Cerski[2], Ian Leipnitz[2], Eduardo Schlindwein[2], Maria L. Zanotelli[2], Guido Cantisani[2]. *[1]Internal Medicine, FFFCMPA, Porto Alegre, Rio Grande do Sul, Brazil; [2]Grupo de Transplante Hepatico de Adultos, Complexo Hospitalar Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil.*
Introduction: The hepatocellular carcinoma (HCC) is the most common type of primary liver cancer in adult patients and the OLT is the best therapeutic approach.
Objectives: Analize the results of OLT in patients with cirrhosis and HCC performed CHSCMPA
Patients and Methods: 603 OLTs performed between June 1991 and December 2006.
Results: HCC was found in 113 pacients (17%), being an ocasional finding in 5%. Avarage age was 56 years old. Males represented 70%. The cause of cirrhosis was VHC in 70,8%, VHC plus alcohol in 13,5%, VHB in 5,8%, alcohol in 3,8% and in 4,8% the etiology coul not be defined. According to Child-Pugh classification, 13,6% were A; 45,5%, B and 40,8%, C. Alfafetoprotein (AFP) level was lower than 10 ng/dL in 35,9%, ranging from 10 to 30 ng/dL in 23,3%; from 30 to 100 ng/dL in 14,5%; from 100 to 500 ng/dL in 22,5% and higher than 1000 ng/dL in only 3,8%. The longest

follow-up is 114 months. Considering the number of nodules: in 65,2% there was only one; in 17,4%, two; in 7,7%, three and in 9,7%, four or more. The size of tumor ranged from 0,7 to 8 cm. The predominant hystologic type was microtrabecular. Vascular invasionwas verified in 8 cases. The differenciation grade (1 2 and 3) was 6,7%, 54% and 22,3%, respectively in the remaining it was not possible to define due to tumoral necrosis. Reccurrence was verified in 15 patients, being bones, lymphonodes, retroperotonium and liver the most frequent sites. AFP was higher than 1000 ng/mL in 6 cases of recurrence, in the remaining, AFP was lower than 100 ng/mL. Thirty-six deaths: 11 in less than 30 days, 09 from 1 to 6 months and 16 after 15 months after OLT. Global survival was 93% in 1 year and 55% in 5 years

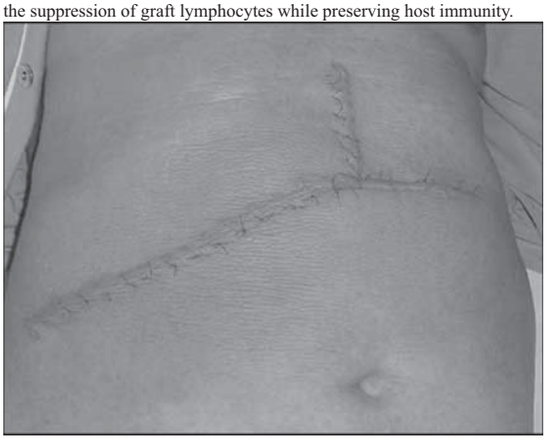
Conclusions: Demographic features of cirrhotics with HCC are similar to those of cirrhotic without it. AFP has a low sensitivity for diagnosis as well as for follow-up test in patiets with HCC who uderwent OLT. Recurrence was, in our experience, was higher than data in literature. Outcome of OLT in this group of patients was satisfying, showing excellent survival rates.

Abstract# 51 Poster Board #-Session: P51-I

ACUTE GRAFT-VERSUS-HOST DISEASE AND KAPOSI SARCOMA FOLLOWING LIVER TRANSPLANTATION.

Marcos Mucenic[1], Ajacio B. M. Brandao[1], Claudio A. Marroni[1], Maria L. Zanotelli[1], Guido Cantisani[1], Renan R. Bonamigo[2], Maria C. Rey[2], Kaue M. Duro[2], Rafael Bonfa[2]. *[1]Liver Tranplantation Group, Hospital Dom Vicente Scherer, Santa Casa, Porto Alegre, RS, Brazil; [2]Department of Dermatology, FFFCMPA, Porto Alegre, RS, Brazil.*

Clinical Backgroung: Graft-versus-host disease (GVHD) and Kaposi sarcoma are infrequent and serious complications of orthotropic liver transplantation (OLT). The usually disappointing outcome of these conditions has prompted several anecdotal reports on new treatment strategies but no consensus has been possible. **Case Report:** A 67-year-old white male received an OLT for alcoholic cirrhosis and hepatocelular carcinoma. The isogroup male donor was 54 years old. Immunosupression consisted of corticosteroids and cyclosporine. Seven days after the OLT, he presented a progressive maculopapular exanthematous rash (figures 1 and 2), leucopenia and intermittent diarrhea and fever. A skin biopsy confirmed the diagnosis of GVHD. The rash improved with methylprednisolone. Five months after the OLT, elevated violaceous lesions appeared on his legs. A skin biopsy confirmed the diagnosis of Kaposi sarcoma. Upper endoscopy and colonoscopy also revealed a small (<5 mm) Kaposi lesion on his stomach and two others on the right colon. The patient was started on chemotherapy with doxorubicin six months after the OLT. After the second dose of chemotherapy, he presented nosocomial pneumonia, pseudomembranous colitis and *Cryptococcus neoformans* meningitis. He received antifungics with temporary improvement, but followed a downhill course with repeated nosocomial pneumonias, sepsis and respiratory insufficiency leading to his death 11 months after the OLT. **Significance:** This is the first reported case of an association between GHVD and Kaposi sarcoma after liver transplantation. The authors conclude that, although standard immunosuppressive treatment (corticosteroids and calcineurin inhibitors) successfully controlled GVHD, it precipitated irreversible neoplasic and septic complications. This case helps to demonstrate that the greatest challenge of managing GVHD is to balance the suppression of graft lymphocytes while preserving host immunity.



Abstract# 52 Poster Board #-Session: P52-I

CIRRHOTOMIMETIC TYPE OF HEPATOCELLULAR CARCINOMA DIAGNOSED AFTER LIVER TRANSPLANTATION.

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Hepatocellular carcinoma(HCC) has high recurrence rate for exceeding Milan criteria, in spite of a few trial to expand the criteria for liver transplantation. Especially, diffuse type HCC is the contraindication for liver transplantation. But, cirrhotomimetic type of HCC which is a kind of diffuse type, is difficult to diagnosis, preoperatively, and there are no published reports about the prognosis after liver transplantation. We experienced liver transplantation for cirrhotomimetic type of HCC that was diagnosed, postoperatively. He was 41 years old male and registered to waiting list for liver transplantation due to Hepatitis B virus related liver cirrhosis and esophageal varix bleeding. Three months before transplantation, newly developed small nodule was detected on computerized tomography(CT) and there were no interval changes on CT after 2 months. His serum value of alpha-fetoprotein(aFP) was 327 ng/ml. The patient received deceased donor liver transplantation and post-operative course was uneventful. However, on pathologic findings, the explanted liver had 5 tumors that the largest was 1.5 cm, and malignant cells were detected in most cirrhotic nodules. So, the patient's pathologic diagnosis was cirrhotomimetic type of HCC. Triple immunosuppressant was administered and steroid was stopped at about 2 weeks after transplantation. Adriamycin 20mg per week was injected 10 times in outpatient service. Seven months after transplantation, aFP was 1.7 ng/ml and there was no evidence of recurrence. In conclusion, cirrhotomimetic type of HCC is rare and difficult to detect, preoperatively. And regardless of short-term follow up, recurrence of HCC is not detected. So, further evaluations and data collections are necessary for preoperative diagnosis and prognosis of transplant.

Abstract# 53 Poster Board #-Session: P53-I

ORTHOTOPIC LIVER TRANSPLANTATION, COMBINED HEART TRANSPLANTATION AND DOMINO-TRANSPLANTATION IN PATIENTS WITH FAMILIAR AMYLOIDOSIS.

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Introduction:

Orthotopic liver transplantation (OLT) is the only curative option for patients with hereditary amyloidosis. The major problems in these young patients are subsequent diseases like cardiac problems, intestinal problems and CNS complications at transplantation. Simultaneously, the amyloidosis liver may be transplatated to other patients in need for an organ but not suffering from amyloidosis (domino-transplantation).

Results:

19 patients with hereditary amyloidosis (7 females, 12 males, 49 +/- 13 years) underwent a OLT between 05/1998 and 11/2006 at our center. 7 patients received a pacemaker prior to OLT for prophylaxis of arrhythmias. Overall, 6 patients died after OLT, 4 of them within the first year after transplantation. 4 patients underwent a combinated liver and heart transplantation because of simultaneous cardiac amyloidosis. Of these, 1 patient did not survive. The causes of death were in cardiac complications (4 pat.), infections (2 pat.) and malnutrition (1 pat.). 1- and 5-years survival were 66,7%. Women tended to have a better outcome than men. Prophylactic pace makers, organ rejections or type of mutation had no influence on the survial of the patients. Explanted livers of 17 patients with hereditary amyloidosis were transplanted into other patients as domino-transplantations. The remaining 2 livers of the tranplanted amyloidosis patients could not be transplanted due to steatosis. Most of the domino-transplant recipients suffered from hepatocellular carcinoma (n=16), one patient had an alcoholic liver cirrhosis. Of these, 2 recipients of domino organs died after OLT due to arrhythmia after 4 years and due to a recurrance of HCC 1 year after OLT.

Conclusions:

Survival after OLT in patients with heriditary amyloidosis is limited. No differences were observed between OLT and a simultanious liver and heart transplantation. The major cause for limited survival were severe subsequent complications of advanced amyloidosis in these patients. Therefore, early transplantation of patients is critical to a beneficial outcome.

Domino-transplantations of amyloidosis livers were safe and may be valuable therapeutic alternatives especially for patients with limited therapeutic options and urgent need of an organ, like patients with HCC.

Abstract# 54 Poster Board #-Session: P54-I

LIVER TRANSPLANTATION FOR ALCOHOLIC CIRRHOSIS: A SINGLE CENTER EXPERIENCE. Vladimir Mejzlik, Pavel Studenik, Jiri Ondrasek, Milan Kuman, Jan Cerny. *[1]Transplantation Unit, Center of Cardiovascular and Transplantation Surgery, Brno, Czech Republic.*

Purpose: Liver transplants for alcoholic cirrhosis at our center were retrospectively evaluated.

Methods: Demographic indicators were evaluated.The recurrence of alcohol use was detected by means of: 1.biochemical indicators (carbohydrate-deficient transferrin, GMT, AST/ALT ratio, macrocytosis), 2.psychological testing, 3.data from patient's environment and 4.graft biopsy in selected cases. Severity of recurrence was divided into two categories: severe(biochemical indicators increased most of the time) and mild(episodic).

Kaplan-Meier analysis was carried out to evaluate patient survival and the time to recurrence of alcohol use.Furthermore, the survival of patients transplanted for other diagnoses was analyzed.The logrank test was used to compare the survival rates of patients from the two groups.

Results:56 patients(45 men and 11 women, mean age 51) underwent liver transplantation for alcoholic cirhosis from 1994-2006, which is 21.5 % of all liver transplants.In most cases(96%), the rule of a 6-month alcohol abstinence prior to transplantation was applied. In 16 patients(28%, 95% CI 16-40%) a recurrence of alcohol use occured - a mild episodic recurrence in 7 patients(43% of all recurrences) and a severe recurrence in the remaining 9 patients(57%), 5 of which died due to alcoholic cirrhosis of the graft or direct complications related to it.In all 3 patients where the rule of a 6-month alcohol abstinence prior to the transplantation was not applied a recurrence of alcoholism occured.The 25th percentile (according to Kaplan-Meier analysis) of the time to recurrence of alcohol use counted from the date of transplantation was 467 days.10-year survival(without regard to whether or not recurrence occured) of the patients transplanted for alcoholic cirrhosis was 71%.10-year survival of the patients transplanted for other diagnoses was 70%.The survival rate of both groups is not significantly different(logrank test p=0,78).

Conclusion: The recurrence rate of alcohol use after liver transplantation was 28% in our group.Clearly, even the 6-month rule is not a reliable predictor of recurrence.On the other hand, the results of liver transplantation for alcoholic cirrhosis are very good regardless of whether or not a recurrence of alcohol use occured.

It is necessary to select patients for transplantation on the merits of the individual, at our center primarily on the basis of psychological testing.

Abstract# 55 Poster Board #-Session: P55-I

THE EFFECT OF CALCINEURINE INHIBITORS MONOTHERAPY ON HEPATITIS C RECURRENCE IN LIVER TRANSPLANTED PATIENTS. Mario Angelico[1], Laura Tariciotti[1], Felice Nigro[1], Ilaria Lenci[1], Linda De Luca[1], Leonardo Baiocchi[1], Andrea Monaco[1], Daniele Sforza[1], Matteo Manuelli[1], Giuseppe Tisone[1]. *[1]Liver Transplant Center, University of Tor Vergata, Rome, Italy.*

The severity of hepatitis C recurrence in liver transplanted patients is correlated to many factors. Among this factors were reported contrast results regarding the effect of calcineurine inhibitors. The aim of the study was evaluate biochemical and istological features in liver transplanted patients due to cirrhosis HCV-related treated with tacrolimus vs cyclosporin monotherapy.

A randomized study was performed in 32 patients transplanted due to cirrhosis HCV-related, 17 treated with tacrolimus and 15 with cyclosporin. All patients were evaluated with biochemical parameters in 2 years of follow-up. Hepatic biopsies were also performed at 3, 12, 24 months after liver transplantation. No significant differences were observed between 2 groups of patients regarding demographic parameters, indications for liver transplantation, quality of liver donors and cold and worm ischemic time. During the follow-up the patients treated with tacrolimus had alkaline phosphatase values lower than those treated with cyclosporin (p=0.05). All the other parameters were similar in both groups of patients. Moreover the patients treated with tacrolimus showed a less grading score at 12 (p=0.02) and 24 (p=0.01) months after liver transplantation. No significant changes were observed in staging score between patients treated with tacrolimus and cyclosporin. In conclusion, liver transplanted patients treated with tacrolimus monotherapy had cholestatic index and istological grading scores lower than patients treated with cycplosporin, even if no significant changes were observed on istological staging between 2 different immunosuppressive therapies.

Abstract# 56 Poster Board #-Session: P56-I

OUTCOMES OF LIVER TRANSPLANTATION (LT) FOR HEPATOCELLULAR CARCINOMA (HCC) UNDER THE MELD ALLOCATION SYSTEM. Kenzo Hirose[1], Federico Aucejo[1], Cristiano Quintini[1], Koji Hashimoto[1], Shunichi Nakagawa[1], Renee Bennett[1], Charles Winans[1], Bijan Eghtesad[1], David Vogt[1], John Fung[1], Charles Miller[1]. *[1]General Surgery, Cleveland Clinic Foundation, Cleveland, OH, USA.*

PURPOSE: Our goal is to describe outcomes of LT for HCC during the era of the MELD allocation system.

METHODS: Of 361 consecutive patients (pts) who underwent LT at our center between June 2002 and August 2006, 77 pts were diagnosed with HCC. The following data were collected retrospectively for these pts: diagnosis, pre-LT staging by CT or MRI, use of pre-LT radiofrequency ablation (RFA) or transarterial chemoembolization (TACE), final pathologic staging, post-LT immunosuppression, and HCC recurrence. Kaplan-Meier (K-M) analysis was performed to determine overall survival (OS) and recurrence-free survival (RFS). Risk factors for tumor recurrence were analyzed. Pre-LT staging by CT or MRI was compared with explant pathology findings. Eficacy of RFA and TACE was assessed by review of explant pathology and outcomes.

RESULTS: Mean follow-up was 15 months. K-M 1-year and 2-year OS were 86% and 75% respectively. Death-censored RFS at 1 and 2 years were 93% and 87%. 20% of pts with microscopic vascular invasion (VI) experienced a recurrence compared to 5.3 % of pts without VI (p=0.05). Tumor differentiation and stage within or outside of Milan criteria were not found to be statistically significant predictors of recurrence. Use of TACE or RFA did not affect OS or RFS when compared to those who did not receive pre-LT therapy. Among the 23 pts who were beyond Milan criteria, TACE or RFA did not significantly affect OS or RFS. Assessment of tumor stage by imaging correlated with final pathology in 52 of 77 pts (68%). Tumors were overstaged in 3 pts, understaged in 13, and no lesion was seen in 9 pts. In pts who underwent TACE or RFA, only 2 exhibited 100% tumor necrosis on pathology.

CONCLUSIONS: Expeditious LT for HCC after the adoption of MELD allocation system confers excellent short term OS and RFS rates. Imaging by CT and MRI tends to understage HCC when compared with explant pathology. TACE and RFA do not appear to reduce recurrence rates post-LT and rarely achieve 100% tumor necrosis. VI appears to be the most important predictor of tumor recurrence. Better pre-LT assessment of VI would facilitate stratification of recurrence risk.

Abstract# 57 Poster Board #-Session: P57-I

LIVE DONOR LIVER TRANSPLANTATION FOR POST-KASAI BILIARY ATRESIA IN ADULTS. Yusuke Kyoden[1], Yasuhiko Sugawara[1], Sumihito Tamura[1], Noriyo Yamashiki[2], Yuichi Matsui[1], Junichi Togashi[1], Kayo Nojiri[2], Junichi Kaneko[1], Norihiro Kokudo[1], Masatoshi Makuuchi[1]. *[1]Artificial Organ and Transplantation Division, Department of Surgery, University of Tokyo, Bunkyo-ku, Tokyo, Japan; [2]Organ Transplantation Service, University of Tokyo, Bunkyo-ku, Tokyo, Japan.*

Back ground: The first case of live donor liver transplantation (LDLT) was performed in Sao Paulo, Brazil, in December 1988. A 23-year-old mother became the live donor for her child, a 4-year-old girl in terminal advanced liver failure due to biliary atresia (BA). Since this pioneering event, much progress has been made, owing a great deal to the endless efforts made by surgeons around the world. Today, LDLT is considered the standard treatment for end-stage liver disease in the Far East, where supply of organ from deceased donor remains limited. Previous reports have described the effectiveness of LDLT for post-Kasia biliary atresia (BA) in the pediatric population. Recently, on the other hand, poorer outcome of LDLT have been postulated in patients who reached adulthood after Kasai's procedure performed earlier in life. Little information is, however, available on this issue.

Patient and Methods: Between January 1996 and October 2006, 380 LDLT were performed at our institution. Clinical features and outcomes of BA patients in the series were retrospectively analyzed.

Results: All BA patients had undergone Kasai's procedure earlier in life prior to liver transplantation. There were 81 such post-Kasai BA cases in the series. All were either ABO blood type identical or compatible cases. Sixty (74%) were pediatric, and 21 (26%) were adult. None of the adults were complicated with severe hepato-pulmonary syndrome or porto-pulmonary hypertension. There were no cases complicated with hepatocellular carcinoma. Overall rate of complication did not differ greatly between the adults and pediatrics. However, the rate of intra-abdominal bleeding necessitating repeat laparotomy

and the rate of biliary stenosis was significantly higher in adults, 9.5% vs. 6.7% (p < 0.015), and 19% vs. 5% (p =0.04), respectively. Five year overall survival rates were, 89% for the adults and 90% for the pediatrics, respectively (*p*=N.S.). There was no mortality among donors.**Conclusion:** Outcome of LDLT in adult post-Kasai BA patients was satisfactory. The studied population is small, however, and further study is necessary to clarify the optimal condition and timing for successful long term outcomes for BA patients.

Abstract# 58 Poster Board #-Session: P58-I

ADULT LIVER TRANSPLANTATION USING RIGHT LIVER GRAFTS FROM DECEASED DONORS VERSUS LIVING DONORS – A COMPARISON OF THE RECIPIENT'S OUTCOME. Jessica Walter[1], Christian Wilms[1], Christian Lenk[2], Lars Mueller[2], Jong-Sun Kim[2], Lutz Fischer[2], Martina Sterneck[2], Xavier Rogiers[2], Dieter C. Broering[1]. *[1]Department of General and Thoracic Surgery, University Hospital Schleswig-Holstein, Campus Kiel, Kiel, Germany; [2]Department of Hepatobiliary Surgery and Solid Organ Transplantation, University Hospital of Hamburg-Eppendorf, Hamburg, Germany.*

The application of adult-to-adult living donor liver transplantation (LDLT) using right lobe has risen over the last years, becoming a common and successful technique. In contrast, splitting a deceased donor graft for two adults remains a controversial procedure, associated with an impaired outcome and high postoperative complication rate. The aim of this study was to evaluate differences in the graft function and outcome of recipients of anatomical identical full-right lobes obtained either from living or deceased donors. From January 1999 to June 2006, we performed 16 full-right split liver transplantations (SLT) and 41 adult LDLTs at the University Hospital of Hamburg. The outcome was comparatively analyzed in terms of early graft function, postoperative morbidity and survival. Median follow up in the SLT group was 44.3 months (range 1.5-90) and 29 months (range 0.5-65.5) in the LDLT group. The actual 5-year patient survival rate was 81.3% after SLT and 82.9% after LDLT (*p* = NS); the actual 5-year graft survival rate in SLT and LDLT was 68.8% and 80.4% (*p* = NS). No statistical differences in surgical complications were found. Biliary complications appeared in six SLT recipients (37.5%) and in ten LDLT recipients (24.3%). Median GRWR in SLT was significantly higher (1.597 vs. 0.989; p <0.001). Postoperative graft function was comparable between the groups whereas a higher level of transaminases and g-glutamyltransferase was observed in SLT group.

The outcome of 16 recipients of deceased donor full-right liver grafts was comparable to that of 41 LDLT patients receiving anatomical identical full-right lobes in terms of patient and graft survival and surgical complications. The application of full-split procedure in adults requires careful donor and recipient selection. Compared to LDLT, a higher GRWR should be aimed in SLT, respecting the differences in the quality of the otherwise concordant grafts.

Abstract# 59 Poster Board #-Session: P59-I

RISK FACTORS FOR LATE RENAL FAILURE AFTER LIVER TRANSPLANTATION. Itxarone Bilbao[1], Cristina Dopazo[1], Ernesto Castro[1], Gonzalo Sapisochin[1], Luis Castells[2], Alfredo Escartin[1], Jose L. Lazaro[1], Inigo Lopez[1], Joaquin Balsells[1]. *[1]Surgery Liver and Transplantation, Hospital Vall d'Hebron, Barcelona, Spain; [2]Hepatology Unit, Hospital Vall d'Hebron, Barcelona, Spain.*

Objectives: To analyze the factors that lead to the development of late renal failure (RF) after the first year of liver transplantation (LT).

Materials and Methods: Between January 1991 and December 2001, our center performed 430 liver transplants (LT) in 391 patients. 279 patients had more than one-year survival, being these patients, the object of the study. The average duration of the follow-up was of 6.6 years (r: 1-12 years). The average age was of 55.6 ±9 years old (10.8% > 65 years old). The associated morbidity pre-liver transplant: 11% renal failure, 9% arterial hypertension, 16% DM, 14% any cardiovascular problems and 17% previous portal thrombosis. The basal immunosuppression was: CyA 47% and FK 506 53%. The RF was considered as creatinine >1,5 mg/dl during 3 months.

Results: Actuarial patient survival was: 93%, 89%, 79%, and 60% at 2, 3, 5, and 10 years. Univariate risk factors for developing late RF were: first period of LT (1991-1995), age > 60 years old, pre-LT renal failure, pre-LT cardiopathy, donor's cause of death, ischemia time > 8h, total portal thrombosis, extended hospital stay, induction or maintenance inmunosupression regimen based on cyclosporine and usage of glucocorticoids beyond the first year post-LT. In a multivariable analysis, risk factors were: recipient's > 60 years old (OR=2,5) and presence of pre-LT cardiopathy (OR=3,1). The donor's cause of death due to craneo-encephalic trauma (OR=0,5) and immunosuppressive induction based on tacrolimus (OR=0,1) have resulted to be protecting factors.

Conclusion: Long term CRF is related to recipient's old age and the presence of previous cardiopathy, donor's cause of death due to cardiovascular accident related with old-aged donors, and management of immunosuppressive induction based on different guidelines other than tacrolimus.

Abstract# 60 Poster Board #-Session: P60-I

RECURRENCE OF HEPATITIS C AND BILIARY COMPLICATIONS FOLLOWING LIVER TRANSPLANTATION: A SINGLE CENTER EXPERIENCE. Eleonora De Martin[1], Elizabeth C. Verna[2], Francesco P. Russo[1], Marco Senzolo[1], Maria Guido[1], Giacomo Germani[1], Daniele Canova[1], Annalisa Masier[1], Martina Gambato[1], Daniele Neri[1], Sara Boninsegna[1], Robert S. Brown, Jr.[2], Patrizia Burra[1]. *[1]Surgical and Gastroenterological Sciences and Patholgy, Padova University, Padova, Italy; [2]Center for Liver Disease and Transplantation, Columbia University Medical Center, New York, USA.*

Background: HCV-recurrence and biliary complications (BC) are two major causes of post-transplant morbidity and mortality. The aim of this study was to evaluate HCV-recurrence, development of BC and survival in patients transplanted for HCV. Methods: All adult patients who underwent liver transplantation (LT) between January 1999 and February 2005 were evaluated. HCV-recurrence was histological confirmed (Scheuer) on protocol liver biopsies performed at 6 months and then yearly after LT, BC were defined when biliary anastomotic and non anastomotic stenosis, leak or stones were seen on cholangiogram, MRCP, ERCP, TC, US in all but patients who were retransplanted or died within one month after surgery. The influence of recipient age, HCC, HBsAg + and alcohol etiology, extended criteria donor (ECD), and acute rejection on patient survival were assessed by multivariate analysis. Kaplan-Meier and Cox proportional hazards were used.

Results: Among 380 patients 361 were enrolled, 155 (42,9%) HCV+ and 206 (57,1%) HCV-, 251 (69,9%) male and 110 (30,5%) female, mean age 50 years, mean follow up 4 years. 622 liver biopsies were performed, and fibrosis (0-4) due to the HCV recurrence was reported in 38% of liver biopsies at 1 year and 57% of liver biopsies at 5 years from LT respectively (p=0.049). The progression to severe hepatitis or cirrhosis was assessed in 25,8% of liver biopsies at 5 years after LT. BC occurred in 46/155 (29.7%) HCV+ and 43/206 (20.9%) HCV- patients (p=0.06). The overall patient survival was 86% at 5 years, lower in HCV+ compared to HCV- patients (p<0.05), whereas there was no difference when patients were grouped as HCV+/BC+, HCV+/BC-, HCV-/BC+, HCV-/BC-. ECD was a the only significant predictor of overall recipient mortality (p=0.035). Conclusions: The fibrosis due to HCV-recurrence increases after LT affecting more than half of patients at 5 years. The long-term survival is significantly lower in HCV+ compared to HCV- recipients and the use of suboptimal donors further impair the survival. The development of BC does not influence the survival either in HCV+ and HCV- recipients.

Abstract# 61 Poster Board #-Session: P61-I

GRAFT STEATOSIS AFFECTS RECIPIENT QUALITY OF LIFE 10 YEARS AFTER LIVER TRANSPLANTATION. Vincent H. Karam[1], Mylène Sebagh[1], Kinan Rifai[1], Didier Samuel[1], Denis Castaing[1], Cyrille Feray[1]. *[1]Centre Hépatobiliaire, Hôpital Paul Brousse, Villejuif, France.*

Objective and subjective parameters are helpful in assessing a good long-term follow-up of liver transplantation (LT) recipients. However, few studies evaluated the relationship between both kinds of parameters. Seventy-two recipients who still had their first graft 10 years after LT underwent liver biopsy and completed a Quality Of Life (QOL) questionnaire. We used a validated French version of the questionnaire established by NIDDK (Pittsburg, USA) to assess 5 domains: measures of disease (MD), psychological Distress (PD), personal function (PF), social and role function (SRF), and general health perception (GHP). The overall-QOL score was lower in liver steatosis patients (n=24, p<0.007). Deeper analysis showed that liver steatosis affected particularly MD (p=0.002), PD (p=0.01) and GHP (p<0.05). The Body Mass Index (BMI), rate of diabetes, and immunosuppressive dosage were not statistically higher in the steatosis group. Overall-QOL was not affected by fibrosis or ductopenia. Nevertheless, GHP score was lower in patients with fibrosis (n=40, p=0.02) and well-being score was lower in those with

ductopenia (n=27, p=0.05). In conclusion, long-term graft lesions, particularly steatosis and slightly fibrosis and ductopenia, could affect some domains of recipient QOL 10 years after LT.

Abstract# 62 Poster Board #-Session: P62-I

CHRONIC RENAL DYSFUNCTION – A RETROSPECTIVE ANALYSIS OF 1173 SINGLE LIVER TRANSPLANTATIONS.

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Background. Advancement of operative management and immunosuppression have led to a continuous improvement of survival after liver transplantation. However, with most immunosuppressive protocols consisting of calcineurin inhibitors (CI), chronic nephrotoxicity has become a major long-term complication.

Methods. In a single-center retrospective study, we reviewed our database of 1173 consecutive liver transplants (1075 patients from 1988 through 2000) to identify a correlation of pre- and post-transplantation variables with the incidence of chronic renal dysfunction (CRD), defined as one or more episodes of creatinine (sCr) increase over 1.8 mg/dL for at least 2 weeks. For survival analysis, cases were further divided in an early-/late-onset group (sCr increase within/after the first year, respectively).

Results. In a median follow-up of 5.2 years, CRD as defined was found in 137 (11.7%) of all transplants (82 [7%] early- 55 [4.7%] late-onset). Compared to 5/10 year survival rates in non-CRD transplants (n=1036) of 84/74%, survival was significantly decreased in early-onset (66/46%), but unchanged in late-onset CRD (98/86%). A uni-variate analysis revealed alcoholic cirrhosis, pre-transplantation renal dysfunction and pre- and post-operative hypertension as significant factors for CRD. However, in a multistep logistic regression analysis, only initial immunosuppressive treatment with CyA remained as an independent risk factor. No correlation to age, gender, rejection/retransplantation rates or diabetes was found. A consecutive three-year analysis of renal function (creatinine) showed no difference between patients on CI mono-therapy with either FK (n=28) or CyA (n=65) compared to those who had MMF added to either CI (n=44).

Conclusions. In liver transplantation, early-onset CRD significantly compromises patient survival. As an independent risk factor, CyA-based immunosuppression appears to be more disadvantageous than FK. A large proportion of patients with long-term, severe, chronic renal dysfunction failed to improve under MMF rescue therapy, which emphasizes the importance of establishing new diagnostic strategies to early identify at-risk patients, when renal dysfunction is still reversible.

Abstract# 63 Poster Board #-Session: P63-I

HIGH RATE OF ENDOMETRIAL PATHOLOGIES IN WOMEN AFTER LIVER TRANSPLANTATION.

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Objectives. A number of women after orthotopic liver transplantation (OLT) is gradually increasing. The very limited data on hormonal status of female liver recipients suggest increased estradiol levels in that group of patients. Typical risk factors for premalignant and malignant lesions of the endometrium are associated with hyperestrogenism and the most common symptom of malignancy is abnormal uterine bleeding. High rate of endometrial pathologies was observed in women after OLT in our Department. The aim of the study was to evaluate the incidence rate of endometrial pathologies in female liver recipients with abnormal uterine bleedings.

Material and Methods. Clinical data and pathological findings of 15 women after OLT who underwent dilatation and curettage (D&C) for abnormal uterine bleeding in years 2001-2006 were retrospectively analyzed. The group of 90 consecutive non-transplant patients who underwent D&C for the same reason in 2004 served as a control.

Results. Endometrial pathologies were detected in eight (53%) patients after OLT. There were two cases (13%) of endometrial polyps and six cases (40%) of endometrial hyperplasia - the premalignant lesion of the endometrium. All cases of hyperplasia were successfully treated with progestagens but the patients required two or three repeated D&C procedures to monitor the effects of the treatment. Significantly lower rates of endometrial pathologies were detected in the control. There were 32 cases (34%) of hyperplasia and 4 cases (4%) of endometrial cancer. Besides patients with abnormal uterine bleedings after OLT tended to be younger than women from the control group (41.13 years SD 6.23 vs 46.88 years DS 8.35).

Conclusions. Women after OLT seem to have increased risk of endometrial pathologies, including premalignant lesions of the endometrium. Those lesions may be successfully treated with progestagens. Graft recipients, however, host other risk factors for carcinogenesis, thus frequent clinical surveillance should be strongly recommended in that group of women. Appropriate prophylaxis and treatment of premalignant lesions may lead to decreased risk of endometrial cancer and the rate of invasive procedures performed in those immunosuppressed patients.

Abstract# 64 Poster Board #-Session: P64-I

HEPATOPULMONARY SYNDROME – MORBIDITY AND SURVIVAL AFTER LIVER TRANSPLANTATION.

Maristela Deberaldini[1], Ana Beatriz B. Arcanjo, Renato F. da Silva[1], Helen C. C. Felicio[1], Paulo C. Arroyo, Jr.[1], William J. Duca[1], Marcia F. da Rocha[1], Elisabete de Melo[1], Rita C. M. A. da Silva[1]. *[1]Liver Surgery and Transplantation Unit, FAMERP - Faculty of Medicine of Sao Jose do Rio Preto, Sao Jose do Rio Preto, Sao Paulo, Brazil.*

Hepatopulmonary syndrome (HPS) is a clinical triad including intrapulmonary vascular dilation (IPVD), arterial hypoxemia and liver disease. Liver transplant is the only cure for HPS. However, association between HPS and adverse results has been reported with liver transplant. Data on long-term survival for liver recipients with HPS are scarce. Our aim was to evaluate short-term complications and short- and long-term survival post liver transplant for patients with and without HPS. Fifty-nine cirrhotic patients consecutively transplanted from October 2001 to May 2004 were included. They were divided in two groups: with HPS (n=25) and without HPS (Control group n=34). IPVD was diagnosed by contrasted echocardiogram. Hypoxemia was defined as $D(A\text{-}a)O_2 \geq 15$ mmHg. Studied variables were: immediate survival (within the hospitalization post-transplant period), late survival (48 months), causes of death, hospital stay, time of ICU, time of ventilatory support, re-intubation rate and complications. The results were analysed using T-test, Mann-Whitney, ANOVA and chi-squared tests. The HPS and Control Groups were homogeneous in respect to age (p-value = 0.36; 43.8 ± 12.2 vs. 46.9 ± 13.5), gender (p-value = 0.47), severity of liver disease and the presence of ascitis. The PaO_2 was significantly lower (74.9 ± 12.1 vs. 93 ± 6.4 mmHg; P-value < 0.001) and the $D(A\text{-}a)O_2$ was significantly higher in the HPS Group versus Control Group. Mild, moderate and severe/very severe hypoxemia occurred in 40%, 44% and 16% of the HPS patients, respectively. There were no significant differences between the groups for early survival (68% vs. 77%; p-value = 0.27), late survival (60% vs. 64%; p-value = 0.67); time in ICU (median 7.0 vs. 5.5; p-value = 0.41); time on ventilatory support (median 38.0 vs. 27.5; p-value = 0.43); re-intubation rate (32.0% vs. 23.5%; p-value = 0.45) and complications in the immediate post-transplant period (p-value = 0.72). In conclusion, there were no significant differences in the results of liver transplantation for patients with and without HPS regarding immediate morbidity, early and late survival 48 months after the procedure. The predominance of patients with mild and moderate hypoxemia in the HPS group may have influenced our results.

Abstract# 65 Poster Board #-Session: P65-I

CYSTATIN C AND URINE MICROSCOPY: A NEW STRATEGY FOR MONITORING OF RENAL DYSFUNCTION IN PATIENTS AFTER LIVER TRANSPLANTATION.

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Background: One of the challenges of renal studies in patients after liver transplantation is the accurate measurement of renal function. Serum creatinine is widely used as marker for glomerular filtration rate, but it depends on various nonrenal factors and major changes will occur late in the course of progressive renal impairment.

We evaluated cystatin C and urine microscopy for detection of renal dysfunction in patients after liver transplantation.

Methods: From November 2003, 90 liver transplant recipients at various intervals from liver transplantation were included to our follow-up. Every three month we investigated serum creatinine, renal creatinine clearance

and cystatin C as marker for renal function. Furthermore urinary sediment was examined by urinary test, automated urinary sediment analyser and urine microscopy.
In patients with reference to renal deterioration we tried to modify immunosuppressive therapy by adding calcineurininhibitor-sparing agents. Furthermore we optimized the long-term control of hypertension, diabetes and hyperlipidemia. Infections of the urinary tract were detected early by urine microscopy and treated, even when there was no clinical appearance and the urinary test was negative.
Results: The results of our study showed that concerning the renal function cystatin C is more sensitive than creatinine and creatinine clearance. The microscopy of the urine sediment showed the highest sensitivity compared with the other methods. Concerning damages of the kidney urine microscopy offered the best possibility to identify the etiology. During the follow-up and after adequate and early therapy, 21.4% of our patients showed an amelioration of renal function after a few month.
Conclusions: The early identification of renal failure and its etiology are necessary in patients after liver transplantation. In cases of acute and early chronic calcineurininhibitor-induced renal impairment the damage is reversible and dose reduction can ameliorate chronic nephropathy. The results of our study confirmed cystatin C as early prognostic marker for patients with renal dysfunction. In combination with urine microscopy renal dysfunction could be detected in time and renal function could be protected.

Abstract# 66 Poster Board #-Session: P66-I

SEQUENTIAL ULTRASOUND EXAMINATION OF TRANSPLANTED LIVER ALLOGRAFTS CORRELATE WITH ISCHEMIA-REPERFUSION INJURY AND PROVIDE CLINICALLY RELEVANT INFORMATION ON VASCULAR SUPPLY. Joan C. Prowda[1], Irene J. Lo[2], John F. Renz[2]. *[1]Department of Radiology, Columbia University Medical Center, New York, NY, USA; [2]Department of Surgery, Columbia University Medical Center, New York, NY, USA.*

Objective: Portable ultrasound equipment with sophisticated Doppler capacity facilitates sequential evaluation of transplanted liver allografts (TLA) from reperfusion through recovery. This study evaluates TLA vascular patterns within the initial 7 days following liver transplantation (LTX).
Methods: Retrospective analysis of 31 LTX between 09/05 and 11/06 was performed (IRB-AAAC1763). Doppler evaluation of the TLA included intra-operative reperfusion with sequential follow-up for 7 days. Portal vein, hepatic vein, and hepatic arterial signals where scored for waveform, flow, systolic and diastolic velocity by an attending radiologist. Vascular patterns were correlated with donor characteristics (age, serologies, acid/base, procurement type: donation after brain death, donation after cardiac death, living-donation), cold ischemic time, warm ischemic time, ischemia-reperfusion (I/R) injury (aspartate aminotransferase[AST] > 25X upper normal limit), and pattern of I/R recovery.
Results: Normal hepatic arterial, portal venous, and hepatic venous waveforms were observed in >90% of TLA at reperfusion. Abnormal hepatic arterial waveforms at reperfusion (7%) demonstrated poor diastolic flow and significantly correlated with LTA obtained from donors who experienced physiologic injury as evidenced by markedly elevated transaminases (>5X upper normal limit) or metabolic acidosis ($p<0.05$). Conversion from tri-phasic to mono-phasic hepatic venous flow within 24hr of LTX also correlated with I/R injury and returned to baseline later than liver function. Sequential examination provided convincing evidence to explore two patients for suspected hepatic arterial and portal venous thrombosis prior to clinical indications thereby preserving TLA function.
Conclusion: Sequential ultrasound interrogation of transplanted liver allografts incorporating data obtained from the moment of reperfusion demonstrate characteristic changes associated with I/R injury and provide clinically significant information with respect to vascular supply.

Abstract# 67 Poster Board #-Session: P67-I

LONG-TERM RESULTS OF A RANDOMIZED TRIAL ON IMMUNOSUPPRESSION WITH TRANSPLANTATION IN HUMAN. Mario Angelico[1], Daniele Sforza[1], Leonardo Baiocchi[1], Ilaria Lenci[1], Daniele Di Paolo[1], Alessandra Petrolati[1], Laura Tariciotti[1], Andrea Monaco[1], Alessandro Anselmo[1], Giuseppe Tisone[1]. *[1]Liver Transplant Center, University of Tor Vergata, Rome, Italy.*

BACKGROUND: Corticosteroids are widely used for immunosuppression after liver transplantation, however their utility in this setting, is far from certain. On the other hand steroid use is associated with considerable short and long-term side effects. In 1999 we published the one year results of a randomized study on immunosuppression with or without steroids after liver transplantation, in human. Our data demonstrated that, in this short follow-up, non use of steroid gives similar results in terms of graft and patient survivorship, rejection, or complications. In this study we re-evaluated our cohort of patients in order to assess differences in the long-term (ten years follow-up). **METHODS:** Forty-five patients undergoing liver transplantation for various indications were randomized to receive immunosuppression with cyclosporin + azathioprine with (Group A; n=22) or without prednisone (Group B; n=23), in conventional doses. Prednisone, was withdrawn within 3 months after transplant. Mean follow-up was 108 ± 4 months. The study end points were graft and patient survival, infectious complications, rejection, kidney function, and metabolic complications.
RESULTS: 14 deaths occurred, 9 of which died on short-term (4 in group A; 5 in group B), 5 patients were died on long term (3 in group A; 2 in group B), no patients died for reject related causes. Long-term survival was not different between the two groups (63.7% group A vs. 74.1%, group B). No differences were observed in regard to graft function, infectious complications and kidney function, as well as on incidence and severity of acute rejection. Four patients in each group had acute rejection (3 severe and 1 mild in group A; 1 severe and 3 mild in group B). In regard to metabolic complication, a similar proportion of patients (~ 20%) presented diabetes in the two groups.
CONCLUSIONS: The long-term results of our randomized prospective study suggest that routine administration of prednisone after liver transplantation is not required. In fact its non use is associated with similar incidence of patients and graft survivorship, rejection events and metabolic complications.

Abstract# 68 Poster Board #-Session: P68-I

RENAL FUNCTION EVALUATION AFTER ORTHOTOPIC LIVER TRANSPLANTATION. Alfeu M. Fleck, Jr.[1], Claudio A. Marroni[1]. *[1]Grupo de Transplante Hepático Adulto ISCMPA, Irmandade da Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil.*

Background: Orthotopic Liver Transplantation (OLT) is considered definitive treatment to terminal liver disease. New immunosuppressive therapy, the calcineurin inhibitors (CNI), has reduced graft rejection allowing longer survival of grafts and patients. These drugs have some adverse effects, such as nephrotoxicity. Renal impairment after OLT is very prevalent, influencing morbidity and mortality. The most significant renal impairment occurs in the first months after OLT. Pre, trans and post-OLT factors contribute to renal impairment. Some diagnostic methods used to measure renal function are not accurate. The gold-standard method for renal function evaluation is the glomerular filtration rate (GFR).
Objectives: 1) evaluate renal function through the measure of GFR in the first three months post-OLT and compare it to the rate pre-OLT; 2) identity risk factors related to changes of renal function in the first three months after OLT; 3) evaluate the relationship between blood levels of CNI and changes of renal function.
Patients and Methods: Evaluated adult patients on a liver transplant waiting list followed for three months after OLT and measured the GFR using ^{51}Cr-EDTA. Possible variables involved in the renal function impairment were analyzed. Before OLT: diabetes mellitus and Child-Pugh score. In the intraoperative: transfusion of packet cells and hemodynamic instability. Post-OLT: ascites, infection episodes and blood levels of CNI.
Results: Evaluated 30 patients. The average age was 55 years old and 66,7% were male. Indication for OLT was HCV cirrhosis in 73,3% and Child-Pugh B or C in 66,7%. Before OLT, the average GFR was 73,8 ± 34,8 mL/min; 43,9 ± 13,7 mL/min in the first month post-OLT and 42,9 ± 13,2 mL/min three months post-OLT *($p<0,001$)*, with an average GFR reduction of 41,9%. No significant difference was observed between the first and the third months post-OLT GFR. No evaluated variable was associated to GFR reduction.

Patients with mean blood tacrolimus level ≤ 11 ng/mL showed a GFR reduction of 22,9%, while those with mean blood tacrolimus level > 11 ng/mL showed a GFR reduction of 40,2% *(p=0,09; CI 95%: -3,1 - 37,6%).*
Conclusions: This study shows that significant renal function impairment occurs after OLT. No evaluated risk factors were found to be involved with post-OLT renal impairment. There was a tendency of more significant renal impairment in patients with higher tacrolimus blood levels.

Abstract# 69 Poster Board #-Session: P69-I

ROLE OF LIVER TRANSPLANTATION IN ADVANCED BUDD-CHIARI SYNDROME: LONG-TERM FOLLOW-UP OF 42 PATIENTS. Frank Ulrich[1], Johann Pratschke[1], Ulf Neumann[1], Zelal Güngör[1], Natascha Nüssler[1], Jan Langrehr[1], Sven Jonas[1], Peter Neuhaus[1]. *[1]General, Visceral and Transplantation Surgery, Charité, Campus Virchow Clinical Centre, Berlin, Germany.*
Purpose: Advanced forms of thrombotic occlusion of postsinusoidal venous outflow with severe liver dysfunction or failure can be effectively treated by liver transplantation. Aim of this study was the analysis of outcome and specific complications when compared to other indication groups.
Methods: Between 1988 and 2006 we performed 1971 orthotopic liver transplantations (OLT) in our institution. Frequency of OLT for Budd-Chiari syndrome (BCS) was 2,1 % (n=42) with 14 cases of acute BCS and 28 cases seen with a chronic form. Twenty-nine (74%) women and 10 men (26%) had an average age of 38 (14-66) years, the mean follow up period was 78,4 (1-195) months. Patients were classified as Child B in 56,8 % of the cases, followed by Child C with 32,4 % and Child A with 10,8 %. Etiologically 25 patients had a preoperative diagnosis of hematologic disease, including myeloproliferative disorders, Factor V Leiden, antiphospholipid syndrome, heparin associated or idiopathic thrombocytopenia and polycythaemia. BCS-related interventions before transplantation were TIPS in 8 and surgical shunt in another 2 patients.
Results: The actuarial 5-year survival for the BCS subpopulation (n=39) is 88,9 % in comparison to 81,3 % for other indications (n=1539). Analyzing graft survival rates after 5 years, favourable results with 78,5 % in BCS patients compared to 72,8 % in other patients can be observed. The differences are not significant in statistical analysis. Concerning the preoperative occlusion type, liver veins (90,7%) were followed by portal vein (23,3%) and vena cava (16,3%). Retransplantation was necessary in 3 patients (7,1%) with initial non function or recurrent thrombosis. While the number of reoperations for bleeding was lower in the BCS-group, incidence of postoperative thrombosis or stenosis was significantly higher. Thrombosis of portal vein occured in 4,8% vs. 0,8% of the patients, while liver veins were affected in 2,4% vs. 0,2%. Bile duct stenosis was observed in 8 patients (20%), ischemic type biliary lesions in another 4 cases (1%).
Conclusions: Our data shows that advanced BCS with acute liver failure or chronic progressive forms can be successfully treated by OLT. Despite higher rates of vascular complications, patients and graft survival are similar or even better when compared to other indication groups.

Abstract# 70 Poster Board #-Session: P70-I

LONGTERM SURVIVAL AFTER MULTIPLE RETRANSPLANTATIONS OF THE LIVER; A SINGLE CENTER EXPERIENCE. Susumu Eguchi[1], Hynek Mergental[1], Danielle Nijkamp[1], Herman Hendriks[1], Rene Scheenstra[1], Els Haagsma[1], Aad vd Berg[1], Maarten Slooff[1]. *[1]Liver Transplantation Group, University Medical Center Groningen, Groningen, Netherlands.*
In view of the scarcity of donor livers the question arises whether it is justified to use multiple grafts for single patients. The aim of this study is to assess patient survival after multiple retransplantations (re-Tx) in our institution from March 1979 till Januari 2006 (Study period). Follow-up ended 01-12-2006. Data concerning patient demographics and operative variables were collected from the institutional Database. Patient and graft survival were computed with the Kaplan-Meier method and differences analyzed with the log rank test. In the study period 751 patients underwent 907 transplantations. 552 Adult patients (> 17 years) had 632 grafts and 199 children (≤ 17) had 275 grafts. Re-Tx were performed in 129 patients (17%), 69 adults (12.5%) and 60 children (30%). Twenty patients (2.6%), eight adults (1.4%) and 12 children (6%) had a second re-Tx and formed the study group. Seven of these patients (1%) had also a third re-Tx, three adults (0.5%) and four children (2%). In adults the indication for primary transplantations was acute liver failure (ALF) in four patients, PSC in two cases and auto immune hepatitis and HBV cirrhosis each in one case. In children the primary indications were Tyrosinemia in five cases, Biliary Atresia in four and ALF, secondary biliary cirrhosis and M.Alagille each one case. The median (range) interval between the first transplantation and first re-Tx was 55 months (1-155) in adults and 2 months(0-112) in children. The median interval between the first and second re-Tx was 36 months (0-149) in adults and 0 months (0-173) in children. The median interval between the second and third re-Tx was one month (0-1) in adults and children. All third re-Tx were performed during the same admission as for the second re-Tx. Overall seven patients (35%) died, three adults (37.5%) and four (33%) children. Two adults and two children died after the second re-Tx and one adult and two children died after the third re-Tx. Overall actuarial 1, 5 and 10 year patient survival from the first transplantation till patient death or end of follow-up was 100%, 85% and 64% respectively. For adults; 100%, 88% and 58% and children: 100%, 83% and 69% (p=ns).
Long term patient survival after multiple re-Tx is rewarding. However for these 20 multiple re-Tx patients 67 grafts were needed.

Abstract# 71 Poster Board #-Session: P71-I

RESULTS IN LIVER TRANSPLANTATION FOR HCC: AN INTENTION-TO-TREAT ANALYSIS FOR 191 PATIENTS. Lucio Mandalà, Marcello Spampinato, Giovanni Vizzini, Domenico Biondo, Salvatore Gruttdauria, Marco Spada, Antonio Arcadipane, Angelo Luca, Ugo Palazzo, Bruno Gridelli. *[1]Transplantation Surgery, Istituto Mediterraneo Trapianti e Terapie ad Alta Specializzazione-University of Pittsburgh Medical Center in Italy, Palermo, Italy.*
HCC is curative by liver transplantation (LT), even if the risk of tumor progression increases the drop-out rate from the waiting list (WL). Living donor liver transplant (LDLT), split liver transplant (SLT) and the marginal whole LT (MWGT) used as a systematic approach reduce the waiting list drop-out rate; 191 patients with HCC out of 697 were listed for LT at our center between July 1999 and November 2006 according to the Milano criteria: 110 received a primary LT, 33 are currently on the WL, 16 deceased while on the WL and 32 were excluded for tumor progression. Among the 110 LT patients, 76 underwent whole LT (31 were MWLT), 23 an LDLT, and 11 a SLT. We performed a intention-to-treat analysis among two groups of HCC patients that received a LT: group 1 includes 15 HCC patients transplanted between July 1999 and June 2003, group 2 includes 95 patients transplanted between June 2003 and November 2006, when we implemented the systematic use of LDLT, SLT and MLGT (Table 1). **Results.** The Overall survival (OS) rate at 36 months was 83% among the transplanted HCC population. No statistical differences (p 0.72) were found between group 1 (OS 80%) and 2 (84%). Moreover the HCC OS rate of the two groups was not statistically different (p 0.8) compared to that of the LT patients without HCC (87% for a total of 169 patients). The drop-out rate went from 22 to 4% before and after June 2003. The intention-to-treat analysis showed that the OS was not statistically different between the two groups (group 1, 58.46%; group 2, 62.80%, p 0.8) and between HCC (group 1, 66%; group 2, 68.84%) and non-HCC (group 1, 66%; group 2, 68.84%) transplanted patients. **Conclusion** Strategies based on the tumor-related selection criteria are used to prevent waiting list drop-out. Based on our experience we concluded that in a region where the shortage of deceased donors is very high, the drop-out rate reduction for HCC patients related to tumor progression is possible with a program that systematically uses all of the current options for LT.

Table 1

		global LT/HCCLT		
total/HCC		279/95		
	nonMWLT	MWLT	LDLT	SLT
Group 1(total/HCC)	22/5	42/5	6/5	0/0
Group 2 (total/HCC)	70/40	59/26	52/18	28/11

Abstract# 72 Poster Board #-Session: P72-I

LESSONS LEARNED FROM LIVER TRANSPLANTATION FOR AUTOIMMUNE HEPATITIS. Hatem Khalaf, Walid Mourad, Yasser El-Sheikh, Yasser Medhat, Ayman Abdo, Hamad Al-Bahili, Mohammed Al-Sagheir, Mohammed Al-Sofayan, Mohamed Al-Sebayel. *[1]Liver Transplantation, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia.*

Purpose: To present our experience with deceased donor liver transplantation (DDLT) and living-donor liver transplantation (LDLT) for Autoimmune Hepatitis (AIH).

Patients and Method: Between April 2001 and November 2006, a total of 117 LT procedures were performed (73 DDLTs and 44 LDLTs) in 113 patients (4 re-transplants). Out of the 113 recipients, 16 patients (14.2%) were transplanted for AIH (15 DDLTs and 1 LDLT). All recipients received FK506 and steroid based immunosuppression.

Results: Male/female ratio was 3/13, median age was 22 years (range, 15-35), median MELD score was 25 (range, 11-40, median blood transfusion 6 units (range, 0-65), median ICU stay 5 days (range, 2-24), and median hospital stay 11 days (range, 7-58). Arterial reconstruction was needed in 4 DDLTs due to severe steroid-induced angiopathy. After a median follow-up period of 530 days (range, 11-2016), the overall patient and graft survival rates were (93.8%). Only one patient died after LDLT due to primary graft non-function. Histopathological recurrence was seen in 3 patients (18.7%) and was successfully treated by optimizing immunosuppression. Markedly elevated serum CA19-9 levels (median 1069, range 217-2855) was seen in 4 patients (28%), malignancy was preoperatively ruled out in all patient; histopathologic examination of the explanted livers excluded malignancy, and showed extensive bile ductular proliferation, immunohistochemical stains for CA19-9 showed intense membranous uptake in all bile ductules. Proliferative indices using Ki-67 antibody showed surprisingly low levels of proliferation (<1%) which strongly suggests absence of malignancy; all 4 patients normalized serum CA19-9 levels within the first three months post-transplant. Steroids withdrawal failed in all recipients and was always accompanied with almost immediate elevation of liver enzymes.

Conclusions: In our experience, LT for AIH showed excellent long-term outcome, patients are usually young females who present with acute deterioration and high MELD scores; and usually require long-term steroids to prevent rejection and disease recurrence. Some patients have markedly elevated serum CA19-9 level in absence of malignancy. Some patients also have severe steroid-induced hepatic artery angiopathy necessitating arterial reconstruction during the transplant surgery.

Abstract# 73 Poster Board #-Session: P73-I

DOPPLER ULTRASOUND HEPATIC ARTERIAL RESISTIVE INDICES ARE SIMILAR AFTER HISTADINE-TRYPTOPHAN KETOGLUTARATE (HTK) OR UNIVERSITY OF WISCONSIN (UW) PRESERVATION IN LIVER TRANSPLANTATION. Eduardo J. Ramos, Julie K. Heimbach, Scott L. Nyberg, Michael B. Ishitani, Charles B. Rosen. *[1]Transplant Center, Mayo Clinic, Rochester, MN, USA.*

Introduction: Histadine-Tryptophan-Ketoglutarate (HTK) and University of Wisconsin (UW) have been shown to have similar efficacy in liver allograft preservation. Soon after our organ procurement organization switched from UW to HTK preservation during 2005, we noted several patients with higher postoperative liver enzymes and elevated resistive indices than we had previously seen with UW. We thus reviewed our experiences with HTK and UW solutions during a later time period with the specific **aim** to quantitatively assess the effects of HTK and UW on early post transplantation hepatic artery resistive indexes.

Methods: We compared postoperative Doppler ultrasound findings and postoperative transaminase levels between groups of adult patients with liver allografts preserved in HTK versus UW solution for the time periods of January through April – 2006 for HTK and 2005 for UW. Two patients were excluded due to perioperative death and hepatic artery thrombosis. Resistive indices in the main hepatic artery were measured on post-operative days 1, 7 and 21. Vascular and biliary complications were evaluated as well as days 1, 7 and 21 AST and ALT levels and incidence of acute rejection. Statistical comparisons were made with Student's *t* test.

Results: Thirty-five patients underwent OLT with UW preservation during January – April 2005, and 22 patients underwent OLT with HTK during January – April 2006. There was no difference in patient age (57.3±14.2 vs. 49.9±20.5) or donor age (56.4±7.7 vs. 52.7±11.2) between the HTK and UW groups. There were no differences in AST and ALT levels on postoperative days 1, 7, and 21. There was no difference in early (within 21 days) cellular rejection – 32% for HTK and 29% for UW. There were also no differences in the incidences of vascular (9% vs. 14%) or biliary (14% vs. 14%) complications between the HTK and UW groups. Doppler ultrasound resistive indices were similar on postoperative days 1, 7, and 21.

Conclusion: Despite having higher postoperative liver enzymes and hepatic arterial resistive indices during our early experience with HTK, these differences were not apparent in our matched control, retrospective study.

	POD#1	POD#7	PO#21
HTK	0.77±014	0.71±0.10	0.70±0.08
UW	0.76±0.13	0.71±0.09	0.67±0.11

Abstract# 74 Poster Board #-Session: P74-I

RISK FACTORS ASSOCIATED WITH THE OCCURRENCE OF DEATH IN PATIENTS SUBMITTED TO ORTHOTOPIC LIVER TRANSPLANTATION (OLT). Lisia Hoppe[1], Claudio A. Marroni[2], Maria Lucia Zanotelli[2], Guido P. C. Cantisani[2], Ajacio B. M. Brandao[2]. *[1]Programa de Pos-Graduacao/Hepatologia, Fundacao Faculdade Feceral de Ciencias Medicas, Porto Alegre, Rio Grande do Sul, Brazil; [2]Grupo de Transplante Hepatico, Complexo Hospitalar Santa Casa, Porto Alegre, Rio Grande do Sul, Brazil.*

Introduction: OLT is well-established as an effective therapy in the treatment of terminal chronic liver diseases, and thus the identification of risk factors associated with post-OLT mortality may help improve it.

Patients and methods: The study included patients submitted to OLT at the Complexo Hospitalar Santa Casa of Porto Alegre from Jan 1999 to Dec 2001. Patients retransplanted and with less than 6 months of survival were excluded. Causes of death were reviewed during the observation period. Infection with CMV, the presence of acute cell rejection (ACR), double/triple immunosuppression, and the type of calcineurin used were analyzed as regards the occurrence of death.

Results: A total of 163 OLT were conducted in 154 patients; 115 individuals were included, with mean age of 50.3 ±10.7 years, 73 (63.5%) of whom were males, with etiology of liver disease predominantly viral (49.6%). Most patients received double immunosuppression with corticoid and calcineurin inhibitor (86.8%). 24 deaths occurred during the observation period (sepsis - 10, fibrosant cholestatic hepatitis - 3, cirrhosis due to HCV - 3, lymphproliferative disease – 3, and cardiovascular - 3). The mortality rate was 0.52 deaths per 100 patients-month (one death for each 200 months of observation). Of the analyzed risk factors, only presence of ACR was determinant for the occurrence of death, with a 3.6 greater risk of death than for the patients without ACR (mortality rate of 0.22).

Conclusion: The infectious causes, viral or bacterial, are highly prevalent in the population of transplanted patients; however, in the population under study, only ACR was determinant for the occurrence of death.

Abstract# 75 Poster Board #-Session: P75-I

DYNAMICS OF HEMATOLOGICAL DATA AFTER LIVING DONOR LIVER TRANSPLANTATION IN JAPANESE PATIENTS. Masatoshi Ishigami, Yoshiaki Katano, Yasuhiro Fujimoto, Tetsuya Kiuchi, Hidemi Goto. *[1]Department of Gastroenterology, Nagoya University School of Medicine, Nagoya, Japan; [2]Department of Transplant Surgery, Nagoya University School of Medicine, Nagoya, Japan.*

<Backgrouds and Aims> Pancytopenia is known to be a common findings in cirrhotic patients. This disorder was shown to be improved after liver transplantation because of the relief from portal hypertension and hypersplenism. Change of hematological data were shown in the old study, but there are no data for this issue after living donor liver transplantation (LDLT). In this study, we investigated the hematological data after LDLT in Japanese patients in detail.

<Patients and Methods> 32 patients (21 males and 11 females, 12 HCV, 12 HBV, 4 PBC, 2 PSC, each 1 of cryptogenic and cholestatic cases, respectively) who received LDLT for liver cirrhosis and survived at least 6 months postoperatively were included in this study. We collected monthly data within 1year after liver transplantation and compared the dynamics of each hematological data. In statistical analysis for finding predictive factors, Student's t-test was used for continuous values, Mann-Whitney U test was used for incontinuous values, and Chi-square test was used for categorical values. In multivariate analysis, multiple logistic regression test was conducted. $p<0.05$ was considered as statistically significant.

<Results> Dynamics of each hematological cell components were quite different. White Blood Cell(WBC) count reached peak level in 1 POM, and then rapidly returned to baseline levels. Platelet(Plt)count gradually increased until 3 POM and then reached plateau level. Hemoglobin levels slowly went up continuously until 12 POM. The ratio between peak levels and baseline levels were 1.56±0.82(WBC),2.20±1.03(Plt), 1.19±0.27(Hb),respectively. We then tried to find the predictive factors of postoperative platelet count on 3POM after transplantation, only preoperative platelet count was selected as a significant predictive factor.(univariate; p=0.0023, multivariate; p=0.0235). Preoperative platelet>30,000 is considered as significant to predict platelet count>100,000 on 3POM(p=0.0386).
<Conclusions>We showed different dynamics of each hematological cell components after LDLT. This study include the important basic data for not only prediction of postoperative hematological dysfunction, but also considering the indication of splenectomy, especially in case of HCV for avoiding hematological side effect of postoperative treatment with IFN.

Abstract# 76 Poster Board #-Session: P76-I

USE OF SELECTIVE INTERNAL RADIATION SPHERES (SIR-S) AS A BRIDGE FOR LIVER TRANSPLANTATION: TWO CASE REPORTS. Alejandro Mejia[1], Cheryl Levine[1], Abdullah Mubarak[1], Travis Vanmeter[1], Jeffrey Weinstein[1], Stephen Cheng[1], Reem Ghalib[1]. *[1]Liver Institute, Methodist Dallas, Dallas, TX, USA.*

Intro: The use of SIR-S as a bridging therapy for Liver Transplantation (LT) is not well established.Several reports have confirmed its efficacy for control of metastatic disease to the liver and in the setting of unresectable hepatocellular carcinoma (HCC).In this report we present the first two cases reported of successful downstaging of HCC prior to LT with this specific intrahepatic therapy.

Case 1: A 72 yo Male with cryptogenic cirrhosis underwent MRI as part of his follow-up.A 2.8 cm enhancing lesion near the dome of the liver was discovered.He was listed for LT and a MELD exception score was obtained. The tumor was treated with SIR-S with no side effects.One month later he underwent a successful LT.Explant showed a 2.5 cm lesion with 90% necrosis. At 18-month follow up he remains recurrence free.

Case 2: A 62 yo Female with Hepatitis C and cirrhosis underwent MRI of her liver.A 4 cm lesion was found on the right lobe.Due to cardiac issues,her listing for LT was delayed.In the meantime she was treated with SIR-S for tumor control.Six months later she underwent an uncomplicated LT.Explant pathology showed 75% necrosis of tumor.At short-term follow up she is doing well.

Conclusion: SIR-S offers an alternative therapy for tumor management on patients awaiting LT.Main advantages include a high killing rate (75-90% in our two patients);the possibility to repeat the treatment more than once, the option of combination therapy with other modalities such as radiofrequency ablation or TACE; the minimal side effects when performed properly by experienced interventional Radiologists.Main disadvantage is cost.Larger series are needed to confirm our findings and to establish the best options for patients with HCC awaiting LT.

Abstract# 77 Poster Board #-Session: P77-I

BILE DUCT INJURIES: MANAGEMENT FROM THERAPEUTIC ENDOSCOPY TO LIVER TRANSPLANTATION. Rodrigo Amil[1], Marcelo Enne[1], Alexandre Cerqueira[1], Jefferson Alves[1], Jose Martinho[1], Glauber Gouvea[1], Lucio Auler[1], Rodrigo Diaz[1], Elisabeth Balbi[1], Lucio Pacheco[1]. *[1]Liver Transplantation Unit, Bonsucesso General Hospital, Rio de Janeiro, Brazil.*

Background / Aim. Bile duct injury (BDI) remains the most serious complication of cholecystectomy with unpredictable long-term results. If these lesions are not adequately treated, they can lead to hepatic failure or secondary biliary cirrhosis (SBC) requiring liver transplantation. The purpose of this report is to describe the experience with BDI after 4 years performing hepatobiliary surgery and liver transplantation.

Methods. We report the presentation, treatment and results of 38 referred patients with BDI treated in our center from March 2002 to November 2006.

Results. The median age of the 38 patients was 39 years, ranging from 11 to 68 years. The male:female ratio was 1:3. Twenty-three (60,5%) BDI were from laparoscopic cholecystectomy, 8 (21%) from open cholecystectomy and 7 (19,5%) from others. Jaundice was the clinical presentation in 18, cholangitis in 13, pruritus in 4, biliary leak in 4 and 11 had only laboratorial changes. BDI classification was Bismuth I in 14 (37%), II in 9 (23,5%), III in 6 (15,5%), IV in 5 (13%), V in 2 (5%) and 2 had no classification. 29 patients (76,3%) had at least one previous operative procedure trying to repair the BDI. 4 patients (10,5%) have indication for liver transplantation (3 with SBC and 1 with total iatrogenic necroses of the biliary tree after retrograde endoscopy cholangiopancreatografy). 33 (86,8%) patients were submitted to hepaticojejunostomy. Just one patient had endoscopic treatment. 2 patients died (one waiting liver transplantation and one with post operative sepsis).

Conclusion. BDI is more associated with laparoscopic cholecystectomy. Although BDI can usually be treated successfully by surgery, patients with severe injuries develop irreversible liver disease and will require liver transplantation.

Abstract# 78 Poster Board #-Session: P78-I

INFECTION BY CYTOMEGALOVIRUS (CMV) AND ITS RELATION WITH MORTALITY FOLLOWING ORTHOTOPIC LIVER TRANSPLANTATION (OLT). Lisia Hoppe[1], Claudio A. Marroni[2], Ajacio B. M. Brandao[2], Maria Lucia Zanotelli[2], Guido P. C. Cantisani[2]. *[1]Pos-graduacao/Hepatologia, Fundacao Faculdade Feceral de Ciencias Medicas, Porto Alegre, Rio Grande do Sul, Brazil; [2]Grupo de Transplante Hepatico, Complexo Hospitalar Santa Casa, Porto Alegre, Rio Grande do Sul, Brazil.*

Introduction: Infection with cytomegalovirus (CMV) is prevalent in developing countries. Postoperative complications have been linked to the presence of CMV, with increased morbidity in the post-IOF period and a negative impact on survival.

Patients and methods: Retrospective analysis of 163 OLT conducted in 154 patients from 1999 to 2001. A total of 115 patients were included in the study; 39 patients were excluded, who died within the first 6 months and/or were retransplanted. Records were made of the cause of death and history of previous infection with CMV

Results: A total of 24 deaths occurred within the three-year follow-up. Deaths were related to sepsis in 41.7 % of the cases (n=10), 8 of which with history of previous infection by CMV. The other causes of death and their relation with CMV infection are shown in Table 1.

Conclusion: Of the 24 deaths that occurred in the studied period, 16 were correlated with previous CMV infection, thus raising the hypothesis that this infection can facilitate or predispose the emergence of morbidities that may determine increased mortality.

CAUSES OF DEATH IN PATIENTS SUBMITTED TO ORTHOTOPIC LIVER TRANSPLANTATION (n=24) AND CYTOMEGALOVIRUS INFECTION (n=16)

	DEATHS	INFECTION
	n (%)	n (%)
SEPSIS DUE TO FUNGAL INFECTION	4 (16.7)	4 (25)
SEPSIS DUE TO BACTERIAL INFECTION	6 (25.0)	4 (25)
FIBROSANT CHOLESTATIC HEPATITIS	3 (12.5)	1 (6.25)
DECOMPENSATED HCV CIRRHOSIS	3 (12.5)	1 (6.25)
LINPHPROLIFERATIVE DISEASE	3 (12.5)	2 (12.50)
CARDIOVASCULAR DISEASE	3 (12.5)	3 (18.75)
OTHER	2 (8.3)	1 (6.25)

Abstract# 79 Poster Board #-Session: P79-I

INTESTINAL TUBERCULOSIS AFTER LIVER TRANSPLANTATION. Ivan Zyngier, Ana Carolina Gonzalez, Joyce Roma, Kelly Flausino, Zulane Veiga, Maricarmem Pan, Cassia Guedes, Denise Leite, Jefferson Alves, Rodrigo Amil, Marcia Halpern, Alexandre Cerqueira, Marcelo Enne, Lucio Pacheco-Moreira, Elizabeth Balbi. *[1]Liver Transplantation Unit, Hospital Geral de Bonsucesso, Rio de Janeiro, Brazil.*

Introduction - The increasing prevalence of extra-pulmonary forms of tuberculosis is thought to result from migratory movements of people and from conditions leading to imunossupression (AIDS,cancer,drugs). Multirresistant strains and drugs intolerance make early diagnosis important in therapy.

Case Report - A 17 year female received a liver transplantation for fulminant hepatitis of suspected autoimmune etiology in 2003, and was in a triple imunossupressive regimen (prednisone 15 mg/day, micofenolate1g/day and tracolimus 6 mg/day) . A few weeks before coming to our attetion she presented with a history of muscle pain and odinofagia, which was initially treated as bacterial tonsilitis with no response. Two weeks later she presented with abdominal pain and daily fever and was admitted to hospital for investigation.

Physical examination revealed pain in the rigth lower quadrant of the abdomen on deep palpation. Abdominal US and CT scan revealed thickening of the intestinal wall in the cecum. Colonoscopy showed friable ulcerated lesions in the cecum with irregular borders which were submitted to biopsis. Histopathological analysis showed granulomas and an eosinophilic infiltrade, and the Ziehl-Nielsen stain confirmed the presence of numerous acid-fast bacilli.

Treatment was initiated with isoniazid, rifampin and pirazinamid, and was interrupted after the first week due to an elevation of AST/ALT. The treatment was then switched to streptomicin, etambutol and levofloxacin and was followed by vestibular ototoxicity (vertigo) after 30 days. Streptomicin was interrupted, and amicacin was used instead, with complete resolution of the adverse side effects and abdominal pain.

Conclusions- The authors conclude that intestinal tuberculosis is an important differential diagnosis of abdominal symptoms in endemic areas. In transplant patients the diagnosis can be more difficult in view of oligossintomatic presentations . Hepatic transplantation imposes an additional challenge in what concerns the toxicity of drugs and the frequency of adverse reactions.

Abstract# 80 Poster Board #-Session: P80-I

EARLY EXPERIENCE WITH HEADS: HEPATIC ENCEPHALOPATHY ASSESSMENT DRIVING SIMULATOR. Scott L. Nyberg[1], Edwina S. Baskin-Bey[1], Mary M. Mitchell[2], John P. Bida[3], Theodore J. Rosenthal[4], Charmaine A. Stewart[2]. *[1]Transplantation Surgery, Mayo Clinic, Rochester, MN, USA; [2]Gastroenterology & Hepatology, Mayo Clinic, Rochester, MN, USA; [3]Biomedical Engineering, Mayo Clinic, Rochester, MN, USA; [4]Research Engineer, Systems Technology, Inc., Hawthorne, CA, USA.*

Audiovisual simulations of real life driving (i.e. driving simulators) have been used to assess neurological dysfunction in a variety of medical applications. However, the use of simulated driving to assess neurological impairment in the setting of liver disease is limited. Thus, the **AIM** of this study was to develop a scoring system based on driving simulator performance to assess minimal encephalopathy. **METHODS:** This study was conducted as a pilot study. Cirrhotic volunteers (n=15) initially underwent a battery of neuropsychological tests to establish a diagnosis of minimal encephalopathy. Driving simulator performance of cirrhotic volunteers (n=15) was compared to healthy volunteers (n=31) using driving simulator testing which included a collection of 43 parameters during an audiovisual simulated 10 mile course of on-road driving. A driving simulator scoring system was based on logistic regression and univariate correlation. **RESULTS:** Neuropsychological testing classified cirrhotics into two groups, generally cognitively impaired (n=13), and no impairment (n=2). Impaired cirrhotics performed different on the driving simulator when compared to the cohort of healthy and non-impaired subjects. Univariate logistic regression and correlation models denoted 5 of 43 driving simulator variables to be significant predictors of general cognitive impairment as determined by neuropsychological tests, these were used to develop the Hepatic Encephalopathy Assessment Driving Simulator (HEADS) scoring system: Run time (p=0.002), total map performance (p=0.002), number of collisions (p= 0.007), visual divided attention response (p=0.02) and average lane position (p=0.03). The HEADS score (0-9 points) correlated with cognitive impairment, as it had an excellent sensitivity and specificity as measured by Receiver Operator Curve (0.89). In **CONCLUSION**, The HEADS score based on computer-simulated driving is a promising tool for the assessment of minimal encephalopathy.

Abstract# 81 Poster Board #-Session: P81-I

EVOLUTION OF MELD AND CHILD-PUGH SCORES DURING WAITING TIME TO LIVER TRANSPLANTATION. Agnaldo S. Lima[1], Leandro Amado[1], Gustavo V. C. Pinto[1], Carmencita L. M. Ferreira[1], Eduardo G. Vilela[1], Cláudia A. Couto[1], Leandro A. Fonseca[1], Alexandre P. Resende[1], Marcelo M. C. França[1], André L. R. Seabra. *[1]Instituto Alfa de Gastroenterologia, Hospital das Clínicas UFMG, Belo Horizonte, MG, Brazil.*

MELD has been employed worldwide to allocate grafts for liver transplantation (LTx), according to patient's illness severity. In Brazil, it has been used since July 2006. The aim of this study was to verify MELD and Child-Pugh (CHP) evolution during waiting for LTx, before MELD era in Brazil. Recipient selection was done in a chronologic basis.

Patients and method: We reviewed the charts of 557 patients (pts) included in waiting list for LTx from Jan 2000 to Dec 2004. 201 pts were excluded because of urgency indications (n=34), transfer to other centers (n=7), living-donor LTx (n=4) and incomplete data (n=156). 66.8% of the 355 included were men. Main indications were alcoholic (24.5%), virus C (20%) and cryptogenic (14.6%) cirrhosis. Data to calculate MELD and CHP score were retrieved (bilirubin, creatinine, albumin, INR, prothrombin time, ascities and encephalopathy status) from the moment of listing and at the final event (death or LTx). The time in waiting list, correlation of MELD and CHP, and the relationship of MELD and CHP with death were evaluated statistically. Differences were considered significant when $p<0.05$.

Results: During the 5-year period of the study 180 pts were transplanted (50.7%), 103 died (29%), 44 were still in list (12.4%) and 20 were removed from waiting list (5.6%). Initial CHP and MELD scores were, respectively, 8.5±1.8 and 15.9±5.0. At the final event these values were 8.7±2.0 and 17.7±6.5. Comparing LTx pts with those who died before surgery no difference in age could be found (45.4±15.9 vs. 46.5±17.3 years - $p>0.05$). CHP and MELD scores increased from listing to the final event, in LTx pts and in those who died ($p<0.05$). Scores were significantly higher in pts who died ($p<0.05$). Death occurred after a shorter waiting time than necessary to achieve LTx (death 229.4±269.7 days vs. LTx 412.9±242.5 days – $p<0.01$). CHP and MELD scores had good correlation at listing ($r=0.73$) and at the final event ($r=0.69$).

Conclusion: CHP and MELD scores are reliable measurements to apreciate liver disease gravity. They present good correlation and increase as long as disease becomes worse during waiting time to LTx. These data are important to future comparative analysis of organ allocation efficacy in a pure MELD score basis, as recently implemented in Brazil.

Abstract# 82 Poster Board #-Session: P82-I

IMPACT OF MELD SCORE IN THE WAITING LIST TIME IN BRAZIL. Andre I. David[1], Fabiana M. Linard[1], Adriana Z. Coppini[1], Rafael A. Pecora[1], Nancy T. Cordovani[2], Sergio S. Favero[1], Wangles V. Soler[1], Paulo C. Massarollo[1]. *[1]Surgery, Santa Casa, Sao Paulo, SP, Brazil; [2]Pediatrics, Santa Casa, Sao Paulo, SP, SP.*

Background: Since July 2006, MELD score replace time in the waiting list as the allocation criteria of livers from deceased donors in Brazil. The median time, between the inscription in the list and the transplant, was not less than 30 months at that first situation. Now, with the new criteria, we need to analyze the time that the patients are waiting.

Aim: Analyze the impact of MELD score in the waiting list time of the liver transplant recipients.

Methods: We collected data, retrospectively, from the digital database of our transplant liver transplants from 01/10/04 through 13/12/06. We compare: mean, median, maximum and minimum time in the waiting list, between the patients transplanted before and after MELD criteria. The time between the inscription list and the transplant was calculated in months.

Results: The performed 26 liver transplants during period analyzed (eighteen cases before and 8 after the new criteria). Table 1 shows the time in the waiting list from the 2 groups. Mean and median MELD score were lower in the group before than after the new MELD criteria (table 2)

Table 2: Mean and median MELD score before and after the new MELD criteria.

Conclusion:

The mean, median and minimum time in the waiting list were significant different between the two groups. The MELD criteria group has a lower waiting time. Patients transplanted after the new criteria present a higher MELD score.

Time between the two groups:

	Before MELD time in months	after MELD time in months
Mean	44.7	15.6
Median	44.3	8.0
Maximum	51.7	47.3
Minimum	29.9	0.2

Table 1: time between the inscription in the list and the transplant, in months.

MELD score between the groups:

	Before MELD	After MELD
Mean	18	30
Median	16.8	29,1

Table 2: Mean and median MELD score before and after the new MELD criteria.

Abstract# 83 Poster Board #-Session: P83-I

ADULT LIVING DONOR LIVER TRANSPLANTATION – THE ONLY ALTERNATIVE TO THE PATIENT CHILD C WITH LOW MELD SCORE. Thiago Beduschi[1], Thomson M. Palma, Vinicius M. R. Silva, Ana Olga N. G. F. Mies, Ana Suely C. Zan, Bianca DellaGuardia, Carlos E. S. Baia, Eloiza H. Quintela, Leonardo R. Ferraz, Marcio D. de Almeida, Margareth P. Lallee, Osvaldo I. Pereira, Sergio Mies. *[1]Liver Unit, Albert Einstein Hospital, Sao Paulo, SP, Brazil.*

The Model for End-Stage Liver Disease (Meld) was implemented in Brazil on July 17th, 2006. With this allocation model the real utility of adult to adult living donor liver transplantation (ALDLT) was immediately questioned. However, in our country, there is a critical shortage of deceased donor, and only 15% of the waiting list is transplanted each year. In some states, like Sao Paulo, this value is less than 5 %. In the initial data collected after the Meld's introduction, the score of the transplanted patients was very high, in most cases higher than 29. It's known that the Meld system has limitations and as many as 20% of the patients the score can not accurately predict the mortality and severity of the disease. There are no doubts of the necessity to transplant a patient with Child C. For this reason, we stratified patients by the Meld scores and their respective Child classification. 304 adult patients transplanted between January 2002 and November 2006 for non-fulminant liver failure were retrospectively studied. Meld and Child scores were taken immediately before the transplantation. The patients were grouped according to the Meld scores. Group I between 6 -10 (13%), group II between 11 – 15 (34%), group III between 16 – 20 (36%), group IV between 21 – 25 (9%), group V between 26 – 30 (4%) and group VI for patients with Meld score higher than 30 (4%). Into the group I neither patient were Child C. In the group II, 10 % of the patients were Child C. Among the group III, 40 % of the patients were Child C, proportion that increases to about 80 % among the patients of the group of MELD 21 - 25, and to 100% on the patients of MELD scores higher than 30. An aggravation to the patients Child C with low MELD score are the special situations, like hepatocellular carcinoma or familial amyloid polyneuropathy that receives score 29. This population associated with the acute transplants practically receives all available grafts. For this reason, the ALDLT maybe the only alternative for the very sick patients with low Meld score.

Abstract# 84 Poster Board #-Session: P84-I

SURVIVAL ANALYSIS AFTER LIVER TRANSPLANTATION ACCORDING TO DELTA MELD SCORE. Ilka F. S. F. Boin[1], Marilia I. Leonardi[1], Raquel Stucchi[1], Tiago S. Pereira[1], Luiz S. Leonardi[1]. *[1]Unit of Liver Transplantation, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil.*

Introduction: The change in MELD score over time delta -MELD (ΔMELD) may have additional prognostic value.

Aim: To verify the survival rate after liver transplantation using ΔMELD.

Methods: Retrospective analysis of 232 liver transplants. ΔMELD/month was defined as final MELD score - initial MELD score / waiting list month. Group A has the ΔMELD/month score < 0 and group B has score was > 0. We anlysed donor and receptor variables using T-test and Kaplan-Meier actuarial survival test.

Result:The results are in table attached.

Conclusion: We observed that patients whose MELD increased with the waiting list time obtained better survival. Probably were patients followed and they had good control before liver transplant surgery.

Significative differences (p<0.05) observed comparing group A (ΔMELD/month <0) and group B (ΔMELD >0).

	average	MELD	final MELD	ΔMELD	ΔMELD/month	1-year survival
A	48 ±11	16	20	-3	-1	75%
B	45±11	19	16	4	0	59%

ΔMELD/month = (final MELD-initial MELD)/waiting list month

Abstract# 85 Poster Board #-Session: P85-I

A STUDY OF POSSIBILITY FOR ALCHOOL ABUSE IN PATIENTS WITH HEPATIC CIRROSIS IN THE PROGRAM OF LIVER TRANSPLANTATION. Isabel Warwar, Marilia Leonardi, Ilka Boin, Silva Glauce, Luiz Leonardi. *Gastro Cirurgia, Unicamp, Campinas, Sao Paulo.*

The use of alchool is a mental and comportamental trouble. The excessive alcool use Alcoholism is a mental upheaval and mannering, revealed for the excess of alcóolica ingestion, it has specific traces of personality found in literature entailed to the behavior to drink. The excess of alcóolica ingestion can bring damage in the interpersonal relations, also brings damage in the organic health being able to develop The teams of surgery of liver transplant present a certain pessimism in relation to the transplant procedure therefore fear the return of the use of alcoolalcoolica cirrhosis necessitanto of a hepático transplant.

The objective of this work is to evaluate the probability of alcoolica return in patients who estao being inserted in one list of hepático transplant. 47 patients of the unit of hepatico transplant had been evaluated who were in evaluation to be inserted in a list of figado transplant of, used themselves inventory of expectations and personal beliefs concerning alcool (IECPA) during the period of January of 2006 the June of the same year, also observed time of abstinence, time of use, age, sex, civil state and escolaridade.

The results gotten in had shown them mainly that 61.7% of the studied patients have high probability to ingest drunk alcoolica presenting score average of inventory it of 182, being that the value minimo not to have probability to come back to drink is of 136.Como conclusion was obervou that the return of the alcohol is a serious problem to be studied and that the patients need a structuralized attendance of the mental health so that the same does not come back to ingest drunk alcoolica.

Abstract# 86 Poster Board #-Session: P86-I

TWO-HUNDRED THIRTY FOUR PEDIATRIC LIVER TRANSPLANTS AT A SINGLE-CENTER: LONG-TERM OUTCOMES FOR BILIARY ATRESIA (BA), FULMINANT HEPATIC FAILURE (FHF), METABOLIC DISORDERS (MD) AND PRIMARY MALIGNANCY (PM). M. Hughes, A. Gruessner, E. Gross, T. Nguyen, R. Garcia-Roca, R. Kandaswamy, A. Humar, W. Payne, R. Gruessner. *[1]Transplantation, University of Minnesota, Minneapolis, MN, USA.*

INTRODUCTION: Results of LTx for pediatric pts have improved over time. The goal of the current study is to compare 5- and 10-yr outcomes in 5 groups of pediatric pts (BA, FHF, MD, PM, and cirrhosis due to other causes [CI]).

METHODS: From 1/1969 to 10/2006, we have performed 234 LTxs in pediatric pts (BA n=116, MD 64, CI 24, FHF 23, PM 7.) These groups were compared to one another with pt and graft survival determined by Kaplan-Meier analysis.

RESULTS: 65% of pts had >10 yrs follow-up. Age and gender at tx differed between groups (age: BA 2.3±3.4 yrs, MD 5.3±4.9, PM 5.7±4.8, FHF 6.7±5.9, CI 9.5±5.7, p<0.0001; % female: FHF 26.1, PM 28.6, MD 43.8, CI 54.2, BA 58.6, p=0.02.) Dialysis dependency (%) also differed (BA 1.7, CI 5.3, FHF 15.4, MD 20.0, PM 33.3, p=0.02.) There were no differences in donor or organ type (deceased [n= 218] vs. living [16], p=0.04; partial [51] vs. whole [183], p=0.1.)

Pt survival differed between groups (% at 5- and 10-yr: BA 60.3, 55.9; FHF 64.9, 57.7; MD 76.1, 72.6; CI 78.0, 78.0; p=0.004.) For PM, 81.0% died by 22 months (remaining 2 have not yet survived 5 years.) There are no differences in survival for pts aged 0-3 yrs (143 LTxs) or 7-11 yrs (39 LTxs.) Pt survival is different for those 4-10 yrs (52 LTxs) (% at 5- and 10-yr: FHF 66.7, 44.4; BA 66.7, 66.7; MD 85.2, 85.2; CI 87.5, 87.5; p=0.03.) There were no differences in patient survival by age category (0-3, 4-10, 11-17 yrs) (p>0.05.)

Graft survival similarly differed (% at 5- and 10-yr: FHF 55.9, 47.9; BA 55.8, 52.5; MD 71.7, 68.3; CI 78.0, 72.8; p=0.0004) with MD and CI demonstrating the best survival. There were no differences between groups in graft survial for 1969-1984 (pre-CSA era) or 1985-1994 (CSA era) (p>0.05.) Most recently (1995-2006: tacrolimus era) graft survival has become more divergant between groups with MD demonstrating the best survival (% at 5-yr: FHF 65.6, CI 83.1, BA 86.7, MD 89.7, p=0.0005.)

CONCLUSIONS: Long-term results of pediatric LTx depend on diagnosis and age at tx. Most recently with tacrolimus as primary immunosuppression, MD pts demonstrate improved survival and fare better than the others. MD and CI pts survive longer than pts in the other groups most consistantly and particularly during their adolescent years. Pts with PM fare very poorly.

Abstract# 87 Poster Board #-Session: P87-I

SOCIAL ASPECTS OF PEDIATRICS LIVER TRANSPLANT CANDIDATES AT SANTA CASA OF SÃO PAULO, BRAZIL.

Marcia Turolla[2], Andre I. David[1], Norma A. Amaral[2], Pacheco P. Bernadete[2], Leila M. Bocchi[2], Nancy T. Cordovani[3], Paulo C. Massarollo[1]. *[1]Surgery, Santa Casa, Sao Paulo, SP, Brazil; [2]Social Service, Santa Casa, Sao Paulo, SP, Brazil; [3]Pediatrics, Santa Casa, Sao Paulo, SP, Brazil.*

Background:
Liver transplant is the last therapeutic procedure for terminal hepatic failure, children are among the population that needs this treatment. The social aspects of these patients, parents and relatives must be known. The pediatric patients are obligatory dependent of the caregivers and some directions and conditions must to be given according to each socio-economic condition, so they can follow the complex therapeutic routine.

Aim:
Social analysis of pediatrics liver transplant candidates and their caregivers previous the liver transplant.

Methods:
Retrospective analysis of 86 social reports of pediatrics patients, with less than 18 years old, listed to do liver transplant in the period of August 1993 through February 2005. We analyzed demographics, habitation conditions, financial situation, familial structure and degree of information about the treatment.

Results:
Total number of candidates was 86. Demographics: 36 males (42%), age range was 4 months to 16 years, although 56 (65%) were between 4 months to 6 years old and 65 (75.5%) borned in São Paulo State. Habitation conditions: 45 (52.5%) live in Sao Paulo District and 33 (38.5%) in Sao Paulo Dade. Caregivers are the parents in 83 (96.5%) of the cases and in 65 (75.5%) the father is in charge. Familial structure: 36 (42%) are married, 27 (31%) with a stable relationship and 15 (17.5%) divorced; most of the families 62 (72%) have 3 to 5 people living together; 57 (66%) with a harmonious familial relation and 23 (27%) just a good relation. Habitation conditions: 38 (44%) have their own home, 20 (23%) live in rented houses and 17 (20%) in supported houses; with a range of 1 to 3 bedrooms. Financial situation: most of the families (56%) receive between US$250.00 to US$750.00. Information of the caregivers about the treatment: 82 (95%) with compliance and 84 (98%) have knowledge about the diagnostic and prognostic of the disease and the therapeutic.

Conclusion:
Pediatric liver transplant candidates, in our service, have adverse social-economic situation with a low financial income of the caregivers, although the former have a high compliance and understanding of the treatment. The caregivers need social professional assistance and governmental support in order to do the routine of the post-transplant treatment.

Abstract# 88 Poster Board #-Session: P88-I

THE INFLUENCE OF PELD SCORE ON MORTALITY OF CHILDREN UNDERGOING LIVER TRANSPLANT – ANALYSIS OF 91 PATIENTS.

Julio C. Wiederkher[1,2], Sabryna L. Werneck[1], Izabel M. Celho-Lemos[1,2], Sandra L. Schüler[1], Luiz R. Farion[1,2], Daniele D. Ouno[1], Sylvio A. Avilla[1], Claudio Schulz[1]. *[1]Division of Liver Transplantation, Hospital Pequeno Principe, Curitiba, PR, Brazil; [2]Division of Liver Transplantation, Santa Casa de Misericórdia, Curitiba, PR, Brazil.*

PURPOSE: PELD score was implemented in 2002 in US by United Network for Organ Sharing (UNOS), to determine liver grafts allocation from cadaveric donors in order to reduce on list mortality of pediatric candidates to liver transplant. The score is used in patients under 18 years of age and correlates the death risk of the end-stage liver disease. However, the long-term effects of this allocation policy, sickest children first, on the post-transplant outcome, has not yet been fully analyzed in comparison to other allocation algorithms. The aim of this study was to calculate the PELD score of children who had been undergone liver transplantation from January 2003 through September 2006, in Hospital Pequeno PrIncipe in Curitiba, Brazil, and correlate the score to the post transplant children's prognosis. **METHOD:** It was reviewed charts of 91 patients under 18 years of age, submitted to orthotopic liver transplantation. PELD score was retrospectively analyzed, based in pre-transplant assessment of each child and it was correlated to post-transplant mortality. **RESULTS:** The main pre-transplant diagnosis was biliary atresia (39.6%). The overall surgical mortality was 38.5%. The mean PELD score in children who died was 16±12.41 and in those who lived was 12±12.72 (p=0.09). The mortality of children with PELD score 20 or higher was 62.5% and the mortality of children with PELD score below 20 was 18.75%.The relative risk of post-transplant mortality for PELD score above 20 was 1.25 (p=0.02). **CONCLUSION:** Death risk after liver transplantation in patients with pre-transplant PELD score of 20 or higher was significantly higher than those with score below 20.

Abstract# 89 Poster Board #-Session: P89-I

LONG-TERM EVALUATION OF CYCLOSPORINE AND TACROLIMUS BASED IMMUNOSUPPRESSION IN PEDIATRIC LIVER TRANSPLANTATION.

Wibke Hasenbein[1], Johannes Albani[1], Cornelia Englert[1], Aranke Spehr[1], Enke Grabhorn[1], Markus J. Kemper[2], Martin Burdelski[1], Rainer Ganschow[1]. *[1]Department of Pediatrics, Ped. Hepatology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Department of Pediatrics, Ped. Nephrology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.*

Both calcineurin inhibitors, cyclosporine and tacrolimus are widely used in pediatric liver transplant recipients and currently data is limited with regards to long-term results using the one drug or the other. We conducted the present study to assess the advantages and disadvantages of both drugs in children at least five years post liver transplantation. A total of 129 children were enrolled in the study. Thirtyeight of the children were switched to tacrolimus monotherapy, 4 patients had primary tacrolimus therapy, and 87 patients received cyclosporine. Mean trough levels were 5.3±2.3 ng/mL (tacrolimus) and 73.6±44.5 m/l (cyclosporine), respectively. There was no significant difference in the calculated glomerular filtration rate between children on cyclosporine and tacrolimus (142.7+39.5 mL/min/1.73m^2 versus 151.1±44.1 mL/min/1.73m^2). The incidence of arterial hypertension was 7.1% vs. 9.2%, that of hepatotoxicity was 0% vs. 2.3%. Cosmetic changes were found in more than one third of the patients on cyclosporine and in 4.8% of the patients receiving tacrolimus. Quality of life was excellent in both groups (self assessment). The impact of calcineurin inhibitors on chronic graft dysfunction cannot be assessed by our present study. We conclude from the results that cyclosporine and tacrolimus are both excellent drugs for maintenance immunosuppression in the long-term course following pediatric liver transplantation.

Abstract# 90 Poster Board #-Session: P90-I

CLASSIFICATION AND PROGNOSIS OF INTRAHEPATIC BILIARY STRICTURE AFTER LIVER TRANSPLANTATION.

Hae Won Lee[1], Kyung-Suk Suh[1], Woo Young Shin[1], Eung-Ho Cho[1], Jai Young Cho[1], Nam-Joon Yi[1], Jung-Hwan Yoon[2], Hee Chul Yu[3], Baik Hwan Cho[3], Kuhn Uk Lee[1]. *[1]Department of Surgery, Seoul National University College of Medicine, Seoul, Republic of Korea; [2]Department of Internal Medicine, Seoul National University College of Medicine, Seoul, Republic of Korea; [3]Department of Surgery, Chonbuk National University Medical School, Jeonbuk, Republic of Korea.*

Intrahepatic biliary stricture (IHBS) after liver transplantation (LT) may develop in patients with hepatic artery thrombosis, chronic rejection, or ABO incompatibility, and in patients with prolonged warm ischemia in non-heart-beating donor (NHBD) LT. However, clinical course and management methods of IHBSs have not been well studied yet. Thus, the purpose of this study was to classify post-LT IHBS and to investigate the prognosis. 44 patients who developed IHBS after NHBD LT were enrolled. According to the cholangiographic appearance, the patients were classified into four groups; unilateral focal (UF, n=8), confluence (CO, n=10), bilateral multifocal (BM, n=21), and diffuse necrosis (DN, n=5) types. UF type was defined as the case which had a stricture only in sectional or segmental branch of unilateral hemiliver, CO type as the case which had several strictures between right or left main duct and confluence level, and BM type as the case which had multiple strictures bilaterally. At last, the cases which showed diffuse obliteration of peripheral ducts or destruction of central architectural integrity over long segment were classified into DN type. Although 5 of patients with

CO type required several interventions, yet all patients with UF or CO type showed good prognosis. Of patients with BM type, 3 patients (14.3%) died or underwent retransplantation due to biliary complication, and 7 (33.3%) have needed repetitive interventions for more than one year without improvement. Moreover, of 5 patients with DN type, one (20%) died of biliary sepsis, two (40%) underwent retransplantation and the rest two (40%) also have not recovered from persistent jaundice and life-threatening cholangitis despite multiple interventions. In conclusion, all patients with UF or CO type showed successful results with or without interventions. However, all patients with DN type and about a half of patients with BM type could not recover from life-threatening condition despite repetitive aggressive interventions. Therefore, early retransplantation was thought to be the only treatment option for these patients.

Abstract# 91 Poster Board #-Session: P91-I

MANAGEMENT OF POLYCYSTIC LIVER DISEASE IN 55 CASES: A 30-YEAR EXPERIENCE AT A SINGLE INSTITUTION. Daniel Azoulay[1], Gerard Pascal[1], Denis Castaing[1]. *[1]Centre Hepato-Biliaire, AP-HP/Hopital Paul Brousse, Villejuif, France, Metropolitan.*

Objectives: The management of Polycystic Liver Disease(PLD) ranging from observation to Liver transplantation is still debated. The aim of the present study was to evaluate the respective indications of deroofing, Liver resection and Liver transplantation for the treatment of PLD.

Patients and methods : Beetween 1975 and 2006, 55 consecutive patients with PLD were managed at a single institution : 47 females (85%), mean age : 52 years. Twenty eight patients (51%) had an associated Polycystic Kidney Disease. Operative mortality, morbidity and long-term results were analysed.

Results : Surgery was performed in 50 patients (91%) with highly symptomatic PLD : laparoscopic deroofing in 18 patients (36%), open deroofing in 17 (34%), Liver resection in 3 (6%), Liver transplantation in 12 (24%), combined with Kidney transplantation in 8 patients. There was no mortality. After laparoscopic deroofing, there was no conversion and no morbidity. After open deroofing, a complication occured in 10/17 patients (59%), mainly ascites (6 cases). After Liver resection, there was no complications. After Liver transplantation, morbidity was 70% : 5 patients (42%) had a surgical complication, requiring a reintervention for 4 of them. After deroofing, long-term results (2 - 15 years) were good in all patients with large cysts (75%) and poor in the remaining patients with small cysts. After tranplantation all patients recovered an excellent quality of life (2 – 11 years).

Conclusion : Laparoscopic deroofing must be the gold standard of PLD with large symptomatic cysts. Liver transplantation should be considered as a safe option when cyts are highly symptomatic, small and extensive.

Abstract# 92 Poster Board #-Session: P92-I

CLINICAL OUTCOME OF PREOPERATIVE PORTAL VEIN THROMBOSIS IN LIVING DONOR LIVER TRANSPLANTATION. D. G. Kim[1], C. Y. Lee[1], S. J. Kim[1], I. S. Moon[1], M. D. Lee[1]. *[1]General Surgery, The Catholic University of Korea, Kangnam St. Mary's Hospital, Seoul, Republic of Korea.*

Purpose : The aim of the present study is to improve results of living donor liver transplantation(LDLT) of patients with portal vein thrombosis(PVT) by analyzing patients' characteristics, reconstructive methods and patency rate following operation. **Methods** : Between January 2000 and May 2006, 246 cases of LDLT in adults using the right lobe were performed. The patients were subdivided according to presence and characteristics of PVT ; No PVT(n=195;79.3%), Partial PVT(n=40; 16.3%) and Total PVT(n=11; 4.4%). Preoperative, intraoperative and postoperative characteristics of each group and operative methods and patency rate of PVT group were compared and analyzed. **Results** : There was no difference in primary indications of LDLT among each group. Of preoperative risk factors of PVT (age, sex, presence of malignancy, CTP score, MELD, UNOS score and complications of portal hypertension), only the incidence of the variceal bleeding was significantly higher in patients with PVT(P<.05). Intraoperatively, the operation time was longer and larger amounts of transfused RBC were needed in PVT group and postoperatively, the stay in the ICU was prolonged and the incidence of hemorrhagic complications was higher in PVT group, but no difference in overall survival and tumor free survival in patients with hepatocellular carcinoma among each group. Portal inflow was reestablished by thrombectomy and end-to-end anastomosis without vessel graft in 93.3%(28/30) cases of partial PVT and in 54.5%(6/11) of total PVT. Cryopreserved veins were used as an interposition(n=2) or a jump graft(n=4) and autologous iliac vein was used as a jump graft(n=1). Of 5 cases of jump grafts, 2 cases were anastomosed to coronary vein, and 3 cases to superior mesenteric vein. Overall patency rate was 97.6%(40/41). **Conclusion** : Higher incidence of preoperative variceal bleeding, much more requirement of transfused RBC during the operation, and higher incidence of hemorrhagic complications after the operation suggest that there might be hemorrhagic diathesis and much more attention was needed to be paid to patients with PVT. Regardless of the operative methods and materials, higher patency rate of portal vein could be achieved so that the operation of patients with PVT could be undertaken safely without increased mortality and with controllable morbidity.

Abstract# 93 Poster Board #-Session: P93-I

SURGICAL OPTIONS IN DIFFUSE PORTAL VENOUS SYSTEM THROMBOSIS. IS THE LIVER A TOTAL FUEL ENGINE? A SYSTEMATIC REVIEW. Marcelo Enne[1], Douglas Neves[2], Lucio Pacheco-Moreira[1], José Manoel Martinho[1,2]. *[1]Hepatobiliary Surgery, Liver Transplant, Hospital Geral de Bonsucesso, Rio de Janeiro, RJ, Brazil; [2]Universidade Federal Fluminense, Brazil.*

Background. Diffuse portal venous system thrombosis (DPVT) has lead the development of new surgical techniques, named cavoportal hemitransposition (CPHT), portal vein arterialization (PVA) and multivisceral liver transplantation. Articles adressing the issue of these techniques are few, with a small sample sizes, which makes it dificult to draw conclusions about indications and outcomes of these challenge situations.

Aim. We aimed to review the outcome of adults patients, by a systematic review, with DPVT undergoing liver transplantation with CPHT and PVA.

Methods. A comprehensive search of the MEDLINE databases, from 1990 to 2005, using the terms "extensive portal vein thrombosis" or "diffuse portal vein thrombosis" and "liver transplantation", limited to title or abstract, was conducted. The bibliografies of the recovered articles were also examined to find aditional data.

Results. Twenty-two publications were identified from 1995 to 2005. A total of 57 patients were identified and analyzed. 42 patients were transplanted using a CPHT and in 15 patients a PVA was performed. Patient survival were 71,4% in CPHT and 66,7% in PVA. Surgical complications differ significantly between CPHT and PVA groups(Table 1).

Conclusion. Despite survival was not different between groups, the most frequent complication was statiscally different between PVA and CPHT.

Complication incidence in CPHT and PVA

Technical	Complication	Nº of Patients	Incidence (%)
Cavoportalhemitransposition 42 patients	Renal dysfunction	25	59,5
	Ascites	18	42,9
	Digestive bleeding from collaterals	12	28,6
	Edema of lower limb or lower torso	9	21,5
	Portal vein thrombosis	4	9,5
	Postpone abdominal closure (bowel edema)	3	7,1
	Caval vein thrombosis	1	2,4
Portalveinarterialization 15 patients	Right heart descompensation	3	20
	Portal vein thrombosis	3	20
	Renal dysfunction	3	20
	Pleural effusion	2	13,3
	Digestive bleeding from collaterals	2	13,3
	Ascites	1	6,7
	Stenosis of arterioportal anastomosis	1	6,7

Abstract# 94 Poster Board #-Session: P94-I

SURGICAL TECHNIQUE FOR OUTFLOW RECONSTRUCTION IN DOMINO LIVER TRANSPLANTATION WITH INFERIOR VENA CAVA PRESERVATION. Marcelo Enne[1], Lucio Pacheco-Moreira[1], Elizabeth Balbi[2], Alexandre Cerqueira[1], Jefferson Alves[1], José-Manoel Martinho[1]. *[1]Hepatobiliary Surgery - Liver Transplantation, Hospital Geral de Bonsucesso - Ministério da Saúde, Rio de Janeiro, RJ, Brazil; [2]Hepatology, Hospital Geral de Bonsucesso, Rio de Janeiro, Brazil.*

Background. Domino liver transplantation has been performed worldwide, the demanding of the surgery consisting in the outflow anastomosis. The original technique used for the hepatectomy of the familial amyloidotic polineuropathy (FAP) patient precludes the inferior vena cava preservation, and in many cases the venovenous bypass is used. The Achilles's heel of the domino transplantation is the IVC length for both patients, the FAP patient and the domino recipient.

Aim. The purpose of this study is to describe the technique used for the hepatectomy of the FAP patient with IVC preservation, and utilization of vascular grafts for outflow reconstruction, assessing safety and related complications.

Materials and Methods. Between Mar/2002 and Oct/2006, 203 liver transplantations were performed at our center, of which seven were domino procedures, three from cadaveric donor and four from LDLT. The seven domino donors (FAP patients) were four males and three females; median age 38 years old. The seven domino recipients (cirrhotic patients) were three females and four males, median age 51 years old. The vena cava preservation was accomplished in all 14 patients. The outflow anastomoses of the FAP patients receiving cadaveric grafts (whole liver), were all with side-by-side IVC anastomosis, without veno-venous by pass. The outflow reconstructions were right hepatic vein with large cavatomy in the patients receiving a LDLT. The outflow of the domino recipients in six cases were made using a venous graft, consisting in five of a inferior vena cava below the renal vein with both common iliac veins (harvested during cadaveric procurement), and in one case with an inverted autologus portal vein. In the last case no venous graft was used and the anastomosis was directly with hepatic veins cuffs.

Results. Of the 14 transplanted patients 12 (85%) were discharged from the hospital. At a median follow up of 24 months (range 2 to 56 months) survival was 72% (5/7) and 42% (3/7) respectively for FAP and Cirrhotic patients. There were no outflow related complications.

Conclusion: In summary, this technique may be considered as a strategy to avoid complications in the outflow anastomosis in the domino scenario, especially in the FAP patient.

Abstract# 95 Poster Board #-Session: P95-I

PORTAL VEIN THROMBOSIS ON PRE-TRANSPLANT IMAGING IS PREDICTIVE OF DECREASED LONG-TERM GRAFT SURVIVAL IN CADAVERIC LIVER TRANSPLANTATION. Rodrigo M. Vianna, Richard S. Mangus, Jonathan A. Fridell, Joseph Tector. *[1]Surgery, Clarian Health Partners, Indiana University School of Medicine, Indianapolis, IN, USA.*

Background

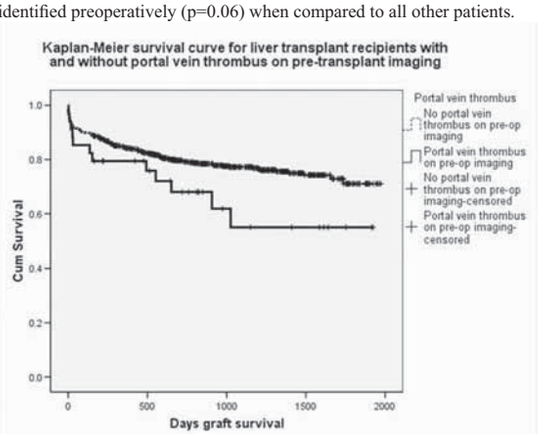
We reviewed the preoperative imaging (computed tomography (CT) or magnetic resonance (MR) to identify all patients with known pre-transplant portal thrombus. Transplant outcomes in these patients were then compared to all patients without portal thrombus.

Methods

Routine pre-transplant imaging included dual contrast CT scan of the abdomen with follow-up MR for patients with identified thrombus in the porto-mesenteric system. Imaging was reviewed by a staff radiologist experienced in reading abdominal imaging for patients with cirrhosis. Liver transplantation was performed using a standardized technique with 95% of recipients having cava preservation using piggyback hepatectomy. Intra-operative thrombectomy with low dissection of the portal vein was performed in all subjects. Post-operative imaging consisted of standard liver ultrasonography on post-operative days 1 and 3.

Results

698 cadaveric liver transplants were reviewed over 5 years time. There were 35 patients (5.0%) identified with portal vein thrombus. Eleven patients (31.4%) had extension of thrombus to either the splenic or superior mesenteric vein. Post-transplant, two patients developed complete portal vein thrombosis (5.7%) and both died. Another patient had partial portal vein thrombus (2.9%) but maintained normal liver function. One patient developed hepatic artery thrombosis (2.9%) requiring aortic jump graft. Four of the patients with pre-operatively identified portal thrombus died perioperatively, two secondary to portal vein thrombosis and two from sepsis. Kaplan-Meier actuarial survival demonstrates worse long-term graft survival for patients with portal thrombus identified preoperatively (p=0.06) when compared to all other patients.



Conclusion

Portal vein thrombosis on pre-transplant imaging remains a significant predictor of worse long-term liver allograft survival and may be associated with an increase risk for perioperative thrombosis and death.

Abstract# 96 Poster Board #-Session: P96-I

DRAINAGE OF THE ANTERIOR SECTION USING AN ARTIFICIAL VASCULAR GRAFT IMPROVED THE ONE-YEAR SURVIVAL RATE WITHOUT SIGNIFICANT MORBIDITY IN RIGHT LIVER TRANSPLANTATION. Nam-Joon Yi[1], Kyung-Suk Suh[1], Hae-Won Lee[1], Eung-Ho Cho[1], Woo Young Shin[1], Jai Young Cho[1], Hee Chul Yu[2], Baik Hwan Cho[2], Kuhn Uk Lee[1]. *[1]Surgery, Seoul National University College of Medicine, Seoul, Korea; [2]Surgery, Chonbuk National University Medical School, Seoul, Korea.*

Background: Congestion of the anterior section in a conventional right liver (RL) without a middle hepatic vein (MHV) may lead to graft dysfunction. To solve this problem, a RL draining MHV branches using autologous or cryopreserved vessels was introduced. However, these vessels are often unavailable and their preparation is time-consuming. An expanded polytetrafluoroethylene (ePTFE) graft may be used for anterior section drainage.

Patients and Methods: Between February and November 2005, 26 recipients underwent RL liver transplantation draining MHV branches using an ePTFE graft. The ePTFE graft (6-7 mm in internal diameter) drained major MHV branches on the back table and its distal end was anastomosed to the recipient's inferior vena cava. Dynamic liver CT scans were used to check the patency of MHV branches.

Results: The 1- and 4-month patency rates (PRs) were 80.8% (21/26) and 38.5% (10/26). All showing early obstruction of the ePTFE graft had anterior congestion. But all showing late obstruction were asymptomatic. No infectious complication was associated with the ePTFE graft. One-year survival rate was 100%. Compared to the historical control group, 1-year survival rate was better than that of conventional RL group (n=85) ($p<.05$), and the 1-month PR was comparable with ($p>.05$), but the 4-month PR was lower than that of RL with a MHV group (n=17) ($p<.05$).

Conclusion: The late obstruction of the ePTFE graft had no impact on the anterior congestion, graft dysfunction, or patient survival. Therefore, the ePTFE graft may be a useful interposition material for anterior section drainage in RL transplantation.

Abstract# 97 Poster Board #-Session: P97-I

ADULT TO ADULT LIVING DONOR LIVER TRANSPLANTATION WITHOUT BLOOD TRANSFUSION.

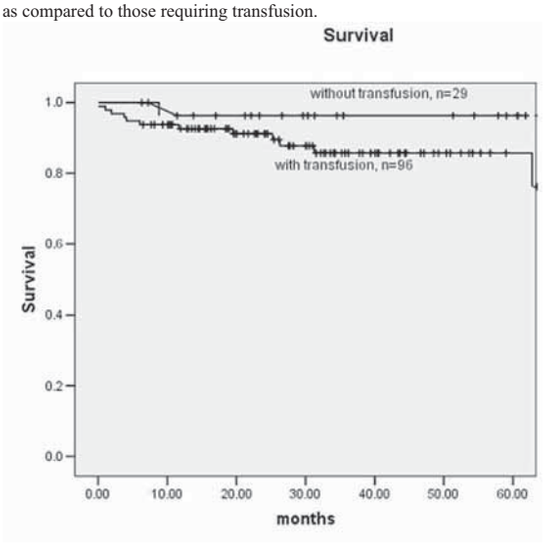
Chih-Chi Wang[1], Shridhar Iyer[1], Chao-Long Chen[1], Shih-Ho Wang[1], Yueh-Wei Liu[1], Allan Concejero[1], Chee-Chien Yong[1], Chin-Hsiang Yang[1], Amornetta Jordan[1], Bruno Jawan[1]. *[1]Liver Transplantation Program, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.*

Introduction Liver transplantation recepients are prone to bleeding due to nature of operation and underlying physiologic status. We present our experience with adult living donor liver transplantation (LDLT) without blood transfusion

Patients and methods 125 patients underwent adult LDLT from January 1999- April 2006. 29 patients (23%) with mean age of 44.4 years, underwent LDLT without use of intraoperative blood transfusion. 14 of the 29 patients required post operative transfusion within a week after surgery. In 29 patients without intraoperative transfusion, no preoperative erythropoietin, acute normovolemic hemodilution, intraoperative cell salvage, venovenous bypass or portocaval shunt was used. The indications were cirrhosis with hepatocellular carcinoma (18), hepatitis B and C related cirrhosis (8), primary biliary cirrhosis (2) and biliary atresia (1). The Child-Pugh status was A in 12, B in 12 and C in 1. The mean MELD score was 11.55. 28 patients received right lobe and 1 received left lobe graft. The mean follow up was 33.38 months.

Results The mean preoperative values for blood counts were as follows: hemoglobin (Hb)12.8 gm%, hematocrit (hct) 37.9, INR 1.3, platelets 116.4X1000/ml. The postoperative values at 1 week for Hb and hct were 9.5gm% and 27.9 respectively. The mean operative time was 10.65 hours and the mean blood loss was 596 ml (±438). None of the donors required either introperative or postoperative transfusion. The mean donor age was 32.56(±9.6) years. The mean donor blood loss was 111.2 ml (±48.5). The recipient complication rate was 9/29 and significant difference was seen between those with or without blood transfusion. There was only one late mortality due to gastric carcinomatosis. The overall 5 year survival was 96%. 5 year survival for patients requiring transfusion (n=96) was 86%

Conclusion LDLT without intraoperative blood transfusion was feasible in 23% of patients. The patients without blood transfusion have better survival as compared to those requiring transfusion.



Abstract# 98 Poster Board #-Session: P98-I

"I"-"V" VENOPLASTY OF THE OUTFLOW TRACT IN RIGHT LOBE-LDLT WITH MIDDLE HEPATIC VEIN FROM LIVING DONOR.

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Unification of the middle (MHV) and right (RHV) hepatic veins is impossible if their orifices are remotely located when transplanting right hepatic lobe with MHV from a live donor(RL-LDLT with MHV). We describe our technical approach taht can permit reconstructing a single and large common orifice composed of RHV and MHV in the setting of the two veins far apart : At the back table, a straight "I" incision(ca. 20 mm) is made longitudinally on the wall of MHV facing RHV. The underlying liver parenchyma between two veins is removed by using CUSA to relieve tension when approximating. The incison is then stretched out, resulting in formation of a large "V" defect which is replaced by joining a redundant posterior wall cuff of the RHV using a 6-0 polypropylene suture. Finally, a single outflow (ca. 30 mm in diameter) is established comprising widely open MHV and RHV. In the recipient, a large and oval vena cavotomy is performed by excising the RHV caudally and medially. A single venous outflow approximation is carried out by end-to-side fashion.

Our venoplasty technique possibly renders RL-LDLT with MHV simple and practical even when a distance of MHV and RHV is rather remote.

Abstract# 99 Poster Board #-Session: P99-I

OUTFLOW RECONSTRUCTION USING INTERPOSITION GRAFT FOR ADULT LIVING DONOR LIVER TRANSPLANTATION.

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Objectives: For donor safety, we perform outflow reconstructions using interposition grafts for marginal-sized right lobe grafts. We present our technique for adult-to-adult LDLT outflow reconstruction in right lobe grafts with anterior sector tributaries using an interposition vein graft to prevent congestion and provide adequate graft volume.

Patients and Method: From January 1999-January 2006, 50 adult right lobe LDLT with interposition graft reconstruction of veins in the anterior sector were performed. To standardize the study, 27 recipients (22 male, 5 female) with mean MELD score of 17 and had only right hepatic vein and anterior sector interposition graft reconstructions were included. Excluded in the study were recipients who had additional outflow venoplasties or inferior right hepatic vein reconstructions. Daily liver enzymes, total bilirubin measurements and serial Doppler ultrasound were done. CT scan graft volumetry was done six months post transplant. Outcomes were compared to the standard right lobe LDLT and the extended right lobe LDLT with middle hepatic vein. Mean follow-up was 27.5±11.3 months.

Results: Mean graft weight was 707 g and within 42-85% of the recipient's standard liver volume. Mean graft weight-recipient weight ratio was 1.11 (range: 0.71-1.66). Most common interposition vein graft used was the portal vein. Overall 1-month and 1-year patency rates of the interposition grafts were 83% and 74%, respectively. Graft volume increased to 89% of the recipient's standard liver volume. Mean liver regeneration rate in six months was 52% and was comparable to the standard and the extended right lobe transplants. There was only 1 case of massive ascites in the study group which resolved spontaneously. The post transplant liver enzymes of recipients with outflow reconstruction had a similar decreasing trend compared to the right lobe grafts with or without the middle hepatic vein. There was no outflow-related mortality and morbidity rate was 3.7%. No donor mortality or morbidity was encountered.

Conclusion: Use of interposition vein grafts is an option for outflow reconstruction in marginal-sized right lobe grafts that include anterior sector tributaries. This solves the problem of anterior sector congestion which may lead to early graft dysfunction if overlooked.

Abstract# 100 Poster Board #-Session: P100-I

CYTOKINES PATTERNS IN LIVER TRANSPLANTATION: VENO-VENOUS BYPASS X PIGGYBACK TECHNIQUE.

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Liver transplantation can be performed using the conventional technique with veno-venous bypass, or with preservation of the inferior vena cava, known as the piggyback technique. In the first method, the liver is removed "en bloc" with the retrohepatic vena cava, and a veno-venous bypass is performed. In the second method, the liver is progressively detached from the inferior vena cava that requires cross-clamping of the portal vein, generating passive venous congestion. Venous splanchnic stasis may induce inflammatory phenomena. The aim of the study is to determine if there is a difference between the two techniques concerning the production of the inflammatory cytokines IL-1, IL-6, IL-8, IFN-gamma and TNF-alpha.

We performed a randomized study of 30 cirrhotic patients who underwent elective liver transplantation. The patients were randomized in two groups: conventional or piggyback techniques. Samples were taken from arterial, portal and hepatic venous blood, at 2, 5, 10, 15, 30, 60, 90 and 120 minutes after revascularization, and the blood flow of hepatic artery and portal vein were measured simultaneously. The cytokines were measured using an immunoenzymometric assay. The amount of cytokines and the hepatic metabolism were calculated based on plasma concentration and vascular blood flow. Profile analysis was used for statistics.

The amount of IL-1 in portal blood is higher in the patients who underwent surgery using the conventional technique (estimate interest = 63.783,9±16.586,1 pg/mL, and 11.979,6±16.585,7 pg/mL for piggyback, p=0,035). There were no significant differences between methods for IL-6, IL-8, IFN e TNF. The hepatic metabolism of cytokines was not different. Although all the curves showed higher amounts of cytokines in conventional technique these were not statistically significant.

The study shows the similarity between the two techniques concerning the stimuli for the production of inflammatory substances. The production of cytokines stimulated by extracorporeal circulation of the conventional technique may be comparable to the one stimulated by the venous splanchnic stasis of the piggyback technique.

Abstract# 101 Poster Board #-Session: P101-I

A SIMPLE AND INEXPENSIVE TECHNIQUE OF UPPER ABDOMINAL WALL RETRACTION IN PEDIATRIC LIVER TRANSPLANTATION AND SURGERY. Tsan-Shiun Lin[1], Allan M. Concejero[1], Chao-Long Chen[1], Chih-Chi Wang[1], Shih-Ho Wang[1], Yueh-Wei Liu[1], Chee-Chien Yong[1], Chin-Hsiang Yang[1]. *[1]Liver Transplant Program, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.*

Objective: Pediatric liver transplant surgery involves a team: the surgeon, and the first, second assistants. The presence of 3 surgeons and instrument nurses creates considerable crowding around both operative field and operating table. Mechanical devices are to solve this problem but most table-mounted devices are designed for adult patients. Our objective is to present the use of a modified upper abdominal retraction devised in our center for pediatric liver transplantation and surgery.

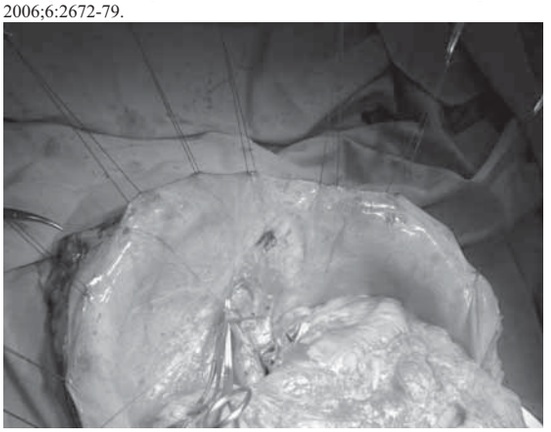
Patients and methods: Based on our experience with pediatric living donor liver transplant[1], we developed a simple, safe, and inexpensive method of upper abdominal wall retraction to facilitate surgical exposure and avoid over-crowding in the sterile field. The key points of this technique are the use of the Mercedes incision and an adult-designed Kent retractor. A pediatric-designed Kent retractor is expensive, unnecessary, and may even cause complications as rib fractures and nerve paralysis.

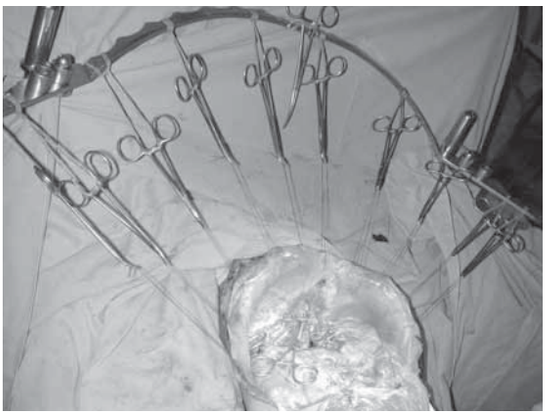
Results: We used this technique in 125 consecutive pediatric liver transplants without any complication resulting from the exposure.

A-Placement of sutures to reflect-retract the upper abdominal wall. B-Hemostats provide traction on the suture. Rubber bands secure hemostats to the retractor frame. Degree of traction and exposure is provided by adjusting the length of suture held by hemostats.

Conclusion: The technique is simple, safe, reliable, and inexpensive. It can be used in pediatric liver surgery and in general pediatric upper abdominal operations.

[1]Chen,CL et al. Living Donor Liver Transplantation for Biliary Atresia: A Single-Center Experience with First 100 Cases. Am J. Transplantation 2006;6:2672-79.





Abstract# 102 Poster Board #-Session: P102-I

VASCULAR COMPLICATIONS AFTER LIVER TRANSPLANTATION: A SINGLE CENTER EXPERIENCE. Hatem Khalaf, Hamad Al-Suhaibani, Hamad Al-Bahili, Yasser El-Sheikh, Mohammed Al-Sagheir, Mohammed Al-Sofayan, Mohamed Al-Sebayel. *[1]Liver Transplantation, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia.*

Purpose: To report vascular complications after both deceased donor liver transplantation (DDLT) and living-donor liver transplantation (LDLT)

Patients and Method: Between April 2001 and November 2006, a total of 117 LT procedures were performed (73 DDLTs and 44 LDLTs) in 113 patients (4 re-transplants). Arterial reconstruction during the LT procedure was needed in 10 patients. Jump venous grafts were needed in 2 DDLT procedures. Vascular grafts were obtained from the cadaveric donors.

Results: In 117 LT transplant procedures; vascular complications was encountered in 7 patients (6%).

In the DDLT group; 3 out of 73 recipients (4.1%) suffered from vascular complications; the first patients had early hepatic artery thrombosis (HAT), she underwent immediate surgical reconstruction and had uneventful recovery, she is doing well over 5 years posttransplant; the second patient had early HAT, she underwent immediate surgical reconstruction but unfortunately died within the first postoperative week from graft failure; the third patient had late portal vein thrombosis (PVT), he presented 1 year posttransplant with increasing ascites, he underwent successful percutaneous transhepatic dilatation and thrombolysis, and is doing well over 1 year following the procedure.

In the LDLT group; 4 out of 44 recipients (9.1%) suffered from vascular complications; the first patient had early HAT and failed early arterial reconstruction, he was successfully retransplanted using cadaveric organ; the second patient had early PVT, he underwent immediate surgical reconstruction but unfortunately died within the first postoperative week from graft failure; the third patient had late HAT one year posttransplant, he presented with biliary strictures that failed repeated dilatations, metallic biliary stent was inserted, and he will be listed for retransplantation whenever indicated; the fourth patient had late portal vein stenosis 6 months posttransplant that was successfully dilated percutaneously.

Vascular complications were significantly higher in the LDLT group compared with the DDLT group, 9.1% vs. 4.1% respectively (p-value <0.05).

Conclusions: In our experience, the incidence of vascular complications was comparable to internationally acceptable rates. Vascular complications were significantly higher in the LDLT group compared with the DDLT group.

Abstract# 103 Poster Board #-Session: P103-I

ANATOMICAL BASIS OF LIVER HANGING MANEUVER FOR LRLT OR SPLIT LIVER: A CLINICAL AND ANATOMICAL IN VIVO STUDY. Giuseppe M. Ettorre[1], Richard Douard[2], Roberto Santoro[1], Giovanni Vennarecci[1], Lucia Miglioresi[1], Mario Antonini[1], Eugenio Santoro[1]. *[1]Digestive Surgery and Liver Transplantation, Regina Elena Cancer Institute, Rome, Italy; [2]Paris Institute of Anatomy, Paris V University, Paris, France.*

Background: Belghiti's Liver Hanging Maneuver (BLHM) is a well-known procedure applied to major hepatectomies with several advantages in conventional hepatectomy and in Living Related Liver Transplantation and in Split liver for adults. This study was designed to assess the feasibility and complication rates of BLHM focusing on the anatomical distribution of the Short Hepatic Veins (SHV) in the retrohepatic portion of the Inferior Vena Cava (IVC).

Study Design: From January 2001 to December 2005, BLHM was planned in 59 consecutive major hepatectomies including one in situ splitting for two adults. The IVC retrohepatic portion was studied during the anhepatic phase in 17 liver transplantations with IVC preservation. The diameter and location of the SHV were recorded after IVC division into 9 portions.

Results: BLHM was achieved in 57/59 patients (96%). Bleeding occurred in only one patient (2%) and did not entail procedure interruption. The anatomical study revealed a total of 86 SHV present in 17 cases (5.18 ± 4 per patient) and classified according to diameter (≤ 3, > 3 to < 6, ≥ 6 mm), as small (n=40), medium (n=29) and large (n=17), respectively. Nine SHV were found in the "avascular" channel for 6/17 (35%) patients (Small n=6, medium n=3, large n=0).

Conclusions: BLHM is a highly feasible procedure with minor bleeding risks. The anatomical in vivo study allows to demonstrate that a lower density of SHV is possibly present in the so-called "avascular" channel. The SHV, when present, are shown to be too small in diameter to induce bleeding detrimental to the procedure safety.

Abstract# 104 Poster Board #-Session: P104-I

RANDOMIZED CLINICAL ASSAY FOR HEPATIC GRAFTS PRESERVATION WITH UW OR HTK SOLUTIONS IN ORTOTHOPIC LIVER TRANSPLANTION. Mario H. Meine[1], Maria L. Zanotelli[1], Tomaz J. Grezzana[1], Ian Leipnitz[1], Eduardo S. Schlindwein[1], Guillermo Kiss[1], Alfeu M. Fleck, Jr.[1], Ajacio M. Brandao[1], Claudio A. Marroni[1], Guido P. C. Cantisani. *[1]Grupo de Transplante Hepatico, Irmandade Santa Casa de Misericordia, Porto Alegre, Rio Grande do Sul, Brazil.*

Introduction. Had been studied102 patients submitted to the OLT in a prospestive trial : 65 in UW group (63.7%) and 37 in group HTK (36.3%). The distribution of sex, race, haemodynamic state, use of adrenergic drugs and presence of steatosis in the donors was equal in the two groups (pα>.05). The average age of the donors was of 38.1 years (SD +-14.4) in group UW and of 44.6 years (SD +-14.2) in the HTK (pα=.036). The distribution of sex, race, age, etiology of the cirrhosis, retransplant, grave acute hepatitis, portal thrombosis and of Child-Pugh and MELD scores of the receivers was equal in the two groups (pα>.05).

Method. Since January 2003 until August 2004, HTK orUW solutions had been used in a block randomized form. The perfusion in aorta was made with 4 liters of HTK or 2 liters of UW and the portal venous system receive 1 liter of one of the solutions.

Results. The HTK group had 8 cases (25.8%) of biliary complications (BC)(4 stenosis, 2 linkages and 2 ischemic type injuries) against 5 cases (8.6%) of group UW (pα=.033) in 89 patients who had completed 4 months of pursuing (OR=2.0 IC 95%=1.2-3.5). The cold ischemia time in the two groups was similar (UW = 579.2 min. and HTK = 527.9 min. pα>.05) and did not have any impact in the incidences of BC, PNF or death comparing the groups. There were no differences in serum biochemical variation through the first month (pα>.05 for bilirrubins, AST, ALT, AF, gGT, LDH, Factor 5 and TP) and the occurrence of rejection was similar. The death incidence was similar in both the groups: UW = 6 (9.4%) and HTK = 4 (11.1%). The incidence of PMF was 2.8% in HTK group (1 case) and 9.4% in UW group (6 cases) (pα=.15), of which 5 (71.4%) had died for PNF.

Conclusion. UW and HTK solutions had been equally effective in the preservation of the hepatics grafts from cadaver donors in the analyzed sample, considering clinical and laboratorial aspects and survival of the patients. The routine use of the HTK solution will be able to diminish the costs of the OLT. The highest mean of donors age and the use of a reduced volume of HTK solution can have contributed for a higher incidence of BC in this group.

Abstract# 105 Poster Board #-Session: P105-I

RELATIONSHIP BETWEEN THE TYPE OF ARTERIAL RECONSTRUCTION AND ARTERIAL COMPLICATION IN 200 CONSECUTIVE LIVER TRANSPLANTS. Osvaldo I. Pereira[1], Paulo C. B. Massarollo[1], Ana Olga N. G. F. Mies, Carlos E. S. Baía, Margareth P. Lallée, Sergio Mies. *[1]Liver Unit, Albert Einstein Hospital, Sao Paulo, SP, Brazil.*

Arterial reconstructions were studied in 200 liver transplants performed in 172 patients. The purpose of this study is to analyze the occurrence of arterial complications and correlate them with the performed type of reconstruction.

The most common arterial reconstruction was a terminoterminal anastomosis between the donor hepatic artery and the recipient artery (85%). The other 30 patients were reconstructed using an arterial iliac graft conduit (15%). Twenty-six grafts presented double arterial irrigation, with branches originating both in the celiac trunk and in other origin (13%). The conversion into single trunk was performed in three ways: anastomosis between the "non-celiac" hepatic artery and a celiac axis branch (17/26=65.4%); anastomosis between the celiac axis and the proximal stump (4/26=15.4%) or the distal stump (5/26=19.2%) of the superior mesenteric artery.

Twelve thromboses occurred in 11 patients (6%) and 6 patients presented stenosis (3%). The type of arterial reconstruction was not related to the occurrence of stenosis. Reconstruction using an arterial conduit was not a risk for thrombosis. Double irrigation grafts presented higher frequency of thrombosis than those with single trunk (26.9% *vs* 2.9%, p<0.01). Among the three types of conversion of double irrigation into single trunk, the anastomosis between the celiac axis and the proximal stump of the superior mesenteric artery presented a higher incidence of thrombosis than the others (75% *vs* 18.9%, p=0.047).

Incidence of thrombosis and stenosis according to the method used in the conversion of double irrigation into single trunk grafts.

	Type I	Type II	Type III	Total
Number of patients	17 (65%)	4 (15%)	5 (19%)	26 (100 %)
Thrombosis	3 (17%)	3 (75%)	1 (20%)	7 (27%)
Stenosis	1 (5,9%)	-	-	1(3,8%)

Type I: anastomosis between the "non-celiac" branch with the celiac trunk branch. Type II: anastomosis between the celiac trunk and the proximal stump of the superior mesenteric artery. Type III: anastomosis between the celiac trunk and the distal stump of the superior mesenteric artery. *Significantly higher thrombosis frequency when compared with types I + II (p=0.047).

Abstract# 106 Poster Board #-Session: P106-I

DIAGNOSIS AND MANAGEMENT OF POST LIVER TRANSPLANT (OLT) PORTAL VEIN STENOSIS. Shunichi Nakagawa, Naveed Ahmed, Federico Ahmed, Bijan Eghtesad, Dympna Kelly, John Fung, Charles Miller. *[1]Liver Transplant Surgery, Cleveland Clinic Foundation, Cleveland, USA.*

Background: Intractable ascites and renal dysfunction post OLT is often due to hepatic out-flow obstruction. We report 3 patients with these findings and portal vein (PV) stenosis, treated successfully with angioplasty and stenting.

Patients and Methods: Between 01/2004 and 11/2006, 321 OLT were performed. 3/321 (0.9%) patients presenting with intractable post OLT ascites and renal dysfunction were diagnosed with PV stenosis. The transplant database was retrospectively reviewed and patient details are outlined in Table 1. 2/3 patients had PV thrombosis pre-OLT which was treated with thrombectomy at the time of transplant. Transplant operations were otherwise uncomplicated, with anastomoses performed in the standard manner. All patients had good intra-operative PV blood flow (transit time ultrasound) and blood flow on POD 1 (duplex US). Symptoms related to intractable ascites developed between 14-102 days post OLT. Patient 3 required endotracheal intubation for massive pleural effusion. PV stenosis was diagnosed with CT scan (2 cases), and duplex US (1 case). All patients had stents placed using a transhepatic approach with a decrease in hepatic venous pressure gradient (HVPG) as outlined in Table 1. Patient 1 required stenting of the PV stenosis and TIPS placement. There were no procedure related complications. Symptoms were well controlled post-procedure in all cases and renal function returned to pre-operative values. Follow-up period ranges from 16-27mos. Patient 1 required thrombectomy of the TIPS and PV stent revision 5 mos following the original procedure. All patients are symptom free at a mean

of 20mos. **Conclusion:**PV stenosis should be considered in the diagnosis of intractable ascites and renal dysfunction post OLT. CT scan and duplex US are valuable tools for diagnosis. PV angioplasty with stenting is a safe and effective way to treat this complication.

Table 1

	Patient 1	Patient 2	Patient 3
age, sex	50, M	43, M	67, M
liver disease	Crypto	NASH	ETOH
pre OLT PV thtombus	no	yes	yes
PV blood flow (ml/min)	1880	1800	750
duplex US POD 1 (cm/s)	75	172	66
symptoms/time from OLT(day)	ascites, abd pain/102	ascites/48	ascites, rep distress/14
Creatinine (mg/dl)	2.0	2.6	1.7
Diagnosis	CT	US	CT
PV stent	Wall stent x3, Nitinol stent x1	Wall stent x1	Nitinol stent x2
pre HVPG (mmHg)	15	9	10
post HVPG (mmHg)	7	7	5
follow up (mos)	16	27	18

Abstract# 107 Poster Board #-Session: P107-I

VENOPLAST USING NATIVE PORTAL VEIN IN TYPE 3 PORTAL VEIN ANOMALY. Joo S. Kim[1], Soo J. Kim[1], Jin W. Park[1], Han J. Kim[1], In K. Kim[1], Jang Y. Jeon[1], Sung E. Jeon[1], Jae P. Jung[1], Samuel Lee[1]. *[1]Surgery, Hallym University, Seoul, Korea.*

Introduction: The right lobe graft has become gold standard over the years compared to the left lobe grafts in living donor liver transplantation. However anatomic variations are commonly encountered when using the right lobe. Therefore various anatomic anomalies are confronted requiring modified surgical techniques without placing the donor's safety at risk. Many different surgical techniques have been reported for various types of portal vein anomalies. But a standard procedure has not yet been established. We report a case of a living right lobe liver donor with a type 3 portal vein anomaly, which was reconstructed with the recipient's portal vein.

Case: A 48 year-old male experienced general weakness and fatigue for about one month. On examination, the patient was HBsAg (+) and a hepatic mass was found on the abdominal CT. The mass was proven hepatocellular carcinoma by sono guided liver biopsy. There was no evidence of distant metastasis. The liver mass was located in S3 and was 6x3cm in size. The patient's past medical history was nonspecific. The patient's 20 year-old son volunteered as a living liver donor candidate. On the preoperative dynamic CT, the donor showed a type 3 portal vein anomaly. The patient underwent living donor liver transplantation receiving the recipient's right liver lobe. The portal vein of the graft could not be reconstructed into a single orifice because of its short length. Therefore the portal vein anastomosis was done after Y-graft venoplasty with the recipient's portal vein. Due to the prolonged back table procedure the anhepatic time was 200 minutes and the cold ischemic time was 270 minutes. The Postoperative Doppler ultrasonography and CT showed good flow of the hepatic artery and portal vein of the liver graft. The recipient and donor both discharged without any complications.

Conclusion: Reconstruction of portal vein anomalies may result in an increase of complications such as portal vein thrombosis. During the procedure, the surgeon must consider the safety of the donor while sustaining a patent anastomosis. In this case of a type 3 portal vein anomaly, we performed a Y-graft venoplasty with the recipient's portal vein without any postoperative complications. Y-graft venoplasty may be a feasible surgical technique in type 3 portal vein anomalies with low complication rates and without an increased risk of the donor's safety.

Abstract# 108 Poster Board #-Session: P108-I

THE SIGNIFICANCE OF INTERRUPTION OF LARGE SPONTANEOUS PORTOSYSTEMIC COLLATERALS IN LIVING DONOR LIVER TRANSPLANTATION AS A GRAFT SALVAGE PROCEDURE. BeomSik Shin[1], Deok-Bog Moon[1], Sung-Gyu Lee[1], ChulSoo Ahn[1], KiHun Kim[1], Shin Hwang[1], KwangMin Park[1], TaeYong Ha[1], GiWon Song[1], DongHwan Jung[1], JeongIk Park[1], HyoJun Lee[1], JeHo Ryu[1], KwanWoo Kim[1], HeeSeong Kim[1], KyeongHun Ko[1]. *[1]Division of Hepatobiliary Surgery & Liver Transplantation, Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea.*

Cirrhotic patients with long-standing portal hypertension often have large portosystemic collaterals. Its persistence after living donor liver transplantation(**LDLT**) might sometimes lead to impaired graft regeneration and subsequent graft failure due to portal flow steal away from the partial liver graft. Herein, two typical portal flow steal cases after adult LDLT are introduced. **(Case 1)** 37-year-old female patient with hepatitis B related acute-on-chronic liver failure received left lobe graft(440 gm, **GRWR** 0.98) including middle hepatic vein. On postoperative 14th day, graft function deteriorated rapidly. Portal flow steal through large inferior mesenteric vein was noted on the indirect portogram during emergency angiography, but its importance was underscored. On postoperative 17th day, the patient died of sepsis regardless of re-transplantation. **(Case 2)** 40-year-old male patient with hepatitis B related acute-on-chronic liver failure received modified right lobe graft(650 gm, **GRWR** 1.0%). Preoperatively he had large coronary collaterals and splenorenal shunt**,** and ligation of both collateral vessels were attempted during operations. However, persistent portal flow steal through the remained coronary collateral vessels, which were not included by previous ligation, led to impending graft failure. The graft could be salvaged after further interruption of the remained coronary vessels by re-exploration. In conclusion, interruption of large collateral vessels should be accompanied as a part of adult LDLT procedure in order to avoid devastating portal flow steal, even though GRWR reaches near to 1.0%.

Abstract# 109 Poster Board #-Session: P109-I

TWO-STEP CLOSURE OF ABDOMINAL WALL WITH IMPLANTATION OF POLYPROPYLENE MESH IN ORTHOTOPIC LIVER TRANSPLANTATION. Piotr Smoter[1], Krzysztof Zieniewicz[1], Anna Skwarek[1], Marek Krawczyk[1]. *[1]Department of General, Transplant and Liver Surgery, Medical University of Warsaw, Warsaw, Poland.*

Background. The limited number of grafts in case of urgent indications for orthotopic liver transplantation (OLT) may lead to suboptimal donor-recipient selection. In rare cases when the graft does not match the recipient in size the primary closure of the abdominal wall is impossible and the two-step method of closure with temporary use of polypropylene mesh is required. The aim of the study was to evaluate the clinical value of that method in OLT.

Methods. 504 consecutive OLT procedures performed in The Department of General, Transplant and Liver Surgery, The Medical University of Warsaw in years 1989-2006 were retrospectively analyzed. Cases of two-step closure of the abdominal wall were identified, the clinical courses and results were evaluated. In all cases the polypropylene mesh Dallop by Tricomed was used.

Results. Six cases (1.2%) of two-step closure of the abdominal wall were identified. The urgent OLT was performed for acute liver failure in four cases and for chronic graft rejection in one case. One procedure was performed as a result of the inappropriate graft selection. The second step – the mesh removal and final closure of the abdominal wall was performed in 8-10 day after OLT. The mean period of hospitalization was 22 days - 9 days longer than the mean period after OLT in our Department. There were two cases of superficial wound infection. No other typical complications were noted. Two patients died in early postoperative period for poor graft function (one case) and multiorgan failure (one case). No other recipient death or severe complications in 2-year observational period were reported.

Conclusion. The two-step closure of abdominal wall with implantation of polypropylene mesh in OLT is the safe method in case of gross disproportion between the graft ant donor size.

Abstract# 110 Poster Board #-Session: P110-I

BILIARY COMPLICATIONS AFTER LIGATION OF HEPATIC DUCT STUMP IN DONOR HEPATECTOMY IN LIVING DONOR LIVER TRANSPLANTATION. Satoshi Kaihara[1], Koichi Kozaki[1], Hidetaka Ushigome[1], Shuji Nobori[1], Kiyokazu Akioka[1], Masahiko Okamoto[1], Norio Yoshimura[1]. *[1]Transplantation and Regenerative Surgery, Kyoto Prefectural University of Medicine, Kyoto, Japan.*

[BACKGROUND] Since we ligate remnant hepatic duct stump in right lobe graftectomy to prevent biliary leakage or stricture in donor, the grafts often have multiple hepatic duct orifices, which may increase the incidence of biliary complications in recipient. [OBJECTIVE] To analyze the incidence of donor and recipient biliary complications after ligation of hepatic duct stump in donor right hepatectomy. [PATIENT/METHODS] Twenty-one cases of right lobe transplant were divided into two groups according to the mode of donor hepatectomy as follows; in initial 17cases, right hepatic duct (RHD) was dissected close to the tributary to left hepatic duct and the stump was sutured (1st group). In last 4 cases, RHD was ligated close to the tributary and dissected (2nd group). Hepatic duct stumps were reconstructed in recipient with duct-to-duct fashion in all cases except one with hepatico-

jejunostomy. [RESULTS] Follow up period was 7 to 43 months (median: 21 months). In 1st group, two donors suffered from biliary leakage but no in 2nd group. In terms of the number of hepatic duct in the graft, less than half of the cases (8 out of 17) in 1st group had multiple hepatic ducts, but it was 100% in 2nd group. Anastomotic stricture was diagnosed in 4 cases in 1st group but no in 2nd group, who were successfully treated by interventional rediology. One recipient in 2nd group had biliary leakage, which improved without any treatment. [CONCLUSIONS] Ligation of hepatic duct stump in donor hepatectomy increased the incidence of multiple hepatic ducts in right lobe graft. However, the reconstruction could be managed by surgical techniques without any critical complications.

Abstract# 111 Poster Board #-Session: P111-I

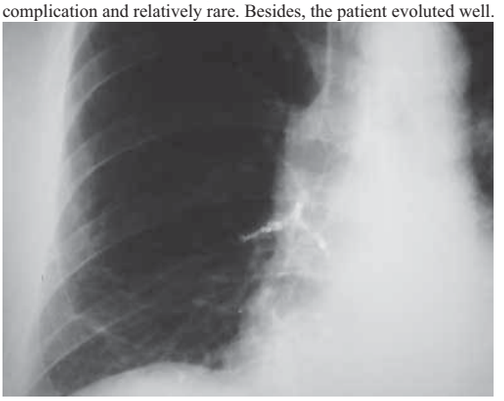
PULMONARY EMBOLISM AFTER CYANOACRYLATE TREATMENT DUE TO GASTROESOPHAGEAL VARICES AFTER LIVER TRANSPLANTATION. Ilka F. S. F. Boin[1], Marilia I. Leonardi[1], Marcelo A. Camargo, Ciro G. Montes[2], Elaine A. Cardoso[1], Luiz S. Leonardi[1]. *[1]Unit of Liver Transplantation, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil; [2]Gastrocentro, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil.*

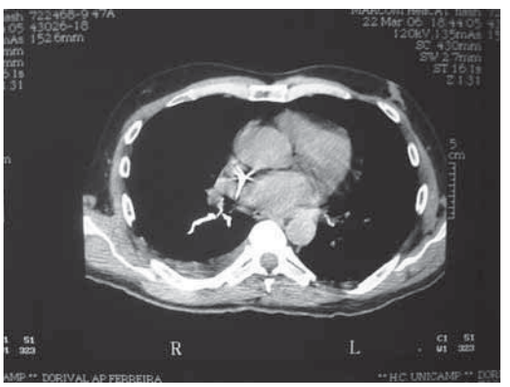
INTRODUCTION: Control of bleeding using tissue adhesives such as cyanoacrylate treatment (CT) has been reported in about 90% of cases.

AIM: To report a CT embolism after massive hemorrhage due to gastroesophageal varices (GEV).

METHODS: Male, 47-years-old, submitted to liver transplantation one year before. He arrived at an Emergence Room with upper digestive hemorrhage and hemodynamicly stable. Upper digestive endoscopic was done and showed GEV and recent bleeding. Angio nuclear resonance and Doppler ultrasonography showed portal vein thrombosis. After one week the patient became with rebleeding and CT was used to stop the hemorrage. It evoluted to massive hemorrage, with Hb=4.0g/dL. The patient was submitted to porta-azygous disconnection (PAD) and splenectomy. In ICU a lung x-ray was taken, which showed CT image into the lung. The patient was discharged after the 16th postoperative day and he has been followed in the outpatient unit of liver transplantation.

CONCLUSION: Pulmonary embolism due to cyanoacrylate is a severe complication and relatively rare. Besides, the patient evoluted well.





Abstract# 112 Poster Board #-Session: P112-I

HEPATIC VEIN RECONSTRUCTION IN EXTENDED RIGHT LOBE GRAFT USING QUILT VENOPLASTY. Ki-Hun Kim[1], Sung-Gyu Lee[1], Shin Hwang[1], Chul-Soo Ahn[1], Dong-Hwan Jung[1], Bum-Soo Kim[1], Dong-Hwan Jung[1], Jung-Ik Park[1], Kyung-Hoon Koh[1], Bum-Sik Shin[1], Jung-Ja Hong[1], Eun-Bok Lee[1]. *[1]Surgery, Asan Medical Center, Ulsan University, Seoul, Korea.*

The most important things in adult living donor liver transplantation (ALDLT) are as follows; donor safety, enough inflow, good outflow and secure biliary anastomosis. As for outflow, progressive regeneration of graft may bring about kinking and distorsion of hepatic vein. Consequently, this has a bad influence on recipient. There are so various techniques of hepatic vein reconstruction in ALDLT using extended right lobe graft. Generally, 3 techniques are reported as like first, unification venoplasty of the right hepatic vein (RHV) and middle hepatic vein (MHV) trunk, second, large patch venoplasty to accommodate RHV and MHV simultaneously, and third, direct RHV anastomosis and separate reconstruction of MHV with or without interposition vein graft. Here we introduce new hepatic vein reconstruction in extended right lobe graft using quilt venoplasty. A dome-shaped vein cuff is attached to the RHV and MHV orifices of an extended right lobe graft. A 48-year-old male patient (172 cm, 68 kg, MELD score 20) with end-stage liver disease due to HBV-related liver cirhhosis underwent living donor liver transplantation using 580 gm extended right lobe graft. The donor was 24-year-old daughter (159 cm, 49 kg) of the patient. Graft-to-recipient weight ratio (GRWR) was 0.82%. There was no significant complication after surgery.

Abstract# 113 Poster Board #-Session: P113-I

RETRANSPLANTATION FOR RECURRENT HEPATITIS C VIRUS INFECTION: A SINGLE CENTER CONTROLLED TRIAL. Elizabeth Gross[1], Forrest Dodson[1], Mariano Dy-Liacco[1], Cohen Stanley[1], Ahn Joseph[1], Van Thiel David[1]. *[1]Division of Abdominal Transplant, Rush University Medical Center, Chicago, IL, USA.*

Retransplantation for recurrent hepatitis C infection remains controversial due to reported poor outcomes. We present our experience with retransplantation for recurrent hepatitis C with a control arm.

Methods: Data was collected prospectively. All patients undergoing retransplantation more than 6 months from previous transplantation were included and were screened with standard cardiac echo. Patients included in the recurrent HCV group were HCV positive and had pathologic confirmation of recurrent HCV infection. Patients included in the control group were HCV positive or negative and had a primary pathologic diagnosis other than recurrent HCV infection. Both patient groups were analyzed for patient survival, operative time, intraoperative transfusions, and length of hospital stay. Kaplan Meier method was utilized to calculate survival at 1, 6, and 12 months.

Results: A total of 45 retransplantations were performed in 38 patients. Twenty-two retransplantations were performed for recurrent HCV and twenty-three for other indications. In the study period from 1/4/2006 until 11/28/2006, 10 patients died. Four patients died within seven days of retransplant as a result of operative complications. Three patients died from sepsis within 6 months from the time of retransplant. Three patients died after 6 months from EBV(1), PTLD(1) and thrombosed right accessory hepatic artery (1). One patient in the HCV group required early retransplantation at 17 days for primary nonfunction. Three grafts were lost due to rejection at 3, 8 and 13 months. Patient survival in the HCV group at 1,6, and 12 months was 90.7%, 76.4% and 76.4%. Patient survival in the non-HCV group at 1,6, and 12 months was similar 86.4%, 86.4% and 76.4%. Operative times were similar in both groups (8.4 hours for HCV and 8.3 hours for non-HCV). Intraoperative transfusions were also similar for both groups (22.3 for HCV and 22.5 for non-HCV). Length of stay was similar for both groups (27 days for HCV and 25 days for non-HCV).

Conclusion: Due to acceptable survival rates and similar hospital courses, retransplantion should be offered to all patients, inclusive of those with HCV reinfection.

Abstract# 114 Poster Board #-Session: P114-I

THYMOGLOBULINE INDUCTION AND LOW-DOSE POSTOPERATIVE IMMUNOSUPPRESSION INFLUENCES OUTCOME OF ANTIVIRAL THERAPY AGAINST HCV RECURRENCE IN LIVER TRANSPLANTATION: LONG-TERM RESULTS. Nicola De Ruvo[1], Fabrizio Di Benedetto[1], Michele Masetti[1], Roberto Montalti[1], Alberto Pierini[1], Rosa Maria Iemmolo[1], Maria Grazia De Blasiis[1], Giorgio E. Gerunda[1]. *[1]Chirurgia generale e Specialita chirurgiche Policlinico of Modena, Liver and multivisceral Transplantation center, Modena, Italy.*

Induction with Thymoglobuline, a potent anti-thymocyte policlonal antibody, and low-dose postoperative tacrolimus has been shown to influence patient's outcome by keeping very low immunosuppressive levels without augmenting the risk of rejection. We investigated the long-term results of such regimen on pattern of response to antiviral therapy with peg-Inf alfa and Ribavirin against HCV recurrence post-transplantation in 27 patients and compared the outcome with that of 30 patients treated with conventional tacrolimus+steroids immunosuppression.

Results: Patients survival did not differ (3-years survival rate of 86% vs 83% in non-Thymo group). 8 patients (40%) of the Thymo group experienced acute rejection vs 12 non-Thymo patients (41,4%). Significantly lower dosages and levels of Tacrolimus were also possible in the Thymo group, and a successful weaning of Tacrolimus monotherapy was accomplished in 60% of patients, without major rejection complications.

Clinically HCV recurrence rate was similar (75% vs 62% of patients), but pattern of recurrence was distinct. At time of HCV recurrence AST/ALT elevation was higher in Thymo group (AST p= 0,006, ALT p=0,03), a lower mean viral RNA load (13,2 ± 1,9 UI/mL vs 15,1 ± 0,8 UI/mL, p=0,002) was present, mean time to histological recurrence of hepatitis C was shorter in Thymo patients (121 days ± 54,3 vs 205 days ± 127, p=0,04). Duration of antiviral treatment was similar (6.9±4.1 vs 8.1±2.9 months) as well as number of withdrawn patients because of toxicity (8 vs 9 patients). Antiviral treatment proved effective in Thymo group in decreasing viral replication after 3 months of therapy (p< 0.02), improving biochemical response (p< 0.02) and allowing a longer SVR after treatment interruption (mean 6.1±3.5 vs 5.3±2.5 months, p< 0.05). However no difference was observed in mean Ishak's histological grading and staging of HCV recurrence at the end of treatment period.

Conclusion: A tolerogenic regimen with Thymoglobuline pre-treatment and low-dose immunosuppression in liver transplant recipients is effective in protecting against rejection and demonstrated a positive impact on HCV virological recurrence that deserves further investigations.

Abstract# 115 Poster Board #-Session: P115-I

HEPATOCELLULAR CARCINOMA AND RECURRRENCE OF HEPATOCARCINOMA ARE ASSOCIATED WITH HBV RECURRENCE AFTER LIVER TRANSPLANTATION. ROLE OF TUMORAL CELLS IN HBV REPLICATION. Luciana C. Faria[1,2], Michelle Gigou[1], Anne-Marie Roque-Afonso[1], Mylene Sebagh[1], Bruno Roche[1], Teresa C. A. Ferrari[2], Catherine Guettier[1], Denis Castaing[1], Samuel Didier[1]. *[1]INSERM Paris XI Unit 785, Centre Hepato-Biliaire, Paul Brousse Hospital, Villejuif, France; [2]Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.*

The aims of this study were to investigate if hepatocellular carcinoma (HCC) is a risk factor for HBV recurrence after LT; to quantify cccDNA and total HBV DNA in HCC and non-tumor cells from the native liver of HBsAg-positive transplanted pts. 113 HBsAg-positive pts who underwent LT from 1995 to 2004 were studied. All pts received HBIG after LT and 57 pts also received lamivudine and/or adefovir. Median follow-up was 53months. 33pts(29.2%) had HCC.cccDNA and total HBV DNA were quantified in HCC and in non-tumor cells from the native liver of 16pts by a real time PCR assay (Werle-Lapostolle, 2004).cccDNA was quantified in HCC cells in 3pts who presented HBV and HCC recurrence. 14pts(12.4%) presented HBV recurrence after LT. On univariate analysis, the risk factors for HBV recurrence were HCC, post-OLT antitumorous chemotherapy, HBV DNA at LT>30,000copies/mL. The independent risk factors for HBV recurrence were HCC, HBV DNA at LT>30,000copies/mL and HBIG monoprophylaxis (vs combined prophylaxis). cccDNA was detected in HCC cells of 11pts and in non-tumor cells of 12/16pts on explant liver. All these pts showed detectable total HBV DNA in tumor and non-tumor tissues. Seven pts developed HBV and HCC recurrence after LT almost concomitantly. cccDNA was detected in HCC metastatic cells after tumoral recurrence in 2/3pts. In conclusion, the presence of HCC, HBV DNA level at the time of OLT and HBIG monoprophylaxis were independent risk factors for HBV recurrence after LT. HBV replication from HCC cells is strongly suggested by the concomitant reccurence of HCC and HBV and by the detection of cccDNA and HBV DNA in tumor tissues.

Study supported by a grant from ANRS, France.
Dr LC Faria supported by a grant from CAPES, Brazil.

Abstract# 116 Poster Board #-Session: P116-I

INVASIVE FUNGAL INFECTIONS IN LIVER TRANSPLANT RECIPIENTS. Luiz F. Lisboa[1], Patrícia R. Bonazzi[1,2], Telésforo Bacchella[2], Marcel C. C. Machado[2], Edson Abdala[1,2]. *[1]Infectious Diseases, University of São Paulo Medical School, São Paulo, SP, Brazil; [2]Liver Transplantation Service, University of São Paulo Medical School, São Paulo, SP, Brazil.*

The aim of this study was to evaluate the incidence and mortality of invasive fungal infections (IFI) after liver transplantation (LT). **Methods**: A cohort of 161 patients submitted to 178 LT from 01/01/2002 to 08/28/2006 was retrospectively reviewed. Patients who survived less than 48 hours and whose IFI had been diagnosed in the first 48 hours after LT were excluded. Immunosuppression was based on tacrolimus or cyclosporin A and prednisone. Antifungal prophylaxis with amphotericin B for 3 weeks was used in these situations: need of hemodialisys, retransplantation, use of OKT3 and fulminant hepatitis as the indication for LT. IFI was defined based on EORTC/NIAID criteria. Infections were identified reviewing laboratory records, medical records and necropsy studies. We considered early IFI those that occurred in up to 90 days post-LT, and the others as late IFI; some variables were compared between the two groups using Mann-Whitney test for continuous variables and Fisher's exact test for categorical variables. The probability of survival was analyzed by the Kaplan-Meier limit-product method and logrank test. **Results**: We evaluated 143 patients, with a median follow-up of 469 days (mean 594, 3-1717). Nine IFI were diagnosed (9/143-6.3%); median time to diagnosis was 7 days (mean 507.5, 3-578). Seven cases were due to *Candida* species (3 *C. albicans*, 2 *C. parapsilosis*, 1 *C. tropicalis* and 1 *C. pseudotropicalis*), 1 case was caused by *Crytococcus spp* and another one by *Rhizopus spp.* Infection sites included 3 blood stream infections, 3 surgical site infections, 1 CNS infection and 1 pleural space. Six cases were early IFI (median 5 days, 3-9), and 3 were late IFI (median 303 days, range 101-578). The need of hemodialisys (p0,047), mean time of mechanical ventilation (p0,021), mean time of vasopressors use (p0,019), mean time of central venous catheter (p0,021) and mean time of urinary catheter (p0,021) were higher in late IFI group. Cohort mortality was 22.4%. Five deaths were verified within the group with IFI (5/9-55.5%, 2/6 early IFI, 3/3 late IFI). The probability of survival significantly differed between patients with IFI compared with all other patients (p0,017). **Conclusion**: The incidence of IFI in this population was low, as has been described nowadays; however the mortality remained high in such cases.

Abstract# 117 Poster Board #-Session: P117-I

ADULT LIVER TRANSPLANTATION IN HIV-INFECTED PATIENTS: SINGLE CENTER EXPERIENCE. Michele Masetti[1], Giovanni Guaraldi[2], Antonio Romano[1], Fabrizio Di Benedetto[1], Nicola De Ruvo[1], Stefania Cocchi[2], Mauro Codeluppi[2], Gian Piero Guerrini[1], Roberto Montalti[1], Rosa Iemmolo[1], Giorgio E. Gerunda[1]. *[1]Liver and Multivisceral Transplant Center, University of Modena, Modena, Italy; [2]Infectious Disease Clinic, University of Modena, Modena, Italy.*

Introduction. We report a retrospective analysis of the results of adult liver transplantation in HIV-infected pts performed between 6-2003 and 10-2006. **Methods.** General inclusion criteria were liver cirrhosis with at least one episode of decompensation and priority based on the MELD score higher than 13. Specific HIV-related inclusion criteria were: CD4 T-cell count greater than 200/mL, and plasma HIV viral load levels lower than 50 copies/mL in pts undergoing HAART, or CD4 T-cell count greater than 100/mL in pts intolerant to HAART.**Results.** A total of 10 LT were performed. All of the patients have been followed for at least six months (mean follow-up 14.8 months ±6.7). Indications for LT were end-stage liver disease due to HCV (6 pts), HBV (3 pts), HCV and HBV (1 pt). Immunosuppression regimen before antiretroviral therapy implementation was with Tacrolimus or Neoral. Three pts were switched to Sirolimus monotherapy, due to management of Kaposi Sarcoma, renal function deterioration and for minimize the potential impact of calcineurin-inhibitors on HCC recurrence and capitalize the previously reported antitumor activity of sirolimus respectively. Nine out of 10 pts reintroduced antiretroviral therapy after LT with the same inhibitor

protease-based regimen administered before LT. In all the cases, HIV viral load below the limit of detection was obtained in the follow up period. Seven out of ten pts are alive while the other three died. One patient died because of pericarditis with a HCV recurrence, one patient developed a severe histological HCV recurrence and eventually died due to invasive pulmonary Aspergillosis, one patient died after two months because of multiple organ failure due to small for size syndrome.The major complication experienced from our recipients was HCV recurrence. In this series 7 out 10 (70%) pts were transplanted with HCV ⊕ antibody, of them 6 (85.7%) developed a moderate to severe recurrence after LT.**Conclusion**. Our results showed that LT may be a reasonable treatment option for selected HIV-infected pts. Nevertheless we have been encountered some difficult-to-handle problems in the management of this particular recipients such as HCV recurrence and renal impairment.

Abstract# 118 Poster Board #-Session: P118-I

COMBINATION ANTIVIRAL THERAPY USING TAILORED REGIMES IMPROVES OUTCOMES IN RECURRENT HEPATITIS C FOLLOWING LIVER TRANSPLANT: RESULTS OF A PROSPECTIVE TRIAL. Jacob Korula[1], Kristi Butenschoen[1], Hector Ramos[1], Tariq Shah[1], Robert Naraghi[1], Yong Cho[2], Richard Lopez[1]. *[1]Multiorgan Transplant Center, St Vincent Medical Center, Los Angeles, CA, USA; [2]National Institute of Transplantation, Los Angeles, CA, USA.*

Antiviral treatment of recurrent hepatitis C after liver transplant is limited by low sustained viral response (20-30%) and high treatment withdrawal rates (29%).

Aim: Assess efficacy of antiviral therapy for recurrent hepatitis C patients after liver transplantation.

Methods: Treatment was based on active viral replication, histological evidence and patient willingness to participate. Therapy included weekly Peg Intron α2b (80-150μg), ribavirin (200-1000 mg), amantidine (100 mg), folic acid (2 mg) daily and growth factors. Treatment endpoints: Early viral response (EVR) - negative HCV RNA or >2Log_{10} decline, 8-20 wks after treatment; End of treatment response (ETR) - negative RNA at treatment end; Sustained viral response (SVR) - negative RNA 6 months after stopping treatment.

Results: 21 pts were treated, 15 male, mean age 59.2± 8.7 yrs. Genotypes were: 1=16 (76%), 3=3 (14%) and 2=2 (10%). 7 (33%) pts had HCC, 5 (24%) had live donor transplant, 3 (14%) had liver-kidney (LK) transplant and 16 (76%) started therapy 3-9 mos after transplant. Immunosuppression was tacrolimus in 19 (90%), cyclosporine (10%) with MMF in 6 (29%). Mean baseline HCV RNA was 9.5 ±11.9 million IU/ml (Log_{10} 6.7±0.6). RNA was negative at 12 wks in 11 pts (52%), >2Log_{10} drop in 3 pts (14%) and negative in 4 pts (19%, 16-24 wks (p=0.006). Thus, 85% of pts responded within 24 wks (RNA Log_{10} decrease 2.69±1.43 from baseline, p=0.0001, Δ mean Log_{10} drop 3.85±1.41). 3 pts (14%) were NR, 1 re-transplanted, and 2 died; both had cirrhosis within 3 yrs. 1 pt (5%) relapsed. Of the 18 responders (85%), 1 refused treatment and 4 stopped treatment due to non-HCV disease.3 pts had viral breakthrough and none of the LK pts had renal graft rejection. 1 pt developed RNA negativity with liver failure which persisted after re-transplantation. 6 (29%) died (including 2 NR). 7 pts with hyperbilirubinemia at treatment onset had poor outcome (2 re-transplanted, 4 died, 1 severe chronic rejection). 9 of the 18 (50%) EVR pts had ETR and 7 (39%) had SVR, 5 (28%) had negative HCV RNA >36 months.

Conclusion: We show improved outcomes with treatment of recurrent hepatitis C after transplant. We expect further improvement as more ETR patients achieve SVR.

Abstract# 119 Poster Board #-Session: P119-I

SHOULD FIBROSIS SCORE IN POST LIVER TRANSPLANT ALLOGRAFT FOR HEPATITIS C RECURRENCE BE ALWAYS ESTIMATED WITH GOMORI TRICHROME STAIN? Ashokkumar Jain[1], Charlotte Ryan[2], Mark Orloff[1], Peter Abt[1], Pat Milot[1], Adel Bozorgzadeh[1]. *[1]Surgery, URMC, Pittsford, NY, USA; [2]Pathology, URMC, Pittsford, NY, USA.*

Recurrence of hepatitis C is almost universal after liver transplantation (LTx). In a significant number of patients, the recurrence is indolent, progression of disease often slow and grafts can survive for several years without a need for re-transplantation. Fibrosis score appears to be a significant indicator of impending liver failure. Currently, fibrosis score is determined most often on H & E stain alone and Gomori trichrome stain (specific for fibrosis) is not always performed.

Aim: To examine the importance of Gomori trichrome stain in hepatic allografts for HCV recurrence vs. H&E stain

Patients and Methods: Between January 2002 and January 2006, 102 liver transplant patients (male=79, female=25; mean age 50.3± 7.7 years) with HCV infection (genotype distribution:1-24, 1A-24, 1B-31, 2-4, 3-5. 14 unknown) had 197 liver biopsies (mean 283± 44.9, median 8.7 months post LTx). Formalin fixed paraffin embedded sections at 4 micron yielded 3 serial sections H&E stained and 3 serial sections Gomori trichrome stained slides. All biopsies met with minimal six portal triad requirements (usually 12 to 22 portal trials). Fibrosis score was originally determined with H & E stain. A single experienced hepatic pathologist, blinded to the patients' identification and original fibrosis stage, scored all the trichrome stained slides for fibrosis. Patients' clinical findings, viral load, biochemical abnormalities and immunosuppression were identified from the time of biopsies. The differences in fibrosis score between H & E and Gomori trichrome stain were compared using t- test (SPSS windows base)

Results: The mean fibrosis score on H & E stains was 1.0 ± 1.25 (median 1.0, range 0 to 6) whereas the mean fibrosis score on trichrome stain was significantly higher 1.69± 1.42 (median range 0 to 6) (P=0.0001). Overall trichrome stain score was higher in 53.3%, lower in 3% and same in 43.7% of biopsies. The distribution of fibrosis score on H&E stain and its comparison with trichrome stain is shown in the table below.

Fibrosis score on H&E Stain		Trichrome Stain compared to H&E Stain		
		Same	Higher	Lower
score	n	n(%)	n(%)	n(%)
0	94	46(48)	48(52)	0(0)
1	45	15(33.3)	29(64.5)	1(2.2)
2	38	17(44.7)	18(47.3)	3(7.9)
3	10	3(30)	5(50)	2(20)
4	5	2(40)	3(60)	0(0)
5	4	2(50)	2(50)	0(0)
6	1	1(100)	0(0)	0(0)
Overall		86(43.7)	105(53.3)	6(3.0)

Abstract# 120 Poster Board #-Session: P120-I

ACTIVE IMMUNIZATION IN PATIENTS WHO UNDERWENT LIVER TRANSPLANTATION FOR HBV-RELATED LIVER DISEASE. Hae Won Lee[1], Kyung-Suk Suh[1], Woo Young Shin[1], Eung-Ho Cho[1], Jai Young Cho[1], Nam-Joon Yi[1], Jung-Hwan Yoon[2], Hee Chul Yu[3], Baik Hwan Cho[3], Kuhn Uk Lee[1]. *[1]Department of Surgery, Seoul National University College of Medicine, Seoul, Republic of Korea; [2]Department of Internal Medicine, Seoul National University College of Medicine, Seoul, Republic of Korea; [3]Department of Surgery, Chonbuk National University Medical School, Jeonbuk, Republic of Korea.*

Active immunization has been tried as an alternative strategy of HBV prophylaxis after liver transplantation for HBV-related liver disease because of several disadvantages of conventional prophylactic methods with hepatitis B immune globulin (HBIG) and lamivudine. We described our experience of HBV vaccination to find its problems and future prospects. Preliminary study was performed on eight patients who had undergone LT for HBV-related liver disease more than two years before. All patients showed normal liver function without HBV recurrence or other complications before vaccination. High dose of recombinant vaccine (80μg) were intramuscularly administered four times (0-, 5-, 10-, and 25-week schedule). We continued HBIG administration during the study. Additionally, the vaccination results of twelve random cases not included in this study were also investigated. In only one (12.5%) of eight patients included in preliminary study, HBIG administration could be discontinued (>180IU/L). The others continued to need HBIG to maintain proper anti-HBs level. Of twelve non-study patients, however, six could maintain anti-HBs level without HBIG administration and all of three patients who had received only lamivudine and vaccination because of intolerability to HBIG could maintain good anti-HBs level (>30IU/L) without HBIG although they required repetitive boosters. High dose HBIG may disturb the production of anti-HBs antibodies and HBV vaccination under lamivudine prophylaxis is seems to be more effective for active immunization. More potent vaccination method than simple high dose recombinant vaccine, such as adjuvant HBV vaccine, may be necessary for successful active immunization.

Abstract# 121 Poster Board #-Session: P121-I

INVASIVE FUNGAL INFECTIONS FOLLOWING LIVER TRANSPLANTATION; RISK FACTORS, INCIDENCE AND OUTCOME-SINGLE CENTRE EXPERIENCE.

Marek Pacholczyk[1], Beata Lagiewska[1], Leszek Adadynski[1], Gajusz Gontarczyk[1], Dariusz Wasiak[1], Janusz Trzebicki[2], Andrzej Kobryn[1], Pawel Ziemianski[1], Andrzej Chmura[1]. *[1]General and Transplantation Surgery, Warsaw Medical University, Warsaw, Poland; [2]Anaesthesiology and Intensive Care, Warsaw Medical University, Warsaw, Poland.*

The incidence of invasive fungal infections, particularly invasive candidiasis and aspergillosis, after liver transplantation (OLT) is influenced by multiple factors; among them: surgical factors, rate of rejection and retransplantation were documented by other authors over the last years.The other analyzed independent factors described by other authors were thrombocytopenia (represents subgroup of liver transplant patients susceptible to early major infections) and hepatic iron overload. **Patients and Methods.** The incidence of fungal infection at our institution was assessed over the last 6 years. The retrospective analysis of 175 consecutive OLT was undertaken to evaluate incidence, risk factors, clinical course, and outcome of fungal infections. 31 recipients out of the study group (17.7%) were transplanted as HU cases and 7 (4%) received the second transplant. Piperacylin/Tazobactam or Imipenem (in urgent transplantation) were used as standard antibiotic perioperative prophylaxis. All OLT recipients received Flukonazol perioperatively for10 to 14 days. Selective digestive decontamination (SDD) is used routinely at our institution (consist of Amikin and Nystatine).

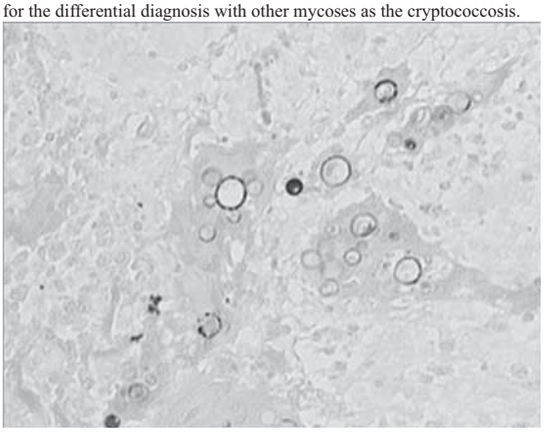
Results.Infections involving *Aspergillus* (5 cases), *Candida* (10 cases), and *Cryptococcus* (1 case) were observed in 9.1% (16/175) of our recipients. Except one case (Cryptococcus encephalitis at 3 months following OLTx) all of the episodes (15) developed during the first postoperative month. All cases of lung aspergillosis (5 cases) developed in patients with longstanding cholestasis prior to transplantation. In one case additionally posttransplant extrahepatic bile duct necrosis requiring reconstruction of biliary anastomosis proceeded pneumonia *(Aspergillus*). In 3 cases pulses of methyl-prednisolone were used for episode of acute rejection. Apart from that, none of the potential risk factors for fungal infections described by other authors was noted in our patients. 4/5 aspergillosis cases survived on combined (2 drugs) antifungal therapy. Recipient diagnosed *Cryptococcus* encephalitis died. All cases with UTI/ respiratory candidiasis survived. **Conclusion.** Early diagnosis and prompt treatment is detrimental for patients survival.

Abstract# 122 Poster Board #-Session: P122-I

PARACOCCIDIOIDOMYCOSIS AND LIVER TRANSPLANTATION: CASE REPORT.

Marcio D. Almeida[1], Bianca Della-Guardia[1], Luis F. A. Camargo[2], Denise C. Pasqualin[3], Vinicius M. R. Silva[1], Thiago Beduschi[1], Thomson M. Palma[1], Sergio Mies[1]. *[1]Liver Unit, Albert Einstein Hospital, Sao Paulo, SP, Brazil; [2]Infectology, Albert Einstein Hospital, Sao Paulo, SP, Brazil; [3]Pathology, Albert Einstein Hospital, Sao Paulo, SP, Brazil.*

The paracoccidioidomycosis (PC) is a systemic mycosis caused by the *Paracoccidioides brasiliensis*. When not treated appropriately can progress to disseminated forms and can be lethal. The risk factor is professions related to the handling of the soil. Unlike the other mycoses it is not usually related to diseases and immunosuppressant factors. CASE REPORT: an 18 year-old boy, submitted to a liver transplant 2 years and 8 months ago for Budd-Chiari syndrome, using tacrolimus as immunosupressor (trough level between 7 and 10ng/ml), began with painful nodule in the right chest that developed with spontaneous drainage of suppurative secretion and later with painless ulceration. After about 40 days the patient began with inflammatory signs, fever of 39ºC and toxemia. The initial blood count revealed leucocytosis with normal hepatic enzymes and renal function. A culture of the secretion resulted negative. The biopsy of the lesion evidenced inflammatory process in deep dermis with presence of fungal elements that demonstrated the characteristic aspect of *P. brasiliensis* under Grocott coloration (fig.1). The PCR in the tissue was positive for the fungus. A thoracic tomography evidenced infiltrative lesion committing soft parts in the right chest; lesions were also observed in thoracic bone outline, predominantly lithic, committing the clavicles, scapulas, breastbone, bilateral costal arches and some vertebral bodies translating a disseminated form of the infection and finally the presence of mediastinal lymph nodes. It was treated initially with trimethoprim-sulfamethoxazole intravenously and later orally. The diagnosis of the PC should be considered among the fungal infections in transplanted patients. The treatment with trimethoprim-sulfamethoxazole is efficient in that group of patients (from 12 to 18 months). All of the diagnostic means should be used for the differential diagnosis with other mycoses as the cryptococcosis.



Abstract# 123 Poster Board #-Session: P123-I

CLASSICAL DENGUE FEVER AFTER LIVER TRANSPLANTATION.

Gustavo R. Coelho[1], Jose T. Valenca Junior[1], Tarciso Daniel S. Rocha[1], Cyntia F. G. Viana[1], Bronner P. A. Goncalves[1], Evelyne S. Girao[1], Marcos Aurelio P. Barros[1], Claudia R. Fernandes[1], Joao Batista M. Vasconcelos[1], Jose Huygens P. Garcia[1]. *[1]Centro de Transplante de Figado do Ceara, Federal University of Ceara, Fortaleza, Ceara, Brazil.*

Dengue fever is the most important mosquito-transmitted viral disease and accounts annually for several million cases and deaths worldwide. It's an acute febrile disease found in the tropics, although its epidemiology is shifting due to changing societal factors. Dengue infections may be asymptomatic or give rise to undifferentiated fever, dengue fever, dengue haemorrhagic fever or dengue shock syndrome. we describe a case reported of classical dengue fever after liver transplantation. A 12-year-old male underwent cadaveric liver transplantation for fulminant hepatitis. He was discharged after 23 days on tacrolimus and prednisone. Fifteen months after transplant, he presented with high-grade fever with chills. He also had general weakness and myalgia. Four days after the admission, the patient became afebrile. Serology for dengue was positive. This report warn transplant physicians to the possibility of a dengue fever after transplantation, specially in endemic areas.

Abstract# 124 Poster Board #-Session: P124-I

POTENTIAL INHIBITING ROLE OF FTY720 IN LIVER FIBROSIS.

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Purpose: The aim of this study is to investigate the potential anti-fibrotic role of FTY720 in liver diseases.

Introduction: Liver fibrosis is the common response to chronic liver injury. Activated Hepatic Stellate Cells (HSCs) play a pivotal role in the development of liver fibrosis.

Platelet-derived growth factor (PDGF)-BB actually represents the most vigorous stimulator for HSCs. Furthermore sphingosine-1-phosphate (S1P), released from activated platelets, has been recently shown to increase the proliferation of cultured HSCs (i.e. trans-activation of PDGF receptor). A relevant issue has been recently led to the hypothesis of a possible interference of SP1 receptors with FTY720, which is a potent immunomodulator.

Results: Our work demonstrated that FTY720 can interfere in the signalling pathways of HSCs activation, with a reduced mitogenic effects: experiments showed a 45.6% decrease of activated HSCs in the presence of both FTY720 and PDGF metabolites in comparison with no treatment group *(P=0.033)*. Furthermore, our data support that the phosphorylated form of the drug contributes to its action, but not exclusively, suggesting that FTY720 is effective also in the not-phosphorylated form.

HSCs treatment with FTY720 resulted in a significant inhibition of PDGF-induced proliferation in a concentration-dependent manner (graph 1), without citotoxic effects. However, since FTY720 exerts a more powerful effect on PDGF stimulation than a standard Gi-protein inhibitor, we can suppose that

the drug might act not only through receptors but also through intracellular targets. Finally, the evalutation of chemotaxis confirmed more than 50% decrease of cell migration when the cells, stimulated by PDGF, were pre-treated with FTY720 *(P=<0.001).*

Conclusion: Our results suggest the validity of this molecule as a potential novel anti-fibrogenic drug, and further reinforce and extend its role for other potential clinical applications.

Graph 1: Inhibition of PDGF-induced proliferation by different [ ] of FTY720.

Abstract# 125 Poster Board #-Session: P125-I

OXYGENATED MACHINE PERFUSION OF NON-HEART-BEATING DONOR LIVERS AT DIFFERENT TEMPERATURES. Peter Olschewski[1], Wenzel Schoening[1], Volker Schmitz[1], Peter Neuhaus[1], Gero Puhl[1]. *[1]Dep. of Visceral and Transplant Surgery, Charite Universitätsmedizin Berlin, Berlin, Germany.*

Although the use of non-heart-beating donors has the potential to increase the number of available organs, livers are used only very scarce because of the risk of primary non function. There is evidence that machine perfusion is able to improve the preservation of marginal organs. The aim of this study was to evaluate the influence of the perfusate temperature during oxygenated machine perfusion on the graft quality.

Livers from male wistar rats were harvested after 60 minutes warm ischemia induced by cardiac arrest. The portal vein was canulated and the liver flushed with Lifor® (Lifeblood Medical, Inc) organ preservation solution for oxygenated machine perfusion (MP) at 4, 12 or 21C°. Other livers were flushed with HTK and stored at 4°C by conventional cold storage (CS). After 6hours either machine perfusion or cold storage all livers were isolated reperfused with Krebs-Henseleit Buffer and functional as well as structural data were collected. During machine perfusion livers perfused at 21°C had a siginficant lower portal venous resistance and higher bile production compared to livers perfused at 4°C and 12°C. Although not significant an increased leakage of ALT was observed at higher temperatures. Upon reperfusion all machine perfused livers had a higher metabolic activity and reduced liberation of transaminases compared to livers stored by simple cold storage. MP improved the preservation of livers from NHBD. It seems that perfusion at mild hypothermia of 21°C has positive effects on the portal venous resistance and metabolic activity, but this has to be balanced with an increased risk of parenchymal damage. Moreover, Lifor® organ preservation solution, containing microencapsulated hem as oxygen carrier, has proven to be effective in preserving livers at elevated temperatures.

Abstract# 126 Poster Board #-Session: P126-I

IMPACT OF STEROIDS ON HEPATITIS C REPLICATION IN VITRO. Scot D. Henry[1], Jeroen van Dijck[1], Herold J. Metselaar[2], Hugo W. Tilanus[1], Luc J. W. van der Laan[1]. *[1]Surgery, Erasmus MC-Univsersity Medical Center, Rotterdam, Netherlands; [2]Gastroenterology & Hepatology, Erasmus MC-University Medical Center, Rotterdam, Netherlands.*

Background: Chronic hepatitis C virus (HCV) infection is the leading indication for liver transplantation (Tx) worldwide. The success of Tx is often compromised by a rapid re-infection of the graft due to persistent virus. Many factors have been implicated in the increased severity of recurrence, including immunosuppressant regimes. Steroids are universally administered during liver Tx and are often used for low dose maintenance of immunosuppression after Tx. Clinical evidence suggests that steroids boluses used to treat acute rejection are associated with an in increase in HCV viral load and the severity of recurrence. The aim of this study was to determine the direct effect of steroids on the replication of HCV, in vitro, to better understand their effects on HCV recurrence after liver Tx.

Methods: The effect of the steroids Dexamethasone (Dex) and Prednisolone (Pred) were tested in vitro using an HCV-replicon model. HCV replication was assessed based on luciferase reporter expression (luminescence) and HCV RNA (RT-PCR). As controls, cell proliferation, cell death and total protein content were determined.

Results: In short-term (18hr) experiments, at clinically relevant concentrations (1-10 nM), both Dex and Pred appeared to slightly increase HCV replication at 5 nM concentration. Steroids increased the total protein content of replicon cells. After normalizing the luciferase expression for total protein, Dex and Pred resulted in a slight reduction of HCV replication. This minor reduction of HCV replication was confirmed by RT-PCR showing over 20% lower HCV RNA levels due to steroids. Neither steroid had an affect on the viability of replicon cells within short term cultures, though both Dex and Pred significantly reduced cell proliferation at the highest concentration tested.

Conclusion: Despite clinical evidence that the use of steroids aggravates recurrence of HCV, our in vitro experiments show that steroids do not specifically enhance HCV viral replication. These findings suggest that the accelerated HCV recurrence after liver Tx is more likely due to steroid mediated effects on the anti-viral immune response then on viral replication.

Abstract# 127 Poster Board #-Session: P127-I

GENE EXPRESSION PROFILE IN THE LIVER DURING ACUTE CELLULAR REJECTION. Keizo Dono[1], Shigeru Marubashi[1], Shogo Kobayashi[1], Naoki Hama[1], Tadafumi Asaoka[1], Kunihito Gotoh[1], Hidenori Takahashi[1], Atsushi Miyamoto[1], Yutaka Takeda[1], Koji Umeshita[1], Tomoaki Kato[2], Phillip Ruiz[2], Andreas G. Tzakis[2], Morito Monden[1]. *[1]Department of Surgery, Graduate School of Medicine, Suita City, Osaka, Japan; [2]The Division of Liver/Gastrointestinal Transplant, University of Miami School of Medicine, Miami, FL, USA.*

Background: The diagnosis of acute cellular rejection (ACR) of the liver grafts are made by microscopic examination of biopsy samples, and pathological diagnosis are recognized as a golden standard. However differential diagnosis of ACR from other liver damages after transplantation is often difficult only by liver biopsy. Therefore biomakers useful for ACR diagnosis are anticipated. We examined gene expression pattern in the liver grafts during ACR in animal model and human samples to seek biomakers for diagnosis of ACR.

Materials and Method: Animal model:. Liver grafts from Lewis to Lewis (isograft model; n=3) or DA to Lewis (ACR model; n=4) were harvested three days after rat orthotopic liver transplantation. We compared mRNA profiles in the grafts using rat 11k polynucleotide microarray. Human liver biopsy samples: We analyzed 22 graft liver biopsy samples obtained from HCV-positive transplant recipients. Among them, 9 samples were pathologically diagnosed as ACR predominant, whereas 13 samples were diagnosed as recurrence of hepatitis C without ACR. Using oligonucleotide microarray system covering 30,000 human probes (AceGene Human 30K; DNA Chip Research Inc, Tokyo) gene expression pattern in the liver grafts were analysed.

Results: In the animal model, we identified 89 genes which differentially expressed in the liver grafts during ACR (39 up-regulated and 50 down-regulated). According to the Gene Ontology Database, most of the up-regulated genes in ACR model were related to immune response. In human biopsy sample, unsurpervised hierarchical clustering demonstrated very good separation of ACR biopsy sample from non-ACR samples. We identified 2206 genes which were differentially expressed between two groups. Biological interactions using the IPA tool demonstrated several genetic networks targeted by ACR.

Conclusion: Both in animal and human model, distinctive gene expression patterns were observed in the liver during ACR. Significant number of genes were upregulated in ACR process and most of them were related to immune response. These data may helps us to seek noble biomakers for accurate ACR diagnosis.

Abstract# 128 Poster Board #-Session: P128-I

DOES DONOR AND RECIPIENT EICOSANOIDES BLOOD LEVEL CORRESPOND WITH INTRAOPERATIVE HEPATIC BLOOD FLOW AND EARLY LIVER ALLOGRAFT FUNCTION. Gajusz Gontarczyk[1], Beata Lagiewska[1], Marek Pacholczyk[1], Maciej Kosieradzki[1], Piotr Tomaszewski[3], Lidia Jureczko[2], Leszek Adadynski[1], Wojciech Lisik[1], Dariusz Wasiak[1], Janusz Trzebicki[2], Andrzej Chmura[1]. *[1]General and Transplantation Surgery, Warsaw Medical University, Warsaw, Poland; [2]Anaesthesiology and Intensive Care, Warsaw Medical University, Warsaw, Poland; [3]Biochemistry and Clinical Chemistry, Warsaw Medical University, Warsaw, Poland.*

20-HETE and 15-HETE (hydroxyeicosatetraenoic acids) are metabolites of arachidonic acid (AA) that modulates vascular tone.Our previous studies showed correlation of intra-operative blood flow in the transplanted liver and its immediate function.**The aim** of this study was to assess the relation between eicosanoides blood concentrations (in the donor and in the recipient) and hepatic blood flow on revascularization of the liver allograft and its early

function. **Methods.** Hepatic artery and portal vein blood flow (PV) were assessed in 37 liver transplant recipients. Parenchymal flow was recorded with laser doppler. Measurements were taken at 30 and 120 minutes after reperfusion in 37 recipients. Flow results were correlated to early liver function.Blood samples for AA, 15-HETE and 20-HETE were taken from peripheral vein in the donor prior to harvesting and in the recipient at the start of the Tx, in an anhepatic fase, during the revascularization of the liver, 30 min. and 120 min.following reperfusion. **Results**. Among recorded flow results we have found significant correlation of PV with early graft function measured as: serum AST and ALT level assayed daily for 3 days.

	AST-day 1	AST-day 2	AST-day 3	ALT-day 1	ALT-day 2	ALT-day 3
r	-0.67	-0.62	-0.61	-0.64	-0.55	-0.46
p	0.004	0.01	0.01	0.008	0.03	0.07

Significant negative correlation of 15-HETE and 20-HETE level in the donor (r=-0.53 p<0.03);20-HETE (r=-0,53 p<0.03) with PV was also noted. Further correlation were made between 15-HETE levels in the blood samples received from hepatic veins during reperfusion (r=-0.53 p<0.03) and 30 min after reperfusion (r=-0.53 p<0.03) with PV.Conclusion.15-HETE and 20-HETE levels correlate with liver allograft blood flow.

Abstract# 129 Poster Board #-Session: P129-I

MANIFESTATIONS OF LIVER DISEASES IN SEVERE OBESE PATIENTS. Wojciech Lisik[1], Zbigniew Wierzbicki[1], Justyna Domienik[1], Maciej Kosieradzki[1], Jacek Borowski[1], Janusz Trzebicki[2], Andrzej Chmura[1], Wojciech Rowinski[1]. *[1]Department of General and Transplantation Surgery, Medical University of Warsaw, Warsaw, Poland; [2]Department of Anesthesiology and Intensive Care, Medical University of Warsaw, Warsaw, Poland.*

Fatty liver disease can range from fatty liver alone (steatosis) to fatty liver associated with inflammation – non-alcoholic steatohepatitis (NASH). Steatohepatitis may progress to liver fibrosis and cirrhosis, and may result in liver-related morbidity and mortality. Fibrosis or cirrhosis in the liver is present in 30-50% of patients with NASH. Approximately 30% of patients with fibrosis develop cirrhosis after 10 years and, many of them may require liver transplantation for cryptogenic cirrhosis as a pre-transplant diagnosis.
Methods and patients.
In our study we analyzed frequency of NASH in severe obese patients undergoing bariatric surgery. Comparison enclosed results of 106 patients selected for bariatric surgery: either Roux-en-Y Gastric Bypass (RYGB) or Vertical Banded Gastroplasty (VBG) - mean body weight 142 kg, mean BMI 48.2 kg, mean body fat 51.2 %, mean age 42.6 years old, 88 women, 18 men.
We assessed biochemical (aminotransferases, albumin level, prothrombin time, alkaline phosphatase, bilirubin) and morphological parameters of liver (using ultrasonography and the liver biopsy taken during surgery).
Results
All patients had normal prothrombin time, normal serum albumin, alkaline phosphatase, bilirubin and increased AST (in 35% patients), ALT (in 41% patients).
The analysis of liver biopsies have shown NASH in 45 % patients, liver steatosis in 85 % patients, panlobular inflammation (42%), portal fibrosis (17%). We noticed significant statistical correlation between BMI and level of hepatic steatosis.
Conclusion
NASH and fibrosis, leading to end-stage liver disease, are necessary to be monitored in severe obese patients. Bariatric surgery, and consequent on it weight loss, may reverse these changes.

Abstract# 130 Poster Board #-Session: P130-I

MASSIVE HEMOBILIA AFTER PERCUTANEOUS CHOLANGIOGRAPHY TREATED BY SUPERSELECTIVE EMBOLIZATION IN A LIVER TRANSPLANT RECIPIENT. Ilka F. S. F. Boin[1], Marcelo A. Camargo, Walmir C. Oliveira[2], Marilia I. Leonardi[1], Raquel Stucchi[3], Luiz S. Leonardi[1]. *[1]Unit of Liver Transplantation, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil; [2]Radiology, Faculty of Medical Science - Unicamp, Campinas, Sao Paulo, Brazil; [3]Infectology, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil.*

Introduction: Hemobilia is a rare but potentialy life-threaening cause of a upper or lower gastrointestinal bleeding and transarterial embolization is considered the first line of intervention to stop the bleeding for most causes o hemobilia.There is few cases reported after liver transplantation.
Aim: To study a liver transplantation case who had massive hemobilia after percutaneous transhepatic cholangiography .
Method: We report a 56-years-old, male, who was submitted a liver tranplantation 9 years ago. After drugs treatement to Hansen disease he presented severe cholestasis during four months without improve after to stop the drugs. He was submitted to percutaneous transhepatic colangiographyas part of cholestasis investigation, and developed massive hemobilia 3 days later, with delayed lower gastrointestinal active bleeding and hypovolemic shock. Confirmation diagnosis and treatment was achieved through selective angiography and embolization 6 hours after.
Results: There was no rebleeding, abscess formation or allograft necrosis in a one year follow up.
Conclusion: Transcatheter embolotherapy was efficiency and is recommended as initial treatment to control serious iatrogenic hemobilia even in transplanted liver patients.

Abstract# 131 Poster Board #-Session: P131-I

ABO-INCOMPATIBLE LIVER TRANSPLANTATION FOR CRITICALLY ILL ADULT PATIENTS. Christian Toso[1], Mohammed Al-Qahtani[1], Faisal A. Alsaif[1], David L. Bigam[1], Glenda A. Meeberg[1], James A. M. Shapiro[1], Vincent G. Bain[2], Norman M. Kneteman[1]. *[1]Department of Surgery, University of Alberta Hospital, Edmonton, AB, Canada; [2]Department of Medicine-Hepatology, University of Alberta Hospital, Edmonton, AB, Canada.*

The use of ABO incompatible (ABO-In) liver transplants remains a controversial solution to acute liver failure in adults.
Adult liver recipients with acute liver failure or severely decompensated end-stage liver disease, intubated and/or in ICU were included in the study. They were grouped as ABO-In (n=12), ABO-compatible (n=29, ABO-C) and ABO-identical (n=65, ABO-Id). All ABO-In patients received quadruple immunosuppression with antibody depleting induction agents (except one), calcineurin inhibitors, antimetabolites and steroids.
Overall, patient and graft survival were 69 and 64% at one year and 63 and 58% at five years. No significant differences were seen between the 3 groups for ABO-In, ABO-C and ABO-Id grafts: graft survivals were 67, 62 and 67% at one year and 58, 54 and 60% at five years; patient survivals 83, 69 and 67% at one year and 75, 61 and 62% at five years. Two ABO-In grafts were lost, due to hyper-acute rejection and hepatic artery thrombosis. Overall, 38 (36%) patients had a biliary complication, 7 (7%) an hepatic artery stenosis, 4 (4%) an hepatic artery thrombosis and 7 (7%) a portal vein thrombosis. Surgical and infectious complications were similarly distributed between groups.
The graft and patient outcomes achieved in this study, in all ABO compatibility settings, reflect the overall improvement in the management of both high status and ABO incompatible recipients. Our results suggest that ABO incompatible transplants should be viewed as an important therapeutic option in adult patients with acute liver failure awaiting an emergency procedure.

Abstract# 132 Poster Board #-Session: P132-I

COULD THE MELD SCORE BE USEFUL IN ACUTE LIVER FAILURE SCENARIO TO DEFINE PATIENTS BEYOND THE LIVER TRANSPLANTATION TIME? Lucio F. Pacheco-Moreira[1], Elizabeth Balbi[1], Thiago B. Annunziata[2], Joyce Roma[1], Karina P. dos Santos[2], Marcelo Enne[1]. *[1]Liver Transplantation Unit, Bonsucesso General Hospital, Rio de Janeiro, Brazil; [2]Fluminense Federal University, Niteroi, Brazil.*

Background/Aims: Nowadays the decision to indicate a liver transplantation (LT) in acute liver failure (ALF) scenario is in accordance with two classical classifications: the King' s College or the Clichy criteria. Recently, the MELD index, an established index for chronic liver disease, was used for patients with ALF to indicate transplantation. By the time the indication for LT is defined, patient clinical status may progressively worse waiting for a graft. At the moment of the transplantation some patients are extremely sick. In this study, the MELD score was used to define which patient is beyond LT time, it means, who will die even with the transplantation.

Methods: From 2001 to 2006,our team performed 204 LT. ALF was responsible for 25 LT, 9 in patients under 18 years old (8 children survived), and 16 in adults. Medical records of these 16 patients were reviewed to calculate the MELD score just before the LT. MELD score of the dead patients, after LT (group 1, n=8), was compared to the MELD score of group 2 (n=9), the group that was alive after LT, using t-test. Others variables, like creatinine, need of dialysis, use of vasoactive amine, and mechanical ventilation, all before LT, were analyzed in the two groups, and compared using t-test and *chi-square test* (Fisher). Statistic significant difference was defined when $p<0.05$.

Results: MELD score±SD was 51.86±12.3 for group 1, and 38.90±7.4 for group 2 ($p<0.02$). There was no difference between creatinine level in two groups ($p=0.21$). Also, the use of vasoactive amine and need of dialysis before LT were not different in both groups ($p=0.16$ and $p=0.30$, respectively). Maybe, it occurred due to the low number of patients in the groups. The mechanical ventilation had a 3.87 relative risk to death after LT.

Discussion: Many variables influence the outcome of patients with ALF submitted to a LT. Organ availability and quality of the graft are donor characteristics that could change the result of transplantation. We try to use the MELD just before the LT to define prognosis of this surgery, and also if the patient is beyond LT time. Other studies will be necessary to confirm our results. In the future, the MELD index may become useful to avoid a futile LT for ALF patient.

Abstract# 133 Poster Board #-Session: P133-I

LONG TERM OUTCOME OF LIVER TRANSPLANTATION FOR ACUTE LIVER FAILURE DUE TO HEPATITIS B AND RESPONSE TO VACCINATION. Gustavo Braslavsky[1], Elizabeth Orieta[1], Nora Cejas[1], Pedro Trigo[1], Javier Lendoire[1], Oscar Imventarza[1]. *[1]Liver Transplantation, Hospital Dr. Cosme Argerich, Buenos Aires, Argentina.*

Introduction: In the last 10 years , liver transplantation for hepatitis B has been an accepted indication with very good outcome due to the possibility of prophylactic treatments with anti-hepatitis B gammaglobulin (HBIG) and antiviral drugs .Although patients (pat.) have good postransplantation survival , it is still in debate which is the best prophylactic regimen to prevent hepatitis B relapse.Some groups recently have been used postransplant vaccination **.**In this paper we present long term outcome of pat. transplanted for fulminant hepatic failure (FHF) due to hepatitis B in our center. **Objective:** To evaluate viral , serologic, and histological long term outcome of the pat. transplanted for fulminant hepatic failure due virus B and the response to vaccination.

Methods: From 12/1996 to 8/2006 ,10 pat. were transplanted for FHF due to hepatitis B.3 pat. died before 1 year postransplant and 7 pat. present a mean survival of 5 year and 8 months (3 to 10 years) . Gender : 2 male., mean age 38 years (18 at 56).3 pat. received HBIG and all Lamivudine (LAM) 150 mg/day .6 of the 7 pac. received postransplant vaccination , all after 2 years postransplantation with stable graft without cellular rejection . The pat. received double dose (40 mcg) of conventional vaccine 3 times (0,1 and 2 months). Five pat. recieved two courses and 1 pat. 3 vaccination courses. Complete serology ,HBV-DNA and histological evaluation were determined.

Results: Pretrasplant serology : HBsAg (+) 4/7 pac, HBeAg (+) 3/7 pac. , Anti-Hbe 4/7 pac., Anti-Hbs (+) 0/7 .Postransplant: No pac. presented hepatitis B relapse ,either in pat. that received HBIG or not .HBV-DNA was negative and histology did not report hepatitis. The 3 pat. with pretrasplant HBeAg (+) presented seroconversion to AntiHBe. No pat. presented spontaneous titles of Anti-HBs. Of the 6 patients that received vaccination , 3 responded with of Anti-HBs > 100 mUI/ml (mean 250,22 mUI/ml). These pat. were HBeAg (-) at the moment of the transplant. **Conclusion:** Any pat. developed hepatitis B relapse, with or without HBIG prophylactic .We didn´t see LAM resistance. With the conventional double dose vaccine ,after the administration of 2 cycles we obtained response in 50% of the pat.Taking account series published with pat. transplanted for HBV cirrhosis, in our pat. with FHF a good response was obtained with vaccination.

Abstract# 134 Poster Board #-Session: P134-I

EMERGENCY LIVING DONOR LIVER TRANSPLANTATION FOR FULMINANT HEPATIC FAILURE. R. Kakodkar[1], A. S. Soin[1], S. Saigal[1], S. Nundy[1]. *[1]Department of Liver Transplantation, Sir Ganga Ram Hospital, New Delhi, India.*

Clinical Background:

Transplant free survival in patients with fulminant hepatic failure is poor. Timely availability of a suitable cadaver organ is often the only hope. In areas where this hope is unrealistic, living donor liver transplantation has been employed but demands unusual expediency in donor and recipient preparation and operation.

Case report

A girl was referred to our centre with rapidly increasing jaundice for 2 weeks and grade III hepatic encephalopathy for 2 days. At admission she required mechanical ventilation and had a total bilirubin of 556 mmol/L , platelet count of $55x10^6$ / L and INR of 7.There was history of receving anti-tuberculous therapy (INH+Rifampicin+Pyrazinamide) for suspected knee-joint tuberculosis in the preceding 12 weeks. Viral, metabolic, autoimmune, toxic workup and septic screen was negative. Neurological examination was not suggestive of intracranial haemorrhage or raised intracranial pressure. Her father was evaluated as donor and consent obtained. The donor and recipient operations were started simultaneously by two teams. The recipient developed anuria, pulmonary oedema, hypotension requiring high vasopressor support and desaturation despite FiO2 of100%. Continuous veno-venous haemofiltration (CVVH) was started and the donor liver was split with a view to harvest an extended right lobe graft. In four hours there was a significant improvement in recipient haemodynamics. Rapid recipient hepatectomy was performed without inferior vena caval clamping and an end-side portacaval shunt performed while the donor graft was perfused. Graft recipient weight ratio was 1.3. Post-operatively donor course was uneventful. The recipient had gradual recovery and became conscious on day 2, renal support was withdrawn. Graft function (AST, INR) normalized by day 5 thereafter course was uneventful except for positive CMV DNA requiring ganciclovir therapy and an episode of acute cellular rejection requiring pulse steroids. She was discharged on day 20.

Significance

In experienced centres, emergency living donor liver transplantation can be successfully performed for critically ill patients with fulminant hepatic failure with judicious use of organ support, rapid recipient hepatectomy with minimal IVC clamping, provision of an adequately sized graft with good outflow and multidisciplinary post-operative care.

Abstract# 135 Poster Board #-Session: P135-I

HEPATIC TRANSPLANTATION FOR FULMINANT HEPATIC FAILURE BY KETOCONAZOL. Pedro L. Trigo[1], Gabriel Aballay[1], Gustavo Braslavsky[1], Nora Cejas[1], Fernando Duek[1], Graciela Cueto, Carlos Quarin, Diana Rodriguez, Pablo Barros, Marcelo Amante, Alejandra Oks, Javier Lendoire, Oscar Imventarza. *[1]Liver Transplantation, Hospital Dr Cosme Argerich, Ciudad Autonoma de Buenos Aires, Buenos Aires, Argentina.*

INTRODUCTION: Ketoconazol has been associated to sudden hepatic failure. Literature describes few cases with fatal evolution. In the Argerich Hospital liver transplant unit, of 55 patients transplanted by FHF in 10 years, 1 case was related to this drug.

OBJECTIVE: Describe a case of sudden hepatic fault associated to consumption of Ketoconazol treated with hepatic transplantation.

PATIENT: female, of 42 years of age without previous pathological antecedents that onicomicosis, reason why began treatment with Ketoconazol in standard dose. 20 date after the beginning with this drug she developed ictericia, abdominal pain, nauseous and vomits, in spite of which she continued with the treatment. Abdominal ultrasound was made and show intra and extra hepatic biliary tree normal. Laboratory: AST 1050 U/L, ALT 1000 U/L, Total Bilirrubin 35mg/dl, Alcaline Phosphatase 805 U/L and a time of prothrombin of 50%, which falls to 25%. Fifty days after she developed alteration of the state of the conscience, with hepatic encephalopathy and

was admitted in our unit. The viral serology and the auto antibodies were negative. Later she presented homodynamic instability with requirement of inotropic and stupor, reason why it is placed in ARM.**OUTCOME:** She was listed in the emergency liver waiting list for hepatic transplant, being made transplant with deceased donor two days after.
She was discharged from hospital 19 days after the transplant.
CONCLUSSION: The Ketoconazol produces toxicity in 0.2% of the cases, it has seted out as mechanism the interference in the synthesis of sterols of the cellular membrane or the inhibition of enzymes in charge of the degradation of I hydrogenate peroxidase (ej: catalasa and citocromo c peroxidasa). So as it is described, the hepatica fault continued progressing in spite of the suspension of the drug. Even though the patient was in multi organic fault recovered successful with the hepatic transplant. Some authors recommend, by the high risk of hepatic insult of this drug, to restrict their use to the treatment of deep mycosis.

Rising Star Symposium

Abstract# 136

ROLE OF LIVER HISTOLOGY IN THE MANAGEMENT OF ACUTE LIVER FAILURE IN CHILDREN. Jonathan M. Hind[1], Alberto Quaglia[1], Rachel Taylor[1], Anil Dhawan[1]. *[1]Institute of Liver Studies, King's College Hospital, London, United Kingdom.*

Introduction and aim: The aetiology of acute liver failure (ALF) remains unknown in >40% of children. The role of liver biopsy to aid diagnosis and management is considered by many to be a high-risk procedure due to coagulopathy, leading to the transjugular approach in some centres. Our centre does not routinely perform liver biopsy in the management of ALF. The aim of the study was to evaluate the role of liver histology in the management of paediatric ALF.

Methods: Histology slides from 113 children (58 male, median age 5.15 years, range 0-17.4) with ALF (INR>2 unresponsive to vitamin K with abnormal liver enzymes) were examined by a single histopathologist who was blinded to clinical information. 53 samples were from biopsies (50 percutaneous, 2 open, 1 transjugular) taken during the course of ALF with blood product support, immediately after death, or at recovery. 60 samples were from explanted livers at transplantation. The histology findings were compared with the final clinical diagnosis.

Results: The median interval between admission and biopsy was 15 days (range 1-298), with 67% performed within 1 month. Histology did not contribute to diagnosis in 46/53 (87%). In 7 cases histology confirmed the suspected clinical diagnosis. In all of these cases the clinical diagnosis was made and correct management decided before biopsy was performed. In 3 cases histology findings were suggestive of chronic liver disease, possibly autoimmune hepatitis, but the clinical diagnosis was indeterminate. In 2 of these autoantibodies were negative, immunoglobulins normal, and they remain without treatment and with normal blood test results after 2 years follow-up. In the 3rd case the child died on day 1 of admission. In 7 cases histology performed median 32 (range 5-298) days from admission showed near normal liver.

In the explanted livers, histology did not contribute to diagnosis in 46/60 (77%). In 14 cases histology confirmed the suspected clinical diagnosis. In all of these cases the clinical diagnosis was made and any possible treatment instituted before transplantation.

Conclusion: The histopathology from liver biopsy in ALF in children in our experience did not add to management, and also explant liver histology did not further identify any diagnoses.

Abstract# 137

INTERLEUKIN 10 MEDIATES CYTOPROTECTION AGAINST LIVER ISCHEMIA/REPERFUSION INJURY BY SELECTIVELY SUPPRESSING ERK ACTIVATION. Yuan Zhai, Feng Gao, Ronald W. Busuttil, Jerzy W. Kupiec-Weglinski. *[1]Dumont-UCLA Transplant Ctr., David Geffen School of Medicine at UCLA, Los Angeles, CA, USA.*

Ischemia/reperfusion injury (IRI) in liver transplants develops in the absence of exogenous antigens, and innate immunity has been thought to play a dominant pathogenic role. We have shown that the activation of innate Toll-like receptor 4 (TLR4) and its IFN regulatory factor 3 (IRF3)-dependent signaling pathway are required for, and that CXCL10 (IP-10), a TLR4-IRF3 activation product, plays a key role in the development of liver IRI. **Aim:** To study the role of CXCL10 in the pathophysiology of liver IRI. **Methods** & **Results:** A mouse (C47/Bl6) model of liver warm ischemia (90 min) followed by 6 h of reperfusion was used. The induction of CXCL10 was rapid, ischemic lobe restricted, and specific without affecting the other two CXCR3 ligands (CXCL9/CXCL11). The CXCL10 signaling was critical for IR-induced liver inflammation and IRI. Indeed, unlike in WT, livers in CXCL10 KO mice were fully protected from IRI (decreased sALT levels/preservation of histological detail). Interestingly, IR-induced liver immune response in CXCL10 KO mice was not abolished, but rather altered from pro-inflammatory to immune regulatory type, as shown by reduced TNF, IL-1, IL-12, and IL-6, but normal IL-10 levels (qRT-PCR). This was accompanied by selective reduction of liver inflammation-associated MAP kinase Erk, but not JNK, activation (Western). To determine whether reduced pro-inflammatory response to IR in CXCL10 KO livers resulted from intrinsic defective innate immune function, LPS (directly stimulates TLR4 on Kupffer cells) was infused in WT and CXCL10 KO mice. Similar degree of LPS-induced pro-inflammatory, as well as immune regulatory, gene induction was observed in both animal groups (upregulated liver TNF, IL-6, IL-1 and IL-10 expression). Strikingly, neutralization of IL-10 in CXCL10 KO mice (JESS-2A5 mAb; 200 ug/mouse at the onset of reperfusion) fully restored intrahepatic Erk activation and liver pro-inflammatory response to IR, and recreated hepatocellular damage. **Conclusion:** The disruption of CXCL10 signaling protects livers against IRI by inducing IL-10-dominated immune regulatory response that selectively inhibits Erk activation. This study reveals a novel mechanism of cytoprotection, and provides the rationale for new strategies to ameliorate liver IRI by targeting CXCL10/Erk, with resultant downregulation of pro-inflammatory but sparing immune regulatory functions.

Abstract# 138

ACTIVATION OF THE TRANSCRIPTION FACTOR NRF-2 IN DONOR LIVER DURING ISCHEMIA REPERFUSION IS ASSOCIATED WITH LESS INFLAMMATORY DAMAGE AND LOWER TRASAMINASE LEVELS POST-TRANSPLANT. Muhammad B. Zaman[12], Elizabeth J. Ryan[2], Martin O. Leonard[4], Niamh P. Nolan[3], Donal Maguire[1], Hugh Mulcahy[1], Oscar Traynor[1], Cormac T. Taylor[4], John Hegarty[12], Justin G. Geoghegan[12], Cliona O'Farrelly[12]. *[1]National Liver Unit, St. Vincent's University Hospital, Dublin, Ireland; [2]Education and Research Center, St. Vincent's University Hospital, Dublin, Ireland; [3]Department of Pathology, St. Vincent's University Hospital, Dublin, Ireland; [4]Conway Institute of Bimolecular and Biomedical Research, University College Dublin, Dublin, Ireland.*

Introduction: Transcription factor Nrf-2, induces tissue repair mechanisms through transcriptional activation of phase II antioxidant pathways. We investigate its role in ischemia reperfusion (IR) injury during human liver transplantation (LT).

Methods: Seventeen paired liver biopsies (bxs) were acquired from donor livers prior to (start of retrieval operation) and following (end of transplantation operation) the IR phase of LT. Relevant donor and recipient data collected. We used Suzuki Scoring for histological grading of injury. Nrf-2 protein levels were measured using western blot. Glutathione & redox ratios (reduced [GSH] to oxidized [GSSG] glutathione ratio) were calculated using Glutathione assay kit. Sandwich ELISA was used to measure IL-8 levels. Data analyzed using SPSS statistical package.

Results: All reperfusion biopsies showed evidence of IR injury. High Suzuki scores (> 3, n=8) post-LT were associated with raised liver enzymes ($p<0.05$). GSH levels dropped following IR as did the GSH: GSSG. Median GSH in donor and reperfusion bxs was 146.88 µM/g (25.52-307.94) and 75.80 µM/g (7.18-180.15) respectively. This drop was associated with higher Suzuki score post-LT ($p<0.05$). Nrf-2 protein in the post-IR bxs was either unchanged (n=8) or decreased (n=9) as compared to pre-IR bxs. Low levels of Nrf-2 protein post-IR were associated with higher ALT and AST levels post-LT ($p=0.02$). IL-8 levels increased in post-IR bxs (median donor and reperfusion IL-8 = 23.03 pg/µg [13.55-53.97] & 59.08 pg/µg [26.37-47.57] respectively). IL-8 levels post-IR negatively correlated with Nrf-2 protein, i.e. higher Nrf-2, lower IL-8 and vice versa ($p<0.05$). Donor age, days in ICU, inotropic requirement, cold/warm ischemia time did not correlate with degree of IR damage in our cohort.

Conclusion: High Nrf-2 protein levels in donor liver post-IR are cytoprotective as they are associated with low IL-8, low Suzuki score and lower transaminase levels.

Abstract# 139

INSIGHTS OF THE MOLECULAR PATHWAYS INVOLVED IN HCV CIRRHOSIS: IS THERE A RELATIONSHIP WITH HCV RECURRENCE POST-LIVER TRANSPLANTATION?

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Background. Phenotypic changes in chronically HCV-injured livers and cirrhosis involve complex network of genes. We studied the molecular pathways involved in the response to chronic damage in HCV-cirrhotic tissues.

Patients and Methods. Cirrhotic liver tissues from 42 HCV-patients (Pts) undergoing liver transplantation (LT) were studied. Normal no-HCV liver tissues were used as control. Histological evaluation was performed using Knodell score and Ishak grade. Gene expression analysis was performed using high-density oligonucleotide microarray. The robust-multiarray average method was used to estimate probe set expression summaries (Pset). Average linkage hierarchical clustering was performed. The significance analysis of microarrays method was used to identify Pset differentially expressed while controlling for the false discovery rate (FDR). All Psets corresponding to an FDR of 0.1% were retained as differentially expressed. The microarray results were further confirmed using RT-qPCR.

Results. Pts median follow-up was 3.1 years. An unsupervised hierarchical cluster analysis (UHCA) from the HCV-cirrhotic tissues showed two different groups. Thirty-three percent of Pts with HCV recurrence (HCVrec) progress to histological fibrosis within 12 mo post-LT. From the UHCA we observed that the Pts clustered together in concordance with the development of fibrosis within 12 mo post-LT. The Gene Ontology. Terminology classified the differentially expressed genes between groups (fibrosis *vs.* non fibrosis within 12 mo post-LT) as related to immune response, inflammation, and cell growth. Interleukins and Interleukins receptors (IL1F6, IL17RC, IL7R) were up-regulated in HCV-cirrhotic tissues progressing to fibrosis within 12 mo post-LT while genes involved in the ubiquitin cycle were down-regulated (USP34, UBE2D3, UBE2A). Genes related to cell division (CCND2, CLK1, CDC42), growth factors (HGF, FRS3, IGFBP3, GDF2), and apoptosis (TRAF5, BNIP3L, BNIP2) were differentially expressed between groups.

Conclusions. Heterogeneity in gene expression patterns was observed within HCV-cirrhotic tissues. It might indicate different molecular pathways involved in the response to chronic HCV injury. Characteristic patterns of gene expression were observed in HCV-cirrhotic Pts with fast progression to fibrosis post-LT.

Abstract# 140

INTRAVENOUS IMMUNOGLOBULINS REDUCE ALLOGENEIC T-CELL ACTIVATION AFTER LIVER TRANSPLANTATION BY MODULATING THE INTERACTION BETWEEN DENDRITIC CELLS AND NK-CELLS.

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We have shown that intravenous immunoglobulins (IVIg) reduce the incidence of acute rejection after liver transplantation from 31% to 13% and suppress the allogeneic T-cell priming by dendritic cells (DC). Here, we investigated the mechanism by which IVIg prevent immuneactivation after liver transplantation.

Human DC, NK-cells and T-cells were isolated from blood of healthy individuals. DC were stimulated with TNFα/IL1β in absence or presence of IVIg. IVIg were then removed and allogeneic NK-cells were added. NK-cell phenotype and apoptosis of DC were determined by flowcytometry. T-cell priming capacity of DC was assessed by culturing DC with allogeneic T-cells with or without NK-cells using ^{3}H-thymidine incorporation and CFSE-dilution techniques. *Ex vivo* changes in peripheral blood leukocyte populations were monitored in 11 patients treated with IVIg.

DC matured in presence of IVIg (IVIg-DC) activated allogeneic NK-cells and increased their interferon-γ production, compared to control-DC. Subsequently, the activated NK-cells induced apoptosis of IVIg-DC, as shown by increased Caspase-3 expression and increased 7-AAD staining (IVIg-DC:33±9% 7-AAD positive, control-DC:17±8%, $p<0.01$). In presence of NK-cells, IVIg-DC were impaired in their allogeneic T-cell priming capacity by 81%±15 ($p<0.05$) compared to control-DC. This was due to NK-cell mediated Antibody Dependent Cytotoxicity (ADCC) to IVIg-DC, which can be abrogated by blockade of FcγRIII on NK-cells. This effect of IVIg could be mimicked by aggregates of a humanized monoclonal IgG, indicating that ADCC of DC is restricted to multimers in IVIg preparations. Furthermore, IVIg-DC promoted *in vitro* expansion of CD56^{bright} lymphnode type NK-cells, which correlated with a decrease in the numbers of circulating NK-cell after IVIg-treatment.

IVIg reduce the incidence of acute rejection after liver transplantation by promoting NK-cell mediated ADCC of DC, which subsequently reduce the allogeneic T-cell priming. By modulating the control switch of antigen-presentation, IVIg can prevent T-cell activation, and may therefore be a promising candidate for future non-toxic immunosuppressive regimen after liver transplantation.

Abstract# 141

DISTINCT GENE SIGNATURES LINKED TO ACUTE PHASE INJURY AND TUMOR INVASIVENESS IN TUMOR DEVELOPMENT AFTER LIVER TRANSPLANTATION USING SMALL-FOR-SIZE GRAFTS.

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Background

As living donors theoretically offer an unlimited supply of liver grafts, there is immense interest in the clinical efficacy of adult-to-adult living donor liver transplantation (LDLT). A liver graft from a live donor is almost always small-for-size for an adult recipient. We hypothesize that the early response to acute-phase injury and the subsequent regeneration of a small-for-size graft can potentially provide a favorable environment for tumor recurrence.

Objectives

We aim to study the gene expression profiles associated with acute phase graft injury and tumor invasiveness at early or late phase after liver transplantation using small-for-size grafts.

Materials and Methods

Orthotopic liver transplantation was applied using whole (100%) grafts (Group W) and small-for-size (50%) grafts (Group S) in a rat transplantation model. The recipients were injected with hepatoma cell lines (CRL1601, $2'10^{5}$) via the portal vein after reperfusion, and were sacrificed on days 1, 3, 14, and 21 after transplantation for histological examination. Gene signatures of acute graft injury (days 1, 3, 7) and tumor recurrence (days 14, 21) were screened using cDNA Microarray and confirmed by quantitative RT-PCR.

Results

Significant liver regeneration was present in Group S. This was associated with histological hallmarks of severe acute graft injury. Early development of liver tumors and significantly larger tumor sizes were also noted in Group S, accompanied by invasive growth patterns. Numbers of genes linked to inflammatory responses and tumor invasiveness were found to be over-expressed in small-for-size liver grafts and/or the tumor developed in small liver grafts by cDNA microarray screening. After confirmation by real-time RT PCR, the gene (Cdc2-a) leading to acute phase liver graft injury were found over-expressed in small-for-size liver grafts at day 1 after liver transplantation. At 3 weeks after transplantation, mRNA expression levels of Fosl-1, MAPK13 and MMP12 both in the tumor and non-tumor tissues were significantly higher in Group S. On the contrary, Spin-2b, a tumor suppressive gene, was presented with lower level in Group S.

Conclusion

Distinct gene signatures linked to acute phase injury and tumor invasiveness in the small-for-size liver graft may contribute to early tumor recurrence after liver transplantation.

Anesthesia Interactive Session I

Abstract# 142

HYPERCOAUGLATION, INTRACARDIAC THROMBOSIS, AND HEPARIN TREATMENT DURING ORTHOTOPIC LIVER TRANSPLANTATION: A CASE REPORT. Yoogoo Kang[1], Madhavi Pradhan[1], Cataldo Doria[2], Elia Elia[1], Carlo Ramirez[2]. *[1]Anesthesiology, Thomas Jefferson University, Philadelphia, PA, USA; [2]Surgery, Thomas Jefferson University, Philadelphia, PA, USA.*

Intracardiac thrombosis, not an uncommon complication of orthotopic liver transplantation (OLT), is associated with excessive activation of coagulation, particularly after reperfusion of the grafted liver.[1] In this report, a patient who developed hypercoagulation and intracardiac thrombosis, and was treated by heparin during OLT is presented, together with serial thromboelastography (TEG) and transesophageal echocardiography (TEE) .

Case Report: A 55-year-old male with liver cirrhosis (hepatitis C) and hepatoma underwent OLT. His MELD score was 25 with no extrahepatic organ dysfunction and normal preoperative TEE. Intraoperative care followed the standard guideline of the institution, including invasive monitoring, TEE, and TEG. Mild-moderate coagulopathy was seen on baseline TEG and coagulation profile (INR, 1.2; platelet, 58,000/mm^3; fibrinogen, 199 mg%). One hour into the uncomplicated surgery, hypercoagulation was seen on TEG (r, 2.6 min) with unchanged coagulation proifle, and persisted for the next one hour. During preparation for venovenous bypass, a strand of intracardic thrombus extending the whole length of the right ventricle was seen on TEE. The next TEG showed extreme coagulopathy associated with the heparin effect at the onset of the bypass. Coagulation improved in the next one hour, and heparin (3000 units) was administered to prevent further propagation of the thrombus. Coagulation was severly impaired on reperfusion owing to the heparin effect and reperfusion coagulopahty, and improved gradually in the next 45 minutes with a reactin time of 10.8 min. The intracardiac thrombus, which was present for 6 hours, was not detected during biliary reconstruction. The patient did not show any cardiopulmonary sign of pulmonary embolism, received 10 units of RBC, 18 units of FFP, and no platelets, and had uneventful postoperative recovery.

Conclusion: This report clearly illustrates the relationship between hypercoagulation and intracardiac thrombotic event, and suggests the need for serial monitoring of coagulability and intraoperative TEE, and the mode of prevention and treatment of intracardiac thrombosis.

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Abstract# 143

EARLY DIAGNOSIS OF LEFT-SIDED AIR EMBOLISM BY TRANSESOPHAGEAL ECHOCARDIOGRAPHY AND MANAGEMENT BY LUNG ISOLATION IN ORTHOTROPIC LIVER TRANSPLANTAION: A CASE REPORT. Elia S. Elia[1], Robin Mukerjee[1], Cataldo Doria[2], Yoogoo Kang[1]. *[1]Anesthesiology, Thomas Jefferson University Hopital, Philadelphia, USA; [2]Transplantation, USA.*

Transesophageal echocardiography(TEE) is considered the most sensitive tool to detect air in the heart. Left-sided air could be due to paradoxical air emboli (PAE) or broncho-pulmonary venous (BPV) fistula. TEE usually shows air in all heart chambers in PAE but only in the left-side of the heart in BPV fistula. In this case, the lung isolation[1] by bronchial blocker(BB) was used to stop air flow to the heart.

Case report: A 51 year old female with liver cirrhosis (hepatitis C) underwent orthotropic liver transplantation. Preop transthoracic echocardiogram revealed mild pulmonary hypertension and no intrapulmonary or cardiac shunt. Intraopertive care followed the standard guidelines of our institution. After inadvertent surgical injury to the right hemidiaphragm, a stream of air bubbles were noticed in the left-side of the heart without significant hemodynamic instability. Immediately, ventilation maneuvers were instituted to decrease BPV pressure gradient (Trendelberg position to increase venous pressure, pressure control ventilation to decrease airway pressure to 10 mmHg, and right lung isolation by BB) which stopped air inflow. The BB was deflated at the end of surgery, and no air bubble was detected in left-side of the heart. The patient remained hemodynamically stable intraoperatively and had uneventful postoperative recovery.

Significance: A small volume of air injected into the cerebral circulation (2 ml) can be fatal, and into the pulmonary vein (0.5-1 ml) can cause cardiac arrest from coronary air embolism and ischemia.[2,3] Early detection of air entry by TEE and lung isolation by BB prevented a potential catastrophic complication.

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Abstract# 144

ISOELECTRIC BIS™ RESPONSIVE TO PHOTIC STIMULATION DURING OLT FOR FULMINANT HEPATIC FAILURE. Roman Schumann[1], Jana Hudcova[1]. *[1]Department of Anesthesia, Tufts-New England Medical Center, Boston, MA, USA.*

Introduction: Low bispectral index (BIS™, Aspect medical systems, Newton, MA, USA) values occur with hypoglycemia, hypovolemic cardiac arrest, cerebral ischemia and hypothermic cardiopulmonary bypass (1). The impact of hyperacute (onset within 1 week) fulminant hepatic failure (FHF), acute renal failure (ARF) and its anesthetic management during orthotopic liver transplantation (OLT) on the BIS is undetermined. We report a unique observation of BIS values during rescue OLT for FHF.

Case: A 48 yo. previously healthy woman presented with sulfamethoxazole/trimethoprim induced FHF, oliguric ARF and hepatic encephalopathy for OLT. A BIS value of 25 appeared on arrival to the OR following BIS lead placement on her forehead under continued propofol (15 – 40 mcg•kg^{-1}min^{-1}) and midazolam (1 mg/h) sedation from the ICU. Subsequent general anesthesia (GA) consisted of isoflurane, 0.2 end-tidal vol % in air and O^2, a 2.5 – 5 mcg•kg^{-1}h^{-1} fentanyl infusion, pancuronium for neuromuscular blockade and scopolamine 0.2 mg. The BIS turned isoelectric after induction of GA, and remained at "0" throughout the surgery with the following exception. Light testing of the pupils resulted in a transient reproducible BIS elevation from zero to values between 14 and 17. Stimulation around the head (suction, ice packing) and a thiopental infusion of 400 mg/hr for brain protection did not alter the BIS baseline or photic response pattern. Blood glucose levels were between 108 – 200 mg/dl. The patient's neurologic status completely normalized prior to hospital discharge.

Discussion: BIS has been useful in the management of barbiturate coma (2), the diagnosis of early brain herniation and/or early onset of brain death (3). Few reports are available on BIS during OLT. Interpretation of an isoelectric BIS is challenging during OLT for FHF when brain edema and herniation are serious risks. Reproducible, transient "recovery" of the BIS by light stimulation of the retina has not been previously described, and its clinical significance is undetermined. However, earlier studies suggest preserved cerebral-cortical function when photic stimulation evokes EEG changes during burst suppression isoflurane anesthesia (4). Further study of the utility of BIS in complex clinical circumstances, including during liver transplantation is desirable.

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Basic Science

Abstract# 145

INSULINOPENIA AND INSULIN-RESISTANCE DELAY LIVER REGENERATION IN MICE. Olaf Guckelberger[1], M. D. Micheal[2], S. B. Biddinger[2], C. Schoebel[1], S. Reuter[1], P. Neuhaus[1], C. R. Kahn[2], S. C. Robson[3]. *[1]Dept. of General-, Visceral- and Transplantation-Surgery, Charité - Campus Virchow-Klinikum, Berlin, Germany; [2]Research Division, Joslin Diabetes Center, Harvard Medical School, Boston, MA, USA; [3]Dept. of Gastroenterology, Beth Israel Deaconess Medical Center, Harvard Medical School, Boston, MA, USA.*

Insulin and insulin-like growth factor I (IGF-I) have been identified as hepatic comitogens. However, the impact of diabetes mellitus or insulin-resistance on liver regeneration is yet unclear. Here we investigate the role of insulin depletion or resistance on liver regeneration in mice.

Methods: Streptozotocin (STZ) treated wildtype or liver cell-specific insulin receptor knockout (LIRKO) mice and respective controls underwent partial hepatectomy (PH). Values of liver-body-weight ratio (L/B) and bromodeoxyuridine (BrdU) incorporation into dividing cells were determined as measures of regeneration. Serum levels of interleukin 6 (IL-6), growth hormone (GH), and IGF-I were analyzed to detect involved pathways.
Results: STZ mice demonstrated equaled L/B ratios up to 96 h post-PH. At this time, however, significantly elevated numbers of hepatocytes (4.6±0.6%) and sinusoidal endothelial cells (sEC, 11.0±2.1%) stained positive for BrdU in STZ mice, while controls had already returned to baseline values (p=0.016 and p=0.006). In LIRKO mice, L/B ratios demonstrated a trend to incomplete regeneration at 84 h (0.025±0.002 vs. 0.028±0.001 at 0 h, p=0.089), while controls had reached initial values. Correspondingly, delayed kinetics of hepatocyte proliferation resulted in increased numbers of BrdU-positive hepatocytes at 84 h in LIRKO mice compared to controls (13.3±3.5% vs. 2.6±0.2%, p=0.027). Values of BrdU-positive sEC did not differ. Serum concentrations of IL-6 and GH demonstrated comparable values in STZ or LIRKO mice and respective controls. There were also no differences in STZ and control mice in IGF-I serum levels (48 h: 3349±548ng/ml vs. 3725±58ng/ml), while levels of IGF-I during liver regeneration were significantly decreased in LIRKO mice compared to controls (48 h: 580±136ng/ml vs. 4209±128ng/ml, p<0.001).
Conclusions: Insulin depletion is associated with substantial delays in hepatocyte and sEC proliferation without significant impact on L/B-ratio or IGF-I serum levels, whereas the complete lack of insulin receptor signaling delays liver cell proliferation by an IGF-I dependent mechanism, but does not influence sEC proliferation.

Abstract# 146

EXPANSION OF HEPATIC PROGENITOR CELL IN FATTY LIVER GRAFT AFTER LIVING DONOR LIVER TRANSPLANTATION.

Jai Young Cho[1], Kyung-Suk Suh[1], Hae Won Lee[1], Eung-Ho Cho[1], Nam-Joon Yi[1], Min A. Kim[2], Ja-June Jang[2], Kuhn Uk Lee[1]. *[1]Department of Surgery, Seoul National University College of Medicine, Seoul, Republic of Korea; [2]Department of Pathology, Seoul National University College of Medicine, Seoul, Republic of Korea.*

It is known that steatotic livers have a reduced ability to regenerate after a partial hepatectomy (PH). Although some individuals with steatosis develop cirrhosis, most do not, and the fatty liver persists for years. One possible explanation for the generally benign prognosis of fatty liver disease is that most individuals can compensate for the liver damage that accompanies the hepatic steatosis. We hypothesized that a proliferative blockade in steatotic hepatocytes results in the default activation of hepatic progenitor cells (HPCs), which are capable of differentiating into both biliary and hepatocyte lineages. Between September 2002 to August 2004, 67 cases of living donor liver transplantation (LDLT) with a liver biopsy performed at the postoperative 10th day were examined. The patients were grouped according to the intraoperative histological degree of macrovesicular steatosis (MaS) as follows: MaS- (< 5% of MaS; n = 30), and MaS+ (5 - 30% of MaS; n = 37). HPC was counted by immunofluorescence histochemical dual-staining technique using cytokeratin 7 and Ki-67, and the replicative arrest of hepatocytes was assessed by p21 immunohistochemistry. The degree of MaS correlated with both the grade of histological cholestasis ($P < 0.001$) and the degree of ductular proliferation ($P < 0.001$) after LDLT. The preoperative degree of MaS in grafts and recipient's Model for End-Stage Liver Disease score were found to be independent risk factors for developing histological cholestasis after LDLT ($P < 0.001$ and 0.024, respectively). Moreover, the degree of ductular proliferation was associated with the grade of histological cholestasis after LDLT ($r = 0.537$; $P < 0.001$). Degree of MaS correlated with both the expansion of HPC and the replicative arrest index during liver regeneration after PH ($P < 0.001$ and $P < 0.001$, respectively). Moreover, increased replicative arrest was strongly associated with HPC expansion ($r = 0.834$; $P < 0.001$). In conclusion, the increased expansion of HPC combined with impaired hepatocyte replication occurred during steatotic liver regeneration after LDLT.

Abstract# 147

HEPARANASE AND hVEGF$_{165}$ INCREASE INTRAVASCULAR SURVIVAL OF TRANSPLANTED HEPATOCYTES AND ENDOTHELIAL CELL PROLIFERATION, IN RATS AFTER PARTIAL HEPATECTOMY.

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Low engraftment rate, of hard to get adult hepatocytes, is one of the major obstacles for wide use of cell transplantation as a treatment modality. Heparanase by degradating heparan sulfate proteoglycans has multifunctional effect on cell invasion and angiogenesis. VEGF, promotes hepatocyte growth, vascular permeability and vasodilatation, and may thus accelerate cell engraftment
Aim: The effect of heparanase and hVEGF$_{165}$, on hepatocyte engraftment after intrasplenic cell transplantation in partially hepatectomized (PHP) rats.
Methods: Female Lewis rats were subjected to 70% PHP and transplanted with male hepatocytes (10^7 cells/rat), pre-incubated with heparanase (50 µl, n=12), or 240ng VEGF$_{165}$ or saline as control. Engraftment efficiency was evaluated up to 14 days by a semi-quantitative PCR analysis of the SRY region on Y-chromosome and endothelial cells proliferation by PCNA immunohistochemistry. Post transplant intravascular hepatocytes were studied by immunostaining to Hepar-1, VW-factor, Fibronectin, and SMA.
Results: The number of portal radicles filled with hepatocytes in heparanase and VEGF treated rats was higher than in control rats ($p<0.05$). The transplanted treated hepatocytes appeared in clusters without signs of damage. Hepar-1 immunostaining shows normal staining of these hepatocytes up to 72 hours post transplantation. The number of transplanted cells detected in the liver was significantly higher ($p<0.05$) in treated animals vs. controls at 24 and 48 hrs. By 14 days the number of engrafted cells was similar to the control group. Already by 24 hrs after transplantation the proliferating index of SEC increased over controls ($P<0.02$). SMA immunostaining at the site of cell adhesion was non continuous.
Conclusions: Heparanase and hVEGF$_{165}$ increase long-term presence of transplanted cells within portal radicles, thereby facilitating their engraftment. Hepatocytes can survive in the portal vessels longer than was expected and it seems that the portal radicle is the main site for cell engraftment, explaining the relative low yield of intravascular cell transplantation.

Abstract# 148

THE SIGNIFICANCE OF HEPATIC STELLATE CELL ACTIVATON ON SMALL-FOR-SIZE FATTY LIVER GRAFT INJURY.

Qiao Cheng[1], Kwan Man[1], Kevin T. P. Ng[1], Chung-Mau Lo[1], Ronnie T. P. Poon[1], Sheung-Tat Fan[1]. *[1]Department of Surgery, The University of Hong Kong, Hong Kong, China.*

Background and objective
The impact of hepatic stellate cell activation on liver graft injury at early phase after liver transplantation using marginal liver grafts have not been well studied. In the current study, we aim to investigate the significance of hepatic stellate cell activation in small-for-size liver graft injury and the underlying precise molecular mechanisms in a rat liver transplantation model using fatty grafts and cirrhotic recipients.
Materials and Methods
Male SD rats were used to establish the animal models. Fatty liver was induced by higher-fat diet. Cirrhotic liver was induced by subcutaneous injection of 50% carbon tetrachloride. A rat model of non-arterialized orthotopic liver transplantation without veno-venous by-pass using fatty liver grafts (40% of fatty changes) and cirrhotic recipients will be used. Lobe ligation technique was used to reduce the graft size on the back table. The median ratio of the graft weight to the recipient liver weight (graft weight ratio) was around 60%. Liver tissues and blood were sampled at 2, 4, 7, and 14 days after reperfusion for detection of hepatic stellate cell activation, intragraft gene expression, morphological examination including electron microscopy, and liver function tests.
Results
Significant activation of hepatic stellate cells was mainly found in small-for-size fatty grafts during the first 2 weeks after liver transplantation. The activation of HSCs was well correlated with progressive hepatic sinusoidal damage, together with the poor liver function. Gene expression profiles of the cell signaling pathways leading to acute phase inflammatory responses

and angiogenesis were more over-expressed in small-for-size fatty grafts than those of whole grafts at different time points detected by real-time RT PCR. Hepatic ultrastructure of small-for size fatty liver graft was demonstrated with sinusoidal disruption, cytoplasm degeneration and mitochondrial swelling in hepatocytes, and collapse of Disse space with electron microscopy.

Conclusions

Significant activation of hepatic stellate cell plays important roles in small-for-size fatty liver graft injury. The findings of this study on hepatic stellate cell activation may lay the foundation for the prophylactic treatment for patients with severe cirrhosis using fatty liver grafts.

Abstract# 149

HYDROXYETHYL STARCH-BASED PRESERVATION SOLUTIONS ENHANCE GENE THERAPY VECTOR DELIVERY UNDER HYPOTHERMIC CONDITIONS.

Scot D. Henry[1], Herold J. Metselaar[2], Pascal G. van der Wegen[3], Bob J. Scholte[3], Henri G. D. Leuvenink[4], Rutger J. Ploeg[4], Hugo W. Tilanus[1], Luc J. W. van der Laan[1]. *[1]Surgery; [2]Gastroenterology & Hepatology; [3]Cell Biology, Erasmus MC-University Medical Center, Rotterdam; [4]Surgery, University Medical Center Groningen, The Netherlands.*

Background: Isolated perfusion of the liver, represents a unique opportunity for safe and effective targeting of gene therapies directed against liver diseases. In the current study we examined different solutions used for graft preservation and determined their usefulness for lentiviral based gene therapy delivery under hypothermic conditions.

Methods: Huh-7 hepatoma cells were suffused in preservation solutions; University of Wisconsin (UW), Histadine Tryptophan Ketoglutarate (HTK), EloHaes (EH), or IGL-1 (Na-PEG UW), containing GFP lentivectors at a multiplicity of infection of 0.5, at 4°C or 37°C and incubated for increasing time points. Transduction efficiency was determined by flowcytometry.

Results: GFP positive cells could be observed after vector exposure times as short as 10 minutes under hypothermic conditions (UW; 24±3, HTK; 13±1, EH 25±7). After 2 hr incubation, transductions increased across all solutions in the hypothermic (UW; 36±3, HTK; 18±4, EH 32±19) as well as normothermic setting (UW; 62±6, HTK; 21±7, EH 48±8). To determine why the best transductions were achieved with UW, different components of UW were supplemented to HTK. Neither adenosine nor glutathione provided any increase to HTK's transduction potential, while inclusion of hydroxyethyl starch (HES) significantly improved the percentage of GFP positive cells (UW; 46±4, HTK; 20±4; 4% HES; 32±4 ($p<0.01$), 6% HES 41±5 ($p< 0.05$)). To rule out size exclusion (limited free liquid) as a possible mechanism of improved transduction, the size exclusion agent polyethylene glycol (PEG) was tested via IGL-1 solution. When compared to HTK, IGL-1 solution (27±3 % GFP positivity) was slightly, but not significantly, better, however transduction remained inferior to UW.

Conclusions: This study demonstrates effective lentiviral delivery to hepatocytes using UW solution under hypothermic conditions. Starch-based solutions, UW and EH, provide superior transductions over non-starch solutions (HTK and IGL-1) with as little as 10 minutes vector exposure. This demonstrates the feasibility of lentiviral gene delivery during cold storage of liver grafts which could have future clinical implications for gene therapy.

Abstract# 150

COMPLETE DEARTERIALIZATION OF THE LIVER CAUSES INTRAHEPATIC CHOLESTASIS DUE TO REDUCED HEPATOBILIARY TRANSPORTER EXPRESSION.

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Background Hepatic artery thrombosis early after liver transplantation leads to intrahepatic cholestasis and bile duct injury. It is not known to which degree cholestasis is a result of bile duct obstruction or also caused by the reduced expression of hepatobiliary transporters. We aimed to define the involvement of bile secretory function in the pathogenesis of graft failure after the loss of arterial blood supply.

Methods We developed a murine model of hepatic arterial deprivation. Either the main hepatic artery, the extrahepatic peribiliary plexus or both arterial connections to the liver were interrupted (n=5 for each group). At 1, 14 or 28 days after the procedure, hepatobiliary function was assessed by analysis of bile composition, serum bile acids and bilirubin, and protein and mRNA expression of the most relevant hepatobiliary transporters. The degree of hepatobiliary injury and intrahepatic cholestasis was assessed by light microscopy, biochemical serum markers, and hepatic ATP-levels.

Results There were no signs of hepatobiliary injury or dysfunction in sham operated animals or in mice with interruption of the hepatic artery or the extrahepatic peribiliary plexus alone. However, mice with complete dearterialization of the liver had significantly reduced expression of hepatobiliary transporters as early as 24 hours after the procedure and developed progressive cholestasis. In parallel with this, histological studies at 4 weeks after the procedure showed severe hepatocellular and biliary damage, as well as bile duct proliferation and periportal fibrosis in mice with simultaneous interruption of both the hepatic artery and the peribiliary plexus, but not in the other groups.

Conclusion This study indicates that arterial blood supply to the liver is critical for a normal bile secretory function. Complete deprivation of arterial blood flow to the liver results in a rapid reduction of bile transporter expression and function, promoting intrahepatic cholestasis and bile duct injury.

Abstract# 151

PROTECTION BY HYPOTHERMIA AGAINST HEPATIC ISCHEMIA/REPERFUSION INJURY IS ASSOCIATED WITH UPREGULATION OF HEAT SHOCK PROTEINS HSP32 AND HSP70.

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Background: Hepatic ischemia/ reperfusion (I/R) results in an inflammatory response that appears to be the major responsible mechanism of subsequent organ damage. Hypothermia is known to ameliorate this inflammatory response and subsequent organ damage. The identification of the pro- and anti-inflammatory pathways are altered by hypothermia have not yet been addressed.

Methods: 10 lean Zucker rats underwent partial (70%) hepatic ischemia for 75 min and subsequent hepatectomy of the non ischemic lobes at either 34°C (hypothermia, n=5) or 37°C (normothermia, n=5) body temperature. Animals were sacrificed after 4 hrs of reperfusion and blood and liver samples were collected. Liver damage was assessed by histology and transaminase concentrations. The inflammatory pathways were investigated by RT-PCR (TNFa, IL-6, MCP-1, MIP-2) and Western Blot (TNFa, MIP-2, HSP32, HSP70).

Results: Moderate hypothermia reduced morphological damage as well as transaminase concentrations (AST: 6041±659 vs. 15280±2456 U/L, ALT: 3272±506 vs. 8963±1720 U/L, $p=0.01$ and $p=0.02$, respectively) when compared to normothermia. The reduction in liver injury in hypothermic animals was associated with reduced activation of TNFa and MIP-2 at 4 hrs of reperfusion as assessed by RT-PCR and Western Blot. Tissue concentrations of HSP32 and HSP70 were increased 3.1fold and 3.3fold respectively in the hypothermic group when compared to the normothermic group after 4hrs of reperfusion.

Discussion: Moderate hypothermia of 34°C reduces liver injury and the inflammatory response following hepatic I/R. This protective effect is associated with upregulation of HSP32 and HSP70 which are known to have cytoprotective properties in various models of I/R. Subsequent studies now have to prove whether activation of HSPs is the mechanism responsible for the protective effects of moderate hypothermia in hepatic I/R.

Abstract# 152

DENDRITIC CELLS IN HEPATIC LYMPH NODES ARE EXHAUSTED AND HAVE A POOR ALLOGENEIC T-CELL STIMULATORY CAPACITY. Brenda M. Bosma[1], Patrick P. C. Boor[1], Hugo W. Tilanus[2], Khe T. C. Tran[2], Jan N. M. IJzermans[2], Ernst J. Kuipers[1], Herold J. Metselaar[1], Jaap Kwekkeboom[1]. *[1]Gastroenterology and Hepatology, ErasmusMC-University Medical Center, Rotterdam, Netherlands; [2]Surgery, ErasmusMC-University Medical Center, Rotterdam, Netherlands.*

Introduction. The liver is an immune-privileged organ, in which immune responses against food antigens and components of the commensal gut flora are tightly regulated. We investigated whether an alternative maturation program of hepatic dendritic cells (DC) leads to tolerogenic effector DC. As the draining lymph node (LN) is the main site where DC regulate T-cell responses, we compared maturation-related characteristics of DC from hepatic LN with DC from skin/muscle draining LN.

Materials & Methods. Hepatic LN (n=15) were obtained from multi-organ donors (MOD). Skin/muscle draining LN were obtained from kidney transplant recipients (inguinal LN, n=8) or from multi-organ donors (iliacal LN, n=7). $CD1c^+$ DC were immunophenotyped by flow cytometry, or isolated by positive immunomagnetic selection, and tested for their capacity to stimulate allogeneic T-cell proliferation and produce cytokines.

Results. DC from hepatic LN proved to be mature DC, with significantly higher expressions of the co-stimulatory molecules CD40 ($p<0.001$), CD80 ($p<0.001$) and CD86 ($p=0.021$) as compared to DC from skin/muscle draining LN. Despite the enhanced expression of these molecules, DC from hepatic LN had a twofold reduced capacity to stimulate allogeneic T-cell proliferation compared to DC from inguinal LN ($p<0.05$). The reduced T-cell stimulatory capacity of DC from hepatic LN may be related to their inability to produce cytokines: Upon stimulation with poly (I:C) and IFNγ hepatic LN DC produced almost no cytokines compared to inguinal LN DC: IL-10 (0.02±0.02 versus 2.4±1.4 ng/ml), IL-12 (0.005±0.005 versus 0.08±0.05 ng/ml), TNFa (0.57±0.27 versus 7.9±2.2 ng/ml) and IL-6 (0.14±0.04 versus 2.8±0.9 ng/ml). Similar differences in cytokine production were observed after stimulation with *Staphyloccocus aureus*.

Conclusion. Hepatic DC mature in vivo into a type of effector DC that have a high expression of co-stimulatory molecules, but produce almost no cytokines and have a poor allogeneic T-cell stimulatory capacity. We postulate that DC in the liver environment undergo hyper-maturation, due to continuous stimulation with gut-derived components, resulting in exhausted DC in hepatic lymph nodes.

Abstract# 153

RAPAMYCIN INCREASES THE T CELL STIMULATORY CAPACITY OF PLASMACYTOID DENDRITIC CELLS. Patrick P. C. Boor[1], Herold J. Metselaar[1], Jaap Kwekkeboom[1]. *[1]Gastroenterology and Hepatology, ErasmusMC-University Medical Center, Rotterdam, Netherlands.*

Background: Evidence is accumulating that plasmacytoid dendritic cells (PDC) are involved in tolerance induction after organ transplantation. MTor inhibitors are progressively more included in immunosuppressive protocols after liver transplantation. The aim of this study was to establish the effects of Rapamycin (RAPA) on the T-cell stimulatory capacity of PDC.

Methods: PDC were purified from blood of healthy individuals by immunomagnetic selection with anti-BDCA4 antibody, and stimulated with either Toll-Like Receptor (TLR)-7 agonist loxoribine (LOX) or TLR-9 agonist CpG ODN2336, in the presence or absence of 20 ng/ml RAPA. After 20 hours PDC were extensively washed and allogeneic T cells were added. T cell activation was determined by analysis of CD25-expression, proliferation by [3H]thymidine incorporation and cytokine production by ELISA. The up-regulation of CD80 and OX40L on stimulated PDC was determined by flowcytometry.

Results: The presence of RAPA during stimulation of PDC with either CPG or LOX increased their ability to stimulate allogeneic T cell proliferation by 49±18% (n=7; p=0.028) and 35±10% (p=0.030), respectively. In addition, RAPA-treatment of LOX-stimulated PDC enhanced the expression of the activation marker CD25 on T-helper cells by 50±13% (p=0.003) and on cytotoxic T-cells by 24±3% (p=0.002). RAPA-treatment of LOX-stimulated PDC induced T-cells to produce more IFN-γ (2578±887pg/ml versus 4840±886pg/ml; p=0.013) and less IL-10 (904±369pg/ml versus 205±84pg/ml; p=0.024). Similar differences were observed when PDC were stimulated with CpG. To investigate the mechanism of action of the enhanced T-cell stimulatory capacity of RAPA-treated PDC, the expression of co-stimulatory molecules on PDC was determined. RAPA enhanced the up-regulation of CD80 and OX40-ligand on PDC by 86±24% and 232±25% after CpG stimulation (n=6; p<0.031), and by 49±6% and 119±60% after LOX-stimulation (p<0.031), respectively.

Conclusion: In vitro, rapamycin augments the allogeneic T-cell stimulatory capacity of TLR-stimulated PDC, probably by increasing the expression of the co-stimulatory molecules CD80 and OX40L. The stimulated T cells produced more IFN-γ and less IL-10, indicating mTor inhibitors are not beneficial for the tolerogenic properties of PDC.

Living Donor Liver Transplantation

Abstract# 154

A DECADE OF RIGHT LIVER ADULT-TO-ADULT LIVE DONOR LIVER TRANSPLANTATION: MID-TERM OUTCOMES. See Ching Chan[1], Barbara Chik[1], Chi Leung Liu[1], Chung Mau Lo[1], Sheung Tat Fan[1]. *[1]Hepato Biliary Pancreatic Surgery, Dep. of Surgery, University of Hong Kong Medical Center, Hong Kong, Hong Kong.*

Introduction

Right liver adult-to-adult live donor liver transplantation debuted a decade ago is now due for mid-term outcomes appraisal.

Patients and methods

Consecutive liver transplant cases with a minimum follow-up of 2 years in Queen Mary Hospital, the University of Hong Kong from May 1996 to December 2004 were included (N=188). The data including recipient and graft characteristics were collected prospectively and were analyzed retrospectively. From 1996 to 2000, fewer than 30 cases per year were determined early era.

Results

This series had a median followup of 48 months. The early era included 28 cases and the latter era 160 cases. Recipients of the early era were slightly younger (42 yr vs. 48 yr, p = 0.002) and fewer of them suffered from hepatocellular carcinoma (HCC) (10.7% vs. 29.4%, p = 0.039). Disease severity was worse as reflected by a higher proportion of recipients with hepatorenal syndrome (35.7% vs. 16.3%, p = 0.016), and higher Model of End-stage Liver Disease scores (34 vs. 26, p = 0.007). Graft characteristics were similar. The recipients of the early era had higher hospital mortalities (6/28 vs. 4/160, p = 0.001). Transplantation in the high urgency situation did not result in higher hospital mortality (5/91 vs. 5/97, p = 0.917). None of the recipients transplanted for HCC had hospital mortality (0/50 vs. 10/138, p = 0.065). On univariate analysis, the presence of HCC and transplantation in the early era were of adverse factors for survival. This was verified by a multivariate analysis which indicated that early era (RR = 2.824, p = 0.015) and HCC (RR = 2.897, p = 0.005) were factors adversely affecting overall survival.

The 1-, 3-, and 5-year overall survivals were 92.5%, 86.3%, and 82.3%, respectively. When recipients with hospital mortality and transplanted for HCC were excluded, the 1-, 3-, and 5-year overall survivals became 97.6%, 95.3%, and 95.3%, respectively. Recipients with HCC (n = 50) and only those who were within the Milan criteria (n = 34) had 1-, 3-, and 5-year survivals of 98.0%, 80.5%, and 63.4%; and 97.1%, 85.0%, and, 67.6%, respectively.

Conclusion

This operation resulted in predictably high 5-year survival in particular when hospital mortality could be avoided after maturation of techniques and careful case selection of recipients with a low chance of recurrence from HCC.

Abstract# 155

ADULT TO ADULT LIVING DONOR LIVER TRANSPLANTATION: IS A GRAFT/BODY WEIGHT RATIO LESS THAN 0.8 SAFE? A. S. Soin[1], R. Kakodkar[1], S. Saigal[1], S. Nundy[1]. *[1]Department of Liver Transplantation, Sir Ganga Ram Hospital, New Delhi, India.*

Background: Majority of centres performing adult to adult live donor liver transplantation (AALDLT) ensure graft to recipient weight ratio (GRWR) of 0.8 or more since lesser liver volumes are considered inadequate for the metabolic demands of recipients. However, there are some reports of successful transplants with lower ratios in patients with low MELD scores.

Aim: To assess whether a GRWR of <0.8 can be safely used in recipients of AALDLT.

Methods: The last 87 (66 males, 21 females) consecutive AALDLTs performed from July 2004 to November 2006 constituted the study group. Sixty-eight right lobe and 19 left lobe transplants were performed. Graft weight was measured on the bench after perfusion with HTK solution.

Although the policy was to ensure a GRWR of at least 0.8, 10 patients (5 left lobes, 4 right lobes with middle hepatic vein, 1 right lobe without middle hepatic vein with 4 reconstructed outflow veins) had GRWR of less than 0.8 (0.56-0.78, mean 0.66) due to the following reasons: favourable preoperative status of the recipients (Child's B, n=6), lack of an alternative donor (2) and inaccurate preoperative CT volumetry (2).
The outcome of patients with GRWR ratios lower than 0.8 (Group A) was compared with that of 77 patients with GRWR ratios of 0.8 or more (Group B). The primary outcome measure was recipient operative mortality (death within the same hospital admission as the transplant), and secondary outcomes were bilirubin, PT (INR) and AST on days 1, 3 and 7 after AALDLT, and hospital stay.
Results: Using paired-samples t test, there was no significant difference between the two groups in mean hospital stay (21 vs 22 days, p=0.7); and bilirubin and AST on day 1, 3 and 7 (see table). However, PT (INR) on day 1 was significantly higher in group A (p=0.007), but the difference became insignificant by postoperative day 3 (p=0.86). There was no operative mortality in group A, though group B had a mortality of 9% (7 out of 77).
Conclusion: For selected recipients of AALDLT, with meticulous surgery ensuring good venous outflow, and good postoperative care, a GRWR <0.8 does not have an adverse impact on early results and operative mortality.

Abstract# 156

WORLD UPDATE ON LIVING LIVER DONOR MORTALITY.

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Living donation has become a valuable resource of liver grafts when deceased donor organs are not available, and this option is being increasingly offered in transplant programs throughout the world. One major concern has always been the risk for the donor. Despite 4 independent reviews published in 2006, there is no accurate information on the number of donor deaths.
We reviewed the medical literature since 1989 - from anecdotal reports to sophisticated surveys, to update the worldwide living liver donor mortality rate. Our goal was to also assess the accuracy of the information, assigning a certainty (C) level to each source identified which was defined as follows: C1, direct report by a member representing the transplant center where the fatality occurred; C2, indirect publication by an author not involved in the care; and C3, information based on verbal presentation or personal communication.
We found 11 cases classified as C1: donor deaths and centers were identified, and details of the complications were published in single case reports. In the C2 group there were 10 fatalities, and only six centers were documented by other authors. Nine donor deaths were mentioned, however, their certainty level was C1. Seven donor deaths had occurred in Europe, eight in North America, four in South America, eight in Asia, and one in Africa. Two additional donors were included: one was rescued with a liver transplant, and the other remained in a vegetative state. Based on an estimate of over 10,000 living donor liver transplants performed worldwide, the donor death rate is 0.1-0.3%. Only C1 donor deaths allowed to identify specific risk factors: preoperative medical conditions - especially liver problems, known psychosocial behavioural abnormalities - including smoking and drugs, right lobe donation, and postoperative surgical complications.
In order to maintain truly informed consent and public confidence in this procedure, it is imperative to report all deaths of living donors. Unfortunately, the discrepancy between published and unpublished living liver donor mortality has not changed, and the dilemma of rumors versus facts is prevailing. The only way to get accurate information is direct reporting by the transplant program where the fatality occurred This survey should encourage all surgeons performing living donor liver transplantation to disclose their own fatalities.

Abstract# 157

MANAGEMENT OF RECIPIENTS WITH PORTAL VEIN THROMBOSIS IN LIVE DONOR LIVER TRANSPLANTATION: EXPERIENCE FROM ONE CENTER.

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Preexisting recipient portal vein thrombosis or hypoplasia(PVT) increase the surgical complexity in living donor liver transplantation (LDLT). A higher complication rate has also been reported in these patients following deceased donor liver transplantation. Literature regarding outcomes following LDLT in these patients is scant.
We analyzed preoperative diagnosis, operative techniques and post operative course in recipients with pre-existing PVT undergoing LDLT.
Twelve (12.12 %) out of the 103 recipients between January 2002 and November 2006 had preexisting PVT at transplantation. Nine patients presented with ascites, one patient with jaundice and two children with failure to thrive. 11/12 were diagnosed preoperatively by colour Doppler ultrasound and contrast enhanced CT. PVT was Yerdel's Grade 1 in 6 cases, Grade 2 in 5 and Grade 3 in one. The thrombus was located in main portal vein in 4, and was extending into superior mesenteric vein in 8. The thrombus was removed by thrombectomy, incision or eversion technique. Native portal vein was reconstructed after removal or exclusion of the thrombus by end to end anastomosis to donor portal vein without the use of interposition graft or cavoportal hemtransposition. Preexisting PVT increased the cold ischemia time but had no impact on operative blood loss or hospital mortality. All patients are alive at a mean follow up of 13 months (1-32 months). One patient developed partial thrombosis which responded to conservative management. Another patient presented with ascites secondary to anastomotic stricture 9 months post transplant which was managed successfully by transhepatic balloon angioplasty.
LDLT can be performed even in recipients with preexisting PVT with low operative morbidity and re-thrombosis rates.

Abstract# 158

EVALUATION OF LIVER REGENERATION AND FUNCTION OF DONORS AFTER LIVING DONOR LIVER TRANSPLANTATION.

Hiroyuki Furukawa[1], Tsuyoshi Shimamura[2], Tomomi Suzuki[1], Masahiko Taniguchi[3], Kenichiro Yamashita[3], Minoru Ohta[3], Toshiya Kamiyama[3], Michiaki Mastushita[3], Satotu Todo[3]. *[1]Department of Organ Transplantationand Regenerative Medicine, Hokkaido University School of Medicine, Sapporo, Hokkaido, Japan; [2]Division of Organ Transplantation, Hokkaido University Hospital, Sapporo, Hokkaido, Japan; [3]Department of General Surgery, Hokkaido University School of Medicine, Sapporo, Hokkaido, Japan.*

Introduction: The unique ability of the liver to regenerate quickly after resection makes living donor liver transplantation (LDLT) possible. This regeneration process and functional recovery in humans are still widely unexplored. **Materials and methods:** From March 2000 to September 2006, 125 living donors underwent hepatectomy for LDLT in our center. Of 125, 89 donors were involved in the study. Volumetry was obtained at 1, 2, 4, 12 weeks after hepatectomy using 3D software from CT scan. Technetium-99m-DTPA-garactosyl-human serum albumin liver scintigraphy was used to determine the liver function at 1, 2, 4, 12 weeks after hepatectomy. HH15 (=count for the heart at 15 minutes/ count for the heart at 3 minutes) and LHL 15 (=count for the liver at 15 min/ sum of the count for heart and liver at 15 minutes) were calculated as parameters. The groups were classified under the remnant liver volume and donor age, and the influence was studied. **Results:** When the remnant liver volume was less than 40% of the original liver, the regeneration ratios for the remnant liver volume were 148%,164%, 176%, and 202%, HH15 values were 0.548, 0.588, 0.587, 0.526, and LHL15 values were 0.951, 0.947, 0.943, 0.956, at 1, 2, 4, and 12 weeks after hepatectomy. When the remnant liver volume was equal to or more than 40%, regeneration ratios were 116%,118%, 117%, and 137%, HH15 values were 0.438, 0.484, 0.500, 0.508, and LHL15 values were 0.947, 0.940, 0.940, 0.933, at 1, 2, 4, and 12 weeks after hepatectomy. Statistical differences were found in the regeneration ratios at all 4 points (P<0.0001), in HH15 at 1 (P<0.0001), 2 (P<0.0001), and 4 weeks (p=0.0002), and in LHL15 at 12 weeks (p=0.001). No statistical differences were found in the regeneration ratios, HH15 and LHL 15 between old and young donors. **Conclusion:** In the early period after donor hepatectomy in LDLT, regardless of donor age, the smaller is the remnant liver, the higher is the regeneration ratio and the liver function is the more impaired. Thus, careful management for donors is crucial in the early postoperative period.

Abstract# 159

LIVING DONOR LIVER TRANSPLANTATION FOR PATIENTS WITH CIRRHOSIS AND RENAL DYSFUNCTION.

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Introduction:

Pre-transplant renal dysfunction has been associated with poor outcome after liver transplantation.

Aim

To compare the outcome of adult patients with and without renal dysfunction undergoing living donor liver transplantation (LDLT).

Methods

89 adult - adult LDLT were performed from Jan 2002- Nov 2006. Nine patients (all males, mean age 51.6 ± 7.2 years) had renal dysfunction (Group I). Six patients had hepatorenal syndrome (HRS) (4 type II and 2 type I) before LDLT and none had received dialysis or had diagnosed renal disease prior to decompensation of liver disease. The remaining 80 patients formed group II. Surgical technique was modified to avoid veno-venous bypass, minimise inferior vena caval clamping time and optimise outflow of the graft. Nephrotoxic drugs including calcineurin blockers were witheld until haemodynamic stability was achieved and urine output was adequate. The outcomes compared between the two groups (Group I and II) were hospital mortality, hospital stay, ICU stay, operative blood loss, clinical sepsis and 24 hour creatinine clearance at discharge.

Results

Twelve (15%) patients from Group II and two from group I (22%) died during their admission for LDLT. All patients with HRS received terlipressin before surgery. All group I recipients received right lobe grafts including the middle hepatic vein, mean graft recipient weight ratio (GRWR) 1.1 (0.8-1.4). From group II, 43 received right lobe grafts with MHV, 9 received left lobe grafts and 28 received right lobe graft without middle hepatic vein mean GRWR 1.03 (0.65-1.3). As compared to Group II, Group I had longer operative times (780.8 ± 50.2 min vs 610.4 ± 30.3 min p=0.017), a trend towards immediate post-operative coagulopathy (INR 2.46±0.48 vs 2.17±0.39, p=0.09) but no increased blood loss (2300±390.7 ml vs 2116.6±143.2, p=0.59) or residual renal dysfunction at discharge (24 hour creatinine clearance 94.1±1.9 vs 96.1±0.96, p=0.258). Group I recipients had more episodes of sepsis (p=0.000) and operative mortality (p=0.000) as compared to Group II.

Conclusion

Early outcome of cirrhotic patients with renal dysfunction after live donor liver transplantation is good with minimal caval clamping, adequate functional graft volume and sparing use of nephrotoxic drugs. These patients are more likely to have early coagulopathy and septic episodes which may be fatal.

Abstract# 160

FINANCIAL COMPARISON OF ADULT-TO-ADULT LIVER TRANSPLANTATION FROM LIVING- VS DECEASED-DONORS.

Liise K. Kayler[1], Kusum Tom[1], Paolo Fontes[1], Igor Dvorchik[1], Amadeo Marcos[1]. *[1]Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, USA.*

Background: Liver transplantation is one of the most costly surgical procedures performed today. Live-donor liver transplantation (LDLT) may be more financially advantageous over deceased-donor liver transplantation (DDLT) due to the opportunity to select patients who are less ill and to operate in an elective manner; however, few studies have addressed this issue. **Methods**: Between January 2001 and December 2004, 833 consecutive adult liver transplants (LDLT 74, DDLT 758) were analyzed. Charges were recorded for the following time periods: (1) pretransplant, 90 days before transplantation, (2) the transplant hospitalization, and (3) posttransplant , 365 days after the transplant hospitalization. Charges were expressed as an arbitrary charge unit (ChU) that is a value between $5,000 and $15,000. **Results**: Compared with DDLT, the average ChU for LDLT was threefold lower for pretransplant care (p<0.0001), 22% lower for the transplant admission (p=0.0316), and 8% lower for post-hospitalization medical care (p=0.2113). Baseline characteristics indicated a healthier status of the LDLT group who exhibited significantly lower MELD scores (p<0.0001), shorter average 90-day pretransplant hospital length of stays (p=0.0091), shorter average time on the liver transplant waiting list (p<0.0001), and proportionately less requirement for pretransplant mechanical ventilation (p=0.0320], compared to DDLT recipients. **Conclusion**: The magnitude of the cost advantage for living- over deceased- donor transplantation depends greatly on recipient health.

Abstract# 161

MEDICAL AND PSYCHOSOCIAL RISK PROFILE IN LIVING LIVER DONORS – HOW MUCH IS ACCEPTABLE?

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Expanding the pool of liver grafts has become a major goal in transplantation, and living donation is an essential part of this evolution. Concern has always been the risk for the donor, raising the crucial question: where are the limits?

27 adults (age 19-53 y/o; 18F/9M) completed evaluation as living liver donor for 19 related and 8 unrelated recipients, including 12 children. Preoperative medical and psychosocial risk factors were assessed by an independent team (hepatologist, psychologist, social worker). Postoperative complications were classified according to Dindo (2004).

Of 27 adults evaluated, 30% had no medical, 56% no psychosocial, and 22% no combined risks. In 19 donors the following medical conditions were identified: overweight (15), hypercholesterolemia (8), hypertension (3), hepatic steatosis of 10-30% (3), s/p cholecystectomy (3), hypothyreosis (3), and heterozygous factor V Leiden mutation (2). Psychosocial risk factors were present in 12 donors: smoking (9), history of alcohol (7) or illicite drugs (4), fragmented family (6), presence of authorities for supervision (3), psychiatric comorbidity (3), and non-established occupation (3). Three individuals were excluded from donation: 2 for liver size/anatomy, and 1 for substance abuse. 24 donors underwent 16 right lobe, one left lobe, and 7 left lateral lobe resections. Postoperative complications occurred in 63%. 10 were grade I, 2 grade II, and 4 grade IIIa/b. One donor died 57 days after surgery from illicite drug overdose. Preoperative risks correlated to some degree with postoperative complications: wound infections were more frequent in overweight individuals; a donor with factor V Leiden mutation developed deep vein thrombosis, and another died from cocaine use known before surgery. All IIIa complications occurred in right lobe donors.

Ideally, living donors should be healthy without any significant risk. In our experience, 78 % of liver donors undergoing resection had ≥1 medical and/or psychosocial risk factors. Except one, the outcome of our donors has been very good. However, more caution seems to be advocated under certain psychosocial circumstances.

Abstract# 162

OUTCOME OF PATIENTS CONSIDERED FOR LIVING DONOR LIVER TRANSPLANTATION.

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Living donor liver transplantation (LDLT) has developed as an effective therapy for selected patients with end stage liver disease. In Germany at present, due to the shortage of cadaveric organ livers, time on the waiting list for liver transplantation is longer than 18 months and mortality on the waiting list is increasing every year. In the present study, we evaluate the outcome of all patients considered for LDLT at our institution.

From April 1998 to November 2006 a total of 587 patients (68 children and 519 adults) were considered for LDLT at our institution. 189 (32%) patients were transplanted with suitable living donors. In 203 (35%) cases the evaluation of donors was not completed due to change in recipient status (cadaveric liver transplantation prior to LDLT, recipient death, recipient becoming too sick for LDLT or tumor progression). In 195 (33%) cases no suitable living donor was found. Out of them, 73 patients were transplanted with a cadaveric organ, 23 died on the waiting list before transplantation, 20 patients are still on the waiting list, 30 patients were dropped out of the list because of tumor progression and 49 patients could not be listed (24 because of tumor stage, 25 foreigners).

Only a minority of patients considered for orthotopic liver transplantation will lead to LDLT. The availability of suitable living donors may limit the application of LDLT. Further understanding of the cultural differences, as well as motivating factors, for why people volunteer for evaluation, may help to improve cadaveric and living donor transplant rates.

Recurrent Disease

Abstract# 163

SERUM AUTOANTIBODIES AGAINST CYTOCHROME P450 2E1 (CYP2E1) PREDICT SEVERITY OF LIVER GRAFT HEPATITIS C RECURRENCE. Cristina Rigamonti[1], Maria F. Donato[1], Matteo Vidali[3], Francesca Agnelli[1], Roberto Serino[3], Giuseppa Occhino[3], Alessandra Ivaldi[3], Eliana Arosio[1], Valentina Monti[1], Giorgio Rossi[2], Massimo Colombo[1], Emanuele Albano[3]. *[1]Division of Gastroenterology, IRCCS Fondazione Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena, Milan, Italy; [2]Liver Transplant Unit, IRCCS Fondazione Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena, Milan, Italy; [3]Department of Medical Sciences, University "Amedeo Avogadro" of East Piedmont, Novara, Italy.*

Background and aims: Allo- and autoimmune reactions are common events following liver transplantation (LT), but their pathogenetic role on graft injury in patients transplanted for viral hepatitis has not been fully established. IgG reactivity against ethanol-inducible cytochrome P450 2E1 (CYP2E1) might occur in about 40% of patients with hepatitis C. Thus, we aimed to assess the prevalence and clinical relevance of autoantibodies against CYP2E1 in LT recipients. Methods: We studied 38 HCV transplanted patients (82% males, median age 54 yrs, 100% recurrent HCV) and 20 HBV transplanted ones (80% males, median age 51 yrs, 0% recurrent HBV), who underwent between 2003 and 2005 a liver biopsy at month 12 following LT. The IgG reactivity against recombinant human CYP2E1 was assessed by enzyme-linked immunosorbent assay in the sera collected at the time of liver biopsy. Serum samples of 60 age- and sex-matched HCV/HBV negative healthy subjects were used as controls. The presence of anti-CYP2E1 reactivity was considered when IgG titres were above the 95th percentile in the control group. Histological grading and staging were assessed according to Ishak's score. Results: HCV and HBV LT recipients differed for AST ($p<0.0001$), ALT ($p<0.0001$), gGT ($p<0.0001$) levels, grading ($p<0.0001$) and staging scores ($p=0.009$). Auto-reactivity against CYP2E1 was detected in 13% HCV recipients, but in none of HBV patients. HCV recipients with auto-reactivity against CYP2E1 showed significantly higher ($p=0.03$) grading score. A significant correlation ($r=0.37$, $p=0.02$) was also found between the anti-CYP2E1 IgG titres and the grading score. Moreover, HCV patients with anti-CYP2E1 IgG titres above the median value of these autoantibodies in the HCV group had higher risk (OR 14; 95%IC 3-67) of more active graft injury (grading score >8) than those with lower titres. Conclusions: The breaking of tolerance against CYP2E in LT recipients with recurrent HCV infection might contribute to the liver graft damage.

Abstract# 164

ARE THERE RELIABLE PREDICTORS FOR THE SEVERITY OF RECURRENT HEPATITIS C FOLLOWING LIVER TRANSPLANTATION (LT)? Diana J. Krasniansky[1], Valeria I. Descalzi[1], Silvina E. Yantorno[1], Andres E. Ruf[1], Oscar C. Andriani[1], Luis G. Podesta[1], Federico G. Villamil[1]. *[1]Liver Unit, Fundacion Favaloro, Buenos Aires, Argentina.*

Numerous predictors for the severity of HCV recurrence have been proposed. However, besides donor age, the reproducibility of other predictors has been rather low. This may result from inaccurate assessment of disease severity in studies with small number of biopsies and/or early indication of antiviral therapy based on histology at 1 yr. **Goal**: to identify predictors of severe HCV recurrence in LT patients (pts) who underwent serial protocol biopsies. **Methods**: the study included 72 pts with >1 yr of follow-up and 5±2 biopsies (Group 1). Severe recurrence was defined as fibrosis (F) ≥2 at 1 yr, F3-F4 at >3 yrs or cholestatic hepatitis (CH). Univariate and multivariate analyses included 36 donor, recipent, surgical and post-LT variables. Immunosuppression (IS): CsA/Tac 67%/33%, double/triple (MMF) IS: 39%/61%, OKT3/ATG 7%, treated acute rejection 36% (1 gr of steroids IV + oral recycle), >1 steroid bolus 21%; CMV infection 4%; living donors (LD) 22%. Only 6 pts (8%) received antiviral therapy (CH 3, F3-F4 3). Median follow-up was 59 months. A second analysis including the same variables was performed after exclusion of 19 pts with a single biopsy at 1yr of LT. (Group 2, n=53). Severity of recurrence in Group 2 was F3-F4 at >3 yrs or CH. **Results**: HCV recurrence was diagnosed as mild in 40 and severe in 32 (44%) pts. Significant predictors ($p<0.05$) for severe recurrence in Group 1 were: a) Univariate: year of LT (95-00 vs. 00-05), F≥2 at 1 yr, D/R gender match and transferin saturation (Fe-Sat) >35% or >50%; b) Multivariate: F≥2 at 1 yr, Fe-Sat. After exclusion of LD, donor age was significantly higher in pts with severe recurrence (43±13 vs. 36±17 yrs, $p=0.04$). Significant variables for severity in Group 2 (6±2.5 biopsies) were: a) Univariate: F≥2 at 1 yr, Fe-Sat >35% or 50% and pre-LT Child and MELD scores; b) Multivariate: F≥2 at 1 yr, Child score and LDLT. **Conclusions**: In this cohort of largely untreated pts who underwent a mean of 5 biopsies to accurately define mild or severe histological disease, previously proposed predictors such as intensity and type of IS, CMV infection, pre- and post-LT viral load and ischemia time, among others, were not significantly associated with severity of HCV recurrence. With the exception of DD age and F≥2 at 1 yr, the clinical significance of other predictors identified in this study require further validation.

Abstract# 165

INFLUENCE OF DONOR HISTOLOGY ON OUTCOME IN PATIENTS UNDERGOING TRANSPLANTATION FOR HEPATITIS C. Marcus Bahra, Ulf P. Neumann, Jacob Dietmar, Ruth Neuhaus, Peter Neuhaus. *[1]Chirurgische Klinik und Poliklinik, Charité, Campus Virchow-Klinikum, Humboldt Universität zu Berlin, Berlin, Germany.*

Bachground: Risk factors for graft loss and recipient death have been investigated extensively in liver transplantation for hepatitis C. Donor age has been delineated as one of the most important variable predicting outcome in these patients. However, the mechanism leading to more severe recurrent hepatitis has not as yet been investigated.

Method: In a retrospective analysis histological findings of 79 donor liver grafts for the criteria inflammation, fibrosis, fatty degeneration and necrosis was performed. Findings were correlated with the histological and clinical course of HCV positive recipients. Follow-up ranged from 1 -190 month (median = 78 months). Protocol liver biopsies were performed 1, 3, and 5 years after transplantation and staged for inflammation and fibrosis.

Results: The overall 1-, 5-, and 10 years graft survival figures were 85%, 77% and 60%, respectively. We could not identify any correlation between outcome, fat content and necrosis in the donor liver. However, fibrosis stage 3 and 4 one year after liver transplantation was significantly increased in the group of patients receiving a graft from a donor with portal inflammation ($p=0.05$). Additional, the occurrence of intrahepatic inflammation was increased significantly in older donors ($p=0.05$) and donors with prolonged intensive care unit hospitalization ($p=0.05$). The yearly fibrosis progression rate within the first year after OLT was 0.8 for patients receiving a graft without and 1.4 in patients receiving a graft with signs of portal inflammation.

Conclusion: A number of risk factors for detrimental outcome in HCV positive patients after liver transplantation have been identified. Especially older donor age significantly impaired outcome in recent analysis. However, due to donor shortage it is not possible to provide young grafts for all HCV positive patients. Our data show that donor histology is helpful to identify those patients with more severe recurrent hepatitis prior transplantation and especially in older donors long intensive care stay should be avoided.

Abstract# 166

COMPARISON AND VALIDATION OF SIMPLE NONINVASIVE TESTS FOR THE PREDICTION OF ADVANCED FIBROSIS IN PATIENTS WITH RECURRENT HEPATITIS C AFTER LIVER TRANSPLANTATION. Ulf P. Neumann[1], Marcus Bahra[1], Fabian Spiess[1], Thomas Berg[2], Maximilian Schmeding[1], Peter Neuhaus[1]. *[1]Dept. of Surgery, Charite, Virchow Clinic, Berlin, Germany; [2]Dept. of Hepatology, Charite, Virchow Clinic, Berlin, Germany.*

Liver biopsy is recommended in the follow-up of patients with hepatitis C (HCV) after liver transplantation, but it may cause complications and is limited by sampling error. Several non-invasive tests comparing routine labaratory parameters have been proposed to predict fibrosis in non-transplanted chronic HCV. The aim of the current study is to validate the simple fibrosis tests including aspartate aminotransferase (AST)/ alanine aminotransferase (ALT) ratio (AAR) cirrhosis discriminant score (CDS), age (recipient or donor)-platelet index, Pohl score, AST-to-platelet ratio index (APRI), and platelet count, as well as to develop a new score which is adapted to the special situation of liver transplantation including AST, alkaline phosphatase and donor age.

Staging was performed with the Scheuer score in 213 routinely performed liver biopsies one year after liver transplantation. Receiver operating characteristic curve analysis showed insufficient accuracy below 0.7 (area under the Roc Curve, AUROC) to predict severe fibrosis (stage 3 and 4) in the one year biopsy for all validated scores in the non-transplant situation.

Age based scores significantly improved when calculating donor and not recipient age. Only the new developed score utilizing alkaline phosphatase, AST and donor age reached a accuracy of AUROC 0.9 to predict severe fibrosis and cirrhosis one year after liver transplantation.
In conclusion, proven simple noninvasive fibrosis tests are not reliable to predict advanced fibrosis in patients with recurrent hepatitis C after liver transplantation. This might be explained by the fact that thrombocytopenia often persists after OLT due to hypersplenism and that patient age is of decreased relevance in this situation. In contrast, we developed a new score containing standard laboratory values and donor age that predicts the presence of severe fibrosis and cirrhosis with high accuracy in patients with recurrent HCV infection after OLT and may be therefore also helpful to guide the need for antiviral treatment.

Abstract# 167

PREDICTING POST-TRANSPLANTATION SURVIVAL FOR PATIENTS WITH HEPATOCELLULAR CARCINOMA. Edie Y. Chan[1], James D. Perkins[1], Anne M. Larson[2], Matthew M. Yeh[3], Jorge D. Reyes[1], Ramasamy Bakthavatsalam[1]. *[1]Dept of Surgery, Univ of Washington, Seattle, WA, USA; [2]Dept of Medicine, Univ of Washington, Seattle, WA, USA; [3]Dept of Pathology, Univ of Washington, Seattle, WA, USA.*

Background: The recurrence of hepatocellular carcinoma (HCC) following liver transplantation plays a major role in recipient mortality. Pre-transplant staging is inaccurate at predicting explant staging and post-transplant survival. Identification of factors influencing survival of patients with HCC is necessary to plan surveillance strategies and adjuvant therapies.
Method: We performed a retrospective review of 505 consecutive liver transplantations from 1/1/2001 to 12/31/2005. Mean follow-up was 817 ± 486 days. Patients with HCC on explant were identified. Review of explant pathology, donor and recipient characteristics, intra- and post-operative events was performed to determine the factors associated with survival of patients transplanted for HCC.
Results: Explant pathological analysis identified 116 patients with HCC. Twelve patients developed recurrent HCC, and 8 (6.8%) of those have died. Of recipient characteristics, age >60 (p=0.002) and the presence of metabolic syndrome (p=0.04) decreased survival. On explant pathology, total number of tumors (p=0.0002), total tumor size >8.5 cm. (p=0.0001), tumor differentiation (well, moderate, poor) (p=0.0002), multi-lobulated (p=0.003), macro-invasion (p=0.02) and tumor in both lobes of the liver (p=0.0014), correlated with survival. No donor characteristics or intra- or post-operative events significantly influenced survival. Only 54% were accurately staged pre-operatively. Restaging via TNM classification did not significantly predict survival. A new score for predicting cancer recurrence (SPCR) was developed where tumors in both lobes of the liver and poorly differentiated tumors are given 2 points; macro-invasion, moderately-differentiated tumors, and total tumor size > 8.5 cm are given 1 point; and well-differentiated tumors, tumors in one lobe of the liver, and absence of vascular invasion are given 0 points. This SPCR significantly predicts survival at all levels (p=0.007): 0-1 point predicts a 3-year survival of 98%; 2-4 points predict an intermediate 3-year survival of 73%; and ≥5 points predict a 3-year survival of 20%.
Conclusion: HCC recurrence impacts recipient mortality. The SPCR can direct patients' post-operative surveillance schedule or adjuvant treatment for those with a low predicted survival.

Abstract# 168

LONG TERM HISTOLOGICAL OUTCOME AFTER LIVER TRANSPLANTATION (OLT) FOR FULMINANT HEPATIC FAILURE (FHF). Silvina E. Yantorno[1], Valeria I. Descalzi[1], Andres E. Ruf[1], Oscar C. Andriani[1], Luis G. Podesta[1], Federico G. Villamil. *[1]Liver Unit, Fundacion Favaloro, Buenos Aires, Argentina.*

OLT is a life saving treatment for FHF with average survival rates of 65%-80%. However, limited data is available regarding allograft histology during long-term follow-up. **Goal:** to assess histological outcome of adults transplanted for FHF utilizing annual protocol liver biopsies. **Methods:** From 1995 to 2006, OLT was performed in 52 adults with FHF. Fifteen patients (pts) who died and 7 with incomplete data were excluded. The study included 30 pts with FHF (viral 7, autoimmune hepatitis 7, drug-induced 4, indeterminate etiology 12) who underwent a median of 3 (1-5) protocol biopsies beyond 1 year of follow-up. Serologic tests for HBV and HCV, HCV RNA and autoantibodies were obtained at the time of liver biopsies. Mean follow-up after OLT was 6.5±2.6 years. **Results:** Five pts (17%) who developed overt graft dysfunction required liver biopsy and/or cholangiography by clinical need and were diagnosed as having acquired HCV infection (n=1), diffuse biliary strictures (n=1) and *de novo* autoimmune hepatitis (n=3). In the remaining 25 pts (83%), allograft injury was initially diagnosed with protocol biopsies. At the time of biopsies (n=73) liver tests were normal in 57 (78%) and mildly abnormal (<2xULN) in 16 (22%). Histological findings included inflammatory changes in 56 biopsies (31 mild chronic hepatitis (CH), 3 moderate CH, 4 lobular hepatitis, 18 minimal portal and/or lobular inflammation), steatosis in 6 (4 with mild steatohepatitis) and inactive fibrosis in 5 (all stage 1). Only 6 biopsies (8%) showed normal histology. At the time of the diagnosis of CH (n=34) ALT was normal in 23 (68%) and mildly elevated in 11 (32%). Overall, CH was present in 14 of 25 pts (58%), 4 in only 1 biopsy and 10 in >1 biopsy. The prevalence of CH was similar in viral (2/5), autoimmune (3/6), drug-induced (3/3) and indeterminate (6/10) etiologies of FHF. One pt fulfilled criteria for recurrent autoimmune hepatitis. In the remaining 24 pts all viral and autoimmune markers were negative.
Conclusions: The majority of pts transplanted for FHF (92%) developed mild histological allograft injury despite having normal liver tests. Recurrent and *de novo* autoimmune hepatitis were the only identifiable etiologies of CH. Additional studies are required to assess whether these abnormalities are due to immunological factors, infection with viral agents other than HBV and HCV or other unidentified etiologies.

Abstract# 169

STEATOSIS AFTER HEPATITIS C-RELATED LIVER TRANSPLANTATION. Rodrigo S. Honorio[1], Evandro S. Mello[1], Venancio A. F. Alves[1], Fabiana R. Lima[1], Edson R. Abdala[2], Telesforo Baccchella[2], Estela R. R. Figueira[2], Patricia R. Bonazzi[2], Daniela R. M. Gotardo[2], Marcel R. R. Machado[2]. *[1]Pathology Division, University of Sao Paulo Medical School, Sao Paulo, Brazil; [2]Surgery, University of Sao Paulo Medical School, Sao Paulo, Brazil.*

Introduction: The relationship between liver steatosis and hepatitis C (HVC) is well documented. It seems that the virus has a direct steatogenic effect. In immunocompetent individuals, steatosis is related to fast fibrosis progression and worse therapeutic response. These features may be not the same in HCV transplanted patients. Although initial studies found a relationship between steatosis and recurrent HVC, some recent articles have not confirmed these results. Conversely, there are data suggesting an inverse relationship between body mass index (directly related to liver steatosis) and recurrent disease severity, at least 6 months after the transplantation.
Objective, Patients and Methods: In order to understand the role of steatosis in our cases, we evaluate 48 patients who underwent a liver transplantation for HCV end-stage liver disease between 1995 and 2004 and that were still under follow-up in 2006. All liver biopsies were reviewed acccording to a histopathologic protocol. Grading and staging were scored according to the method of Ishak. Steatosis was assessed using a 5% scale. Four patients were removed from the study because of incomplete histological data and 3 due to absence of a follow-up biopsy after 1 year. **Results**: Four of the remaining patients did not present hepatitis and the same number of patients (one of them from the preceding group) did not present steatosis in any follow-up biopsy. From the remaining 33 individuals, 24 had steatosis in some biopsy before the diagnosis of hepatitis, 7 of them with steatosis ≥ 10% (FPR: 0,46) and 16 of them with steatosis < 10% (FPR: 0,60). When only those patients who necessarily underwent biopsy during the first year after transplantation were evaluated, 8 patients had steatosis ≥ 10% (FPR: 0,37), 16 patients had steatosis < 10% (FPR: 0,61) and 8 had no steatosis (FPR: 1,10) in any first year biopsy. **Conclusion:** Steatosis is frequent after HCV-related liver transplantation (90,2%) and it´s common to be found before the chronic hepatitis diagnosis. Patients that presented more steatosis (≥ 10%) in the first year after transplantation had higher RFP, despite this finding was not statistically significant.

Abstract# 170

CONTRIBUTION OF THE VASCULAR PROFILE ANALYSIS AND HISTOLOGICAL PATTERNS TO THE DIFFERENTIAL DIAGNOSIS OF HEPATIC NODULES. Cristina Nascimento[1], Adriana Caroli-Bottino[1], J. Maia[1], Vera Pannain[1]. *[1]Department of Pathology, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil.*

Background and Aims: Dysplastic hepatocellular nodules have received a variety of terminologies throughout the years. In 1994, a new system, the International Working Party (IWP), was proposed standardizing them and establishing diagnostic morphologic criteria for all the hepatocellular lesions,

which were classified as: large regenerative nodules (LRN), low-grade dysplastic nodules (LGDN), high-grade dysplastic nodules (HGDN) and hepatocellular carcinoma (HCC). However, some difficulties in distinguishing between them can still be found. The histological features of these nodules according to IWP and the vascular profile by immunohistochemistry were studied in order to verify its contribution in this aspect.

Methods: The histological parameters of 107 nodules of liver explants with morphologic characteristics of LRN, LGDN, HGDN and HCC, according to IWP, from department of pathology - UFRJ had been studied. Among these, 90 had been submitted to the immunohistochemistry studies with antibodies (Ab) to CD34 and HHF35 to analyze sinusoidal capillarization and arterialization, respectively.

Results: The nodules were classified as follows: 17 LRN, 38 LGDN, 28 HGDN and 24 HCC. The most important histological features that contributed for the diagnosis were: cellularity, thickness of the liver cell plates, cytoplasmic staining, nuclear hyperchromasia, nuclear atypia, pseudoacinar formation, portal tracts, nuclear-cytoplasmic ratio, mitosis/10HPF and isolated arteries. CD34 antibody demonstrated capillarization over 30% only in the dysplastic and neoplastic nodules, whereas it was over 50% in the HCC, in 85,7% of the cases. The number of isolated arteries, demonstrated with the Ab to HHF35 was very high in HCC (average of 4,032), showing positive correlation when compared with the other nodules ($p<0.005$).

Conclusion: The cellularity, thickness of the liver cell plates, cytoplasmic staining, nuclear hyperchromasia, nuclear atypia, pseudoacinar formation, portal tracts, nuclear-cytoplasmic ratio, mitosis/10HPF and isolated artery had been considered the most important criteria in the diagnosis of these lesions. The angiogenesis gradually increased from the dysplastic nodules to the HCC. The quantification of the sinusoidal capillarization and isolated arteries in hepatocellular nodules can help to distinguish HCC from dysplastic nodules.

Abstract# 171

RECURRENCE OF AUTOIMMUNE HEPATITIS AFTER LIVER TRANSPLANTATION. Claudia Alves Couto[1], Ronaldo Afonso Franco, Jr.[1], Eduardo Garcia Vilela[1], Luciana Costa Faria[1], Leandro Ribeiro Carvalho Fonseca[1], Marcelo Dias Sanches[1], Agnaldo Soares Lima[1], Teresa Cristina Abreu Ferrari[1]. *[1]Alfa Gastroenterology Institute, University Hospital, Federal University of Minas Gerais, Belo Horizonte, Minas Gerais, Brazil.*

This study was designed with the purpose of evaluating the rate of clinical and biochemical autoimmune hepatitis (AIH) recurrence after liver transplantation (LT) in patients who underwent LT for AIH related cirrhosis. The diagnosis of AIH recurrence was based on the following criteria: (1) hypertransaminasemia; (2) reappearance or increase in autoantibodies levels in serum; and (3) the need for significant steroid dose increase. Histological abnormalities compatible with autoimmune recurrence, and exclusion criteria such as acute rejection and HCV infection, were also taken into account. From a total of 333 transplanted patients in our Institution, 19 (5.7%) had the diagnosis of AIH defined according to the International Autoimmune Hepatitis Group. From these, 16 patients (median age: 31yrs, range: 13-56yrs; 11 female) survived for more than 2 months after LT and have been followed for a median period of 37mos (range: 7-110 mos). Fourteen patients had type 1 AIH, one patient, type 2 and the other one did not have any identified autoantibodies. Post-LT immunosupression was based on tacrolimus plus prednisone in 14 patients, and tacrolimus, prednisone plus micophenolate mophetil in the other 2. Six patients (37.5%) presented acute cellular rejection, and 2 (12.5%) developed severe infectious complications. Clinical AIH recurrence was not observed in any patient, but one developed biochemical and histological recurrence. Antismooth muscle antibody reappeared (1/80) and the liver histology showed a moderate inflammatory infiltrate, formed predominantly by plasma cells and lymphocytes, in the portal tracts with piecemeal necrosis and mild fibrosis. She presented normalization of the transaminasemia in response to the increase of prednisone dose. In synthesis, AIH recurrence was diagnosed in only one case during the follow-up. However, histological recurrence without biochemical abnormalities can not be ruled out, as hepatic biopsy was not performed routinely.

Anesthesia Interactive Session II

Abstract# 172

SAFETY AND EFFICACY OF PRONE VENTILATION IN FULMINANT HEPATIC FAILURE AND ELEVATED INTRACRANIAL PRESSURE. Ali Al-Khafaji[1], Ivonne Daly[1], Jamie Weaver[1], Tracy Grogan[1], Peter Linden[1]. *[1]Critical Care Medicine, University of Pittsburgh School of Medicine, Pittsburgh, PA, USA.*

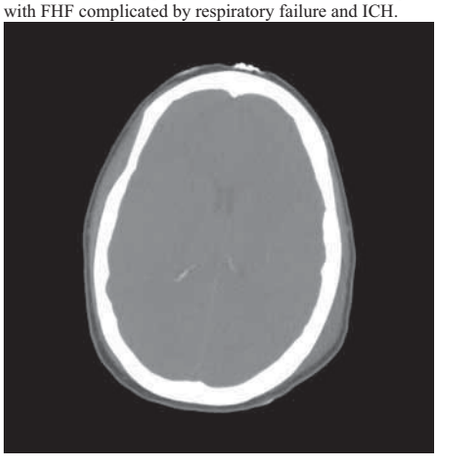
Background:

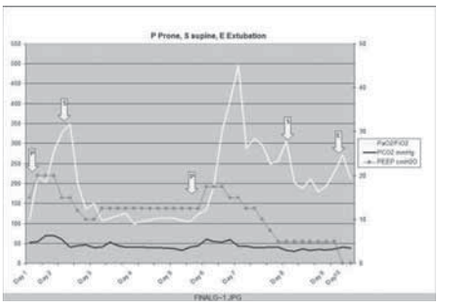
Respiratory failure and intracranial hypertension (ICH) are common complications of fulminant hepatic failure(FHF). Proning in acute respiratory distress syndrome improves oxygenation but have no effect on mortality. There has been no reports on prone ventilation in respiratory failure complicating FHF.

Case report:

36 year old female was admitted with FHF. At admission she was severely hypoxic, in renal failure on CVVH and hemodynamically unstable requiring Norepinephrine and Milrinone infusion. She was deemed unstable for liver transplantation. Due to her refractory hypoxia she was sedated, paralyzed and placed in prone position using Rotoprone Therapy System (Kinetic Concepts Inc), San Antonio, TX. Proning led to immediate improvement of her oxygenation. On day 2, it was clear that she had cerebral edema evident on head CT scan which showed compressed cisterns, obliterated gray-white junction and effaced sulci (figure 1). In addition, she had narrowed arterio-jugular venous oxygen content difference (0.6-2.8 ml/dl) and transcranial doppler tracing which were indicative of cerebral hyperemia. Due to concern that proning might lead to a further increase in ICH, she was placed back in supine position with head at 30 degree angle. Hyperventilation, maintaining mean arterial pressure above 90 mmHg were instituted. On day 6 she was placed back on prone position with reverse trendelenberg which led to dramatic and sustained improvement of her respiratory status and subsequent liberation from mechanical ventilation on day 10 (figure 2). Following extubation, no long term neurological sequelae were noted.

Significance: Prone position can safely and effectively be used in patients with FHF complicated by respiratory failure and ICH.





Immunosuppression

Abstract# 173

LONG TERM FOLLOW UP OF IMMUNOSUPPRESSIVE MONOTHERAPY IN LIVER TRANSPLANTATION: TACROLIMUS AND MICROEMULSIFIED CYCLOSPORIN.

Vibhakorn Shusang[1], Maria Raimondo[1], Laura Marelli[1], Evangelos Cholongitas[1], Marco Senzolo[1], B. R. Davidson[1], David Patch[1], Keith Rolles[1], Andrew K. Burroughs[1]. *[1]Surgery, Royal Free Hospital, London, United Kingdom.*

Background and aims. Early withdrawal of steroids after liver transplantation has benefits particularly for HBV and HCV related cirrhosis but rarely is total avoidance of steroids used. We evaluated long term results of our randomized study (ref.1) Cyclosporin (C) versus Tacrolimus (T) and another cohort with T "ab initio". **Methods.** 160 adults first liver transplants 1996-2001 (142 cirrhosis,35 hepatocellular carcinoma, 18 acute liver failure:64 randomized to C 5 mg/kg BD (34) or T 0.05 mg/kg BD (30) orally and 96 T only. Protocol liver biopsies at day 4-14, and whenever else indicated. Rejection treated 1.0 g daily of Methylprednisolone x 3. Further rejection after 2 courses of Methylprednisolone was defined as monotherapy failure. Median follow up: 72 months (range 0.06-127).**Results.** Actuarial 5 year survival was 71% in cirrhosis without HCC and 50% with HCC and 71% T group and 69% C group (randomized). Late deaths (> 3 months) 35:8 recurrent HCC, 4 recurrent HCV, 6 tumour non lymphoma, no PTLD, 1 cardiac, 1 cardiovascular accident, and 19 others). Retransplantation in 8:4 vascular occlusion, 2 biliary complications, 2 primary nonfunction/non thrombotic infarction. Histological severity of rejection was different: severe rejection 8% (T) and 19 % (C) (P=0.057). Therapy for acute rejection was 56% T and 67% C patients (NS). Monotherapy failure 10 (8%) T and 5 (14%) C. Immunosuppressive therapy was changed from T in 9(7%) and from C in 5(14%). 4 grafts were lost due to chronic rejection (11%) in C, but none T group. Creatinine concentration at 12 and 24 months more than 140 uMol/L : was 10 (8%) and 11(9%) in T and 12 (35%) and 6 (17%) in C group. **Conclusions.** T or C monotherapy in randomized trial showed no long term differences.With monotherapy, 25 % (T) and 19% (C) showed no evidence of acute rejection clinically, biochemically or histologically, and were not exposed to steroids at any time. Monotherapy ab initio is a viable immunosuppressive strategy. No chronic rejection occurred in T treated patients.

Reference

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Abstract# 174

3-DAY VERSUS 10-DAY INDUCTION THERAPY WITH ANTITHYMOCYTE GLOBULIN (ATG) IN ORTHOTOPIC LIVER TRANSPLANTATION (OLT).

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Background

The concept of T-cell depletion always has been a part of clinical immunosuppression. Aim of this study is to compare a 3-day ATG with a 10-day ATG induction protocol in a cyclosporine based immunosuppressive regimen.

Methods

In this retrospective study we compared 226 patients in a 3-day ATG induction protocol with 247 patients who received 10-day ATG induction.

Both groups were almost identical except a higher rate of cholestatic diseases in the 10-day ATG group.

Statistical analyses used chi-square test, t-test, Cox-Model and the Kaplan-Meier method.

Results

The overall 6-month rejection rate is 22.3% in the 10-day ATG group and 12.7% in the 3-day ATG group (p=0.03). Subanalyses with respect to the underlying disease showed a higher rejection rate for patients with cholestatic diseases (p=0.01), which explains the overall difference. Rejections were separately analysed for each of the BANFF categories and did not reach significance.

De novo malignancies and HCCA recurrence were identical in both groups.

Viral infection rate was 16% and 18% respectively (p>0.5).

The incidence of bacterial and fungal infections was also not different (37% vs. 42%, p>0.1).

However, infection and ATG administration are independent risk factors for survival. Analyzes showed a lower rate of fatal infections in the 3-day ATG group (5.8% vs. 14.6% p=0.01). Further multivariate analysis identified 10-day ATG administration and infection as detrimental risk factor for death within 12months after transplantation. (p<0.0001).

Conclusion

Our results strongly support the concept of a 3-day ATG induction therapy after OLT that offers the same immunosuppressive benefit of low rejection rates as a long term ATG induction therapy without the negative survival effect due to an increased rate of lethal infections.

Abstract# 175

INDUCTION IMMUNOSUPPRESSION IN 698 ADULT, CADAVERIC LIVER TRANSPLANT RECIPIENTS.

Rodrigo M. Vianna, Richard S. Mangus, Jonathan A. Fridell, Joseph Tector. *[1]Surgery, Clarian Health Partners, Indiana University School of Medicine, Indianapolis, IN, USA.*

Background

Induction immunosuppression is now used routinely at many transplant centers for liver, pancreas, kidney and small bowel recipients. Induction therapy may be associated with immunosuppression-related complications such as an increased risk of infection, neoplasm, and hepatitis-C recurrence. Our center has utilized 3 distinct induction immunosuppression protocols over the last 5 years. This study reports a comparison of these three protocols for transplant outcomes and complications.

Methods

Data were obtained from a thorough review of the transplant database and all medical records for liver transplant patients between July 2001 and June 2006. Induction immunosuppression consisted of (1) rabbit antithymocyte globulin (rATG) induction given as three doses (6mg/kg total) with first dose intraoperatively (OR ATG), (2) rATG as in #1 but first dose started 48-hours post-transplant (Delayed ATG), and (3) delayed rATG as in #2 but with addition of single dose of rituximab 72-hours post-transplant (Delayed ATG+Ritux). All rATG was given with a rapid steroid taper. Maintenance immunosuppression was with tacrolimus monotherapy. Outcomes included graft/patient survival and immunosuppression related complications.

Results

Groups consisted of (OR-ATG) n=166 (23.8%), (Delayed ATG) n=259 (37.1%), and (Delayed ATG+Ritux) n=273 (39.1%)(total n=698). One-year graft/patient survival for each of the groups was (OR-ATG) 84.3%, 87.3%, (Delayed ATG) 82.2%, 83.8%, and (Delayed ATG+Ritux) 85.1%, 86.1% (p=NS). Kaplan-Meier actuarial survival failed to demonstrate a significant difference between the groups with median follow up time of 33 months. One-year survival for hepatitis-C infected recipients was (OR-ATG) 90.8%, (Delayed ATG) 85.1%, and (Delayed ATG+Ritux) 87.9% (p=NS). For all patients with hepatocellular carcinoma, survival was (OR-ATG) 85.7%, (Delayed ATG) 87.2%, and (Delayed ATG+Ritux) 86.0%. There were only two patients who developed post-transplant lymphoproliferative disorder (PTLD)(0.3%). Acute rejection was seen in less than 5% of recipients and there was no steroid resistant rejection. Infectious complications were minimal.

Conclusions

Induction immunosuppression can be safely used in adult liver transplant recipients with good efficacy and minimal immunosuppression-related side effects.

Abstract# 176

PHARMACOKINETICS OF TACROLIMUS IN LIVE DONOR LIVER TRANSPLANTATION (LDLT) VS. DECEASED DONOR LIVER TRANSPLANTATION (DDLT).

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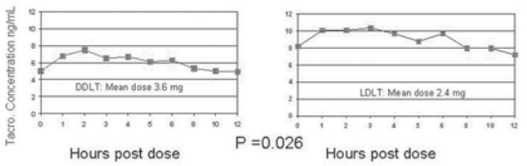
Post liver transplant (LTx) hepatic dysfunction impairs the metabolism of tacrolimus, however the kinetic differences with reduced size hepatic volume has not been studied. While the DDLT recipient receives the complete hepatic allograft, in adult LDLT, only about 55 – 65% of hepatic mass is transplanted.

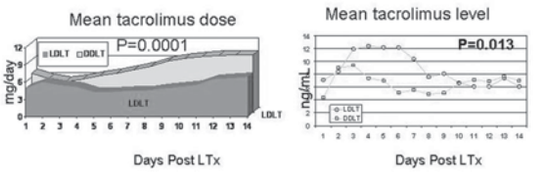
Aim is to compare the pharmacokinetic, dosage and concentration differences of tacrolimus in LDLT vs DDLT patients.

Patients & Methods: Twelve consenting LDLT and 12 DDLT patients received oral tacrolimus 0.04±0.005 mg/kg twice a day post LTx to achieve tacrolimus trough concentration between 6 to 10 ng/ml. Multiple blood samples were collected during one dosing interval to measure tacrolimus concentrations, after the patient was on a stable dose for at least 2 days. Pharmacokinetics parameters were calculated using non-compartmental analysis with WinNolin software.

Results: Area under the blood concentration vs. time profile (AUC) of tacrolimus was significantly higher in LDLT (48.76±21.74 ng·h/mL/mg) compared to DDLT (35.07 ± 25.27 ng·h/mL/mg) (figure upper half; p= 0.026). Despite significantly lower mean tacrolimus dose, the mean trough concentrations were significantly higher in LDLT (5.3±0.9 mg/day; 9.1 ± 2.6 ng/mL) compared to DDLT (7.8±1.7 mg/day; 6.4± 1.7 ng/mL). (p=0.0001; and p= 0.013 respectively figure lower half).Also, per patient, a mean cumulative dose for first 14 days was significantly lower in LDLT compared to DDLT (69.9±36.7 mg LDLT vs.118.5±60.2 DDLT; p = 0.028). Mean tacrolimus tough concentration to mean daily dose of tacrolimus ratio was 0.8 for DDLT and 1.8 for LDLT.

Conclusion: Reduced hepatic volume significantly impairs the clearance of tacrolimus. Dose normalized AUC, mean daily trough concentrations were significantly higher and mean daily dose, mean cumulative tacrolimus dose were significantly lower in LDLT compared to DDLT. Preemptively a 30% dose reduction in LDLT compared DDLT are recommended to avoid tacrolimus related neurotoxicity, nephrotoxicity and over immunosuppression.





Abstract# 177

COMPARISON OF PHARMACOKINETICS OF MPA AFTER ORAL AND IV DOSING OF MMF IN HEPATIC TRANSPLANT PATIENTS.

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Purpose: Two studies in recipients of liver allografts were undertaken to investigate the pharmacokinetics of MPA after MMF therapy.

Methods: MYCS 2378: 45 hepatic allograft recipients were randomized to one of three 24 hour IV infusion regimens: 2 g q 12h over 80 min or 3 hours or 1 g given as four, six hour infusions. After approximately 7 days of IV therapy, patients were switched to oral MMF at 2 g bid. MYCS 2646: A subset of patients who received MMF as part of a double blind, randomized study comparing MMF and azathioprine participated in a PK sub-study. IV therapy lasted from 4-14 days. Plasma samples were taken after the last IV infusion and 24h later after the first oral administration and 6 months after transplant. In both studies all patients received cyclosporine. AUCs were calculated using the linear trapezoidal rule. MPA and MPAG were assayed with HPLC.

Results: The results of the two studies are summarized in Tables 1 and 2 below.

MYCS 2378: Mean AUC 0-12 (mg h/L)±SD. Day 7 IV and Day 8 oral

	2g bid: 80 min infusion		2g bid 3 h infusion		1 g qid 6 h infusion	
DAY	MPA AUC	MPAG AUC	MPA AUC	MPAG AUC	MPA AUC	MPAG AUC
7	39.6 ± 9.99	1509 ± 754	43.3 ± 20.1	1016 ± 922	41.4 ± 18.7	727 ± 330
8	30.9 ± 13.1	1519 ± 763	29.8 ± 12.9	912 ± 877	27.1 ± 10.4	895 ± 517

AUC 0-12 for 6h infusion = AUC x 2; MPAG expressed as MPA equivalents

MYCS 2646. Mean AUC 0-12 (mg h/L)±SD after last IV and first oral dose

	MPA AUC	MPAG AUC
IV 1 g bid	34.0 ± 17.4	616 ± 407
Oral 1.5 g bid	31.0 ± 14.3	809 ± 485

MPAG expressed as MPA equivalents

In study MYCS 2378 the MPA AUCs at months 3 and 9, adjusted to 2 g bid, were 62.3 ± 24.6 and 82.5 ± 33.6 respectively. In MYCS 2646 MPA AUC at 6 months was 60.6 ± 18.4, dose adjusted to 1.5 g bid.

Conclusion: After dosing of MMF in combination with cyclosporine in liver transplant patients, the pharmacokinetic profile of MPA after oral dosing differs from that after IV dosing such that higher oral doses are required to give similar exposure. Compared to standard renal therapy with MMF (1 g bid), higher oral doses are required to get similar AUCs in liver patients in the early post transplant period. The IV infusion rate does not affect steady state AUC. AUC of MPA increases over time.

Abstract# 178

CONVERSION FROM CALCINEURIN INHIBITORS (CNIs) TO SIROLIMUS (SRL) IMMUNOSUPPRESSION IS BENEFICIAL IN LIVER TRANSPLANT (LT) RECIPIENTS WITH RENAL DYSFUNCTION (RD).

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Limited data is available regarding the safety and benefits of conversion from CNI's to SRL in patients (pts) with RD after LT. **Aim:** to assess changes in serum creatinine (SCr) and glomerular filtration rate (GFR) following abrupt and complete withdrawal of CNI's and conversion to SRL in LT recipients. **Methods**: this retrospective study included 112 pts with RD (GFR <90 mL/min) from 3 LT centers. Mean age was 55±11 years (58% males). GFR was measured using the Cockcroft-Gault formula. Baseline RD was mild (GFR 70-90) in 16 pts (14%), moderate (GFR 40-70) in 66 (59%) and severe (GFR <40) in 30 (27%). At the time of conversion (median 24, range 1-180 months) 78 pts received CsA (70%) and 34 tacrolimus (30%) with or without MMF (51%) or steroids (48%). Target SRL levels were 5-15 ng/ml. Mean follow-up after conversion to SRL was 26±14 months. Statistical analysis: chi square and Fisher tests. **Results:** Significant improvement of renal function was observed when comparing values obtained at baseline and last follow-up, both for SCr (mg/dL) (1.7±0.5 vs. 1.5±0.5, p= 0.001) and GFR (mL/min) (51.7 vs. 60.1, p=0.0001). Overall, renal function improved or stabilized in 95 of 112 pts (85%). SCr improved significantly in pts converted before 1 year (n=37) of LT (1.8±0.5 vs. 1.5±0.4, p=0.004) but not in those (n=75) with latter conversion (1.7±0.4 to 1.6±0.5 p=0.1). Similarly, a significant decrease in SCr was observed in 82 pts with baseline GFR >40 (1.6±0.4 to 1.4±0.4 p=0.0001) but not in 30 pts with GFR <40 (2.04±0.5 to 1.9±0.6 p=0.3). Following conversion to SRL, hypercholesterolemia (>220mg/dL) occurred in 56 pts (50%), infectious complications in 19 (17%) and acute cellular rejection in only 7 (6.%). No significant changes in white cell and platelet counts were observed. Treatment with SRL was discontinued in 22 pts (20%) mostly due to adverse effects. **Conclusions:** Conversion to SRL is an affective strategy to improve renal function in patients immunosuppressed with CNI's who develop RD post-LT. Major benefits of SRL were found in pts with mild or moderate RD at baseline and in those converted within 1 year of LT. Side effects of SRL were frequent and led to drug discontinuation in 20% of pts.

Abstract# 179

CHANGES IN FREQUENCY AND PHENOTYPE OF CIRCULATING CD4$^+$Foxp3$^+$ REGULATORY T CELLS AFTER CONVERSION FROM CALCINEURIN INHIBITOR TO MYCOPHENOLATE MOFETIL MONOTHERAPY.

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Background: In vitro evidence suggests that calcineurin inhibitors (CNI) interfere with the development and function of CD4$^+$Foxp3$^+$ regulatory T cells (Treg). Furthermore, CNI treatment causes renal dysfunction in a majority of transplant recipients. This study describes the effects of conversion from CNI monotherapy to mycophenolate mofetil (MMF) on the frequency and phenotype of circulating Treg in liver transplant recipients.

Methods: Long-term recipients with renal impairment on CNI (n=16) were converted to MMF (2 g/day) and received a single dose of IL-2-receptor blocking antibody, Daclizumab (2 mg/kg). The control group (n=8) was continued on CNI treatment. Before and after conversion renal function was assessed and Treg levels in blood were determined by flowcytometry and real-time RT-PCR.

Results: One month after conversion the proportion of CD25$^+$ cells within CD4$^+$ T cells decreased (40% ± 12 SEM, p=0.001), while levels of CD4$^+$Foxp3$^+$ cells remained unchanged. The CD25 down-regulation or shedding was most apparent on Foxp3$^+$ cells and was not due to epitope blocking by Daclizumab. Six months after conversion the mean fluorescence intensity of CD25 expression on CD4$^+$Foxp3$^+$ cells was higher compared to pre-conversion (7.2 vs. 4.5, p=0.016), but not on Foxp3$^-$ T cells. Furthermore, the total percentage of Foxp3$^+$ and CD25$^+$CTLA-4$^+$ cells within the CD4$^+$ T cell population significantly increased 6 months after conversion with 116% ± 44 and 89% ± 15 SEM respectively (p<0.05). FOXP3 mRNA analysis confirmed the increase of Foxp3$^+$ Treg. None of these changes were seen in the control patients. Clinically, renal function significantly improved 6 months after conversion (decrease of serum creatinin and BUN, both p=0.005) and reversible acute rejection occurred in two patients in the conversion group (13%) versus none in the CNI group.

Conclusion: The percentages of circulating CD4$^+$Foxp3$^+$ Treg increase after conversion from CNI to MMF. Dacluzimab does not reduce the percentages of Foxp3$^+$ Treg but is associated with reduced CD25 expression and a low incidence of conversion-associated rejection. These results show that conversion to MMF causes an improvement of renal function and may promote Treg-mediated transplant tolerance.

Abstract# 180

BASILIXIMAB (Bas) INDUCTION NEGATES THE EFFECT OF A POSITIVE T CELL CROSS MATCH ON ACUTE REJECTION (ACR) RATES IN LIVER TRANSPLANT (OLT) RECIPIENTS.

Dympna M. Kelly[1], Shakir Hussein[1], Armine Karapetian[1], Andrei Cocieru[1], Joan Alster[1], Rebecca Corey[1], Bijan Eghtesad[1], Charles M. Miller[1], John J. Fung[1]. *[1]General Surgery, Cleveland Clinic, Cleveland, OH, USA.*

Records of all patients receiving OLT between 09/01 and 08/05 in a single center were retrospectively reviewed (IRB 05-181). 205 primary adult OLT recipients with T cell cross match data were identified. From 09/01-04/04,76 patients received oral Tacrolimus (Tac), dosed to maintain trough levels of 12-15ng/ml and a standard steroid regimen, discontinuing steroids at 6-12 mos (Group 1). From 04/04-08/05 129 patients received Bas induction (20mg IV, day 0, day 4) followed by oral Tac dosed to maintain trough levels of 8-12ng/ml, and a rapid steroid taper over 21 days (Group 2). Mycophenylate Mofetil (MMF) was used in both groups for renal sparing or Tac toxicity. All biopsy proven, treated ACR episodes were recorded. T cell cross match status was determined using flow cytometry. RESULTS: 20% of patients in Group 1 and 22% in Group 2 were T cell cross match +ve. Recipient details are outlined in Table 1. Tac levels in the first post-OLT week were similar in both groups. Group 2 received less steroids with no intra-operative bolus and discontinuation in 3 weeks. The incidence of ACR 1-3mos post-OLT was 49% in Group 1 and 19% in Group 2 (p<.0001). In Group 1 ACR rate was 66% in T cell+ve patients vs. 55% in T cell-ve patients. ACR rates were 25% in both T cell+ve and T cell-ve patients receiving Bas (Group 2). Bas significantly reduced ACR in T cell +ve recipients (Chi Sq p=.003). In terms of outcome cross match +ve patients tended to have longer ICU stay and significantly longer hospital stay (p=.03). Bas was well tolerated and associated with improved graft function with lower serum peak bilirubin (P=.06) and reduced hospital stay (p=.0005). Patient and graft survival were similar in both groups (Wilcoxin p=.7). CONCLUSION: Bas induction significantly reduces ACR and negates the increased ACR rate associated with T cell+ve cross match.

TABLE 1	Group 1: No Basiliximab (n=76)		Group 2: Basiliximab (n=129)	
Cross Match	T Cell Positive	T Cell Negative	T Cell Positive	T Cell Negative
Patients	15 (20%)	61 (80%)	28 (22%)	101 (78%)
Sex	F66% M33%	F25% M75%	F57% M43%	F26% M74%
OR Time(min)	423±55	451±64	537±134	525±143
PRBC transfused	8±4	10±6	8±6	8±7
ACR: 1-3mos	10(66%)	34(55%)	7(25%)	25(25%)
ICU LOS(days)	5±5	4±3	8±11	5±9
LOS (days)	51±92	20±12	24±20	17±14

Abstract# 181

LONG-TERM OUTCOME WITH rATG INDUCTION AND STEROID-FREE IMMUNOSUPPRESSION IN PEDIATRIC LIVER TRANSPLANTATION (PLTX).

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Background:
Steroid-free immunosuppression (IS) has significant potential benefits in pediatric liver transplantation.

Methods:
Outcomes with a steroid-free IS protocol with a rATG pre-conditioning regimen and tacrolimus (Tac) monotherapy were reviewed.

Results:
Between 8/2001-9/2006, 119 consecutive patients with a median age of 5.3 y (range 1.4 m-21.7 y) received 123 liver allografts (94 whole organs, 6 cadaveric split, 23 living donor, and 5 simultaneous cadaveric kidney allografts). Pre-treatment and induction therapy was with 4-5 mg/kg rATG. Oral tacrolimus (TAC) was started within 24 hours post-transplant to achieve a target trough of 10-15 ng/ml. 8 patients were switched to sirolimus (SRL) to minimize potential long-term calcineurin toxicity.
Overall patient and graft survival is 95.8% (114/119) and 92.7% (114/123) respectively, at a mean follow-up time of 24.2 m +/-16.3 (range 2.7-63.9 m). 5 children died from recurrent hepatic malignancy (n=3), multiple organ failure (n=1), and cardiac arrest (n=1). Retransplantation was performed successfully in 3 patients; one patient required two retransplants for thrombotic complications. IS maintenance at current follow-up is: TAC (TID n=1, BID n=51; QD n=41, QOD or less n=13,), SRL (QD n=2, BID n=2, single dose or less n=4). 83 children (69.7%) are free of maintenance steroids and the others are being weaned off steroids instituted during treatment of ACR. Viral complications were adenoviral hepatitis (n=1), CMV disease (n=2) and EBV related PTLD (n=3), which resolved with antiviral therapy and modulation of IS. In patients with more than 6 months follow-up incidence of post transplant hypertension and diabetes mellitus have been seen in 7 (6.1%) and 1 (0.9%), respectively. Mean creatinine is 0.6 +/-0.36 mg/dl.

Conclusion:
Low dose induction therapy with rATG can safely reduce maintenance steroid use without significantly altering the rejection risk and maintenance immunosuppression monotherapy can be achieved. The incidence of drug associated complications (hypertension, renal insufficiency) and infection is favorable as compared to historical controls.

Late Breaking Oral Abstracts

Abstract# 182

HEPATIC ARTERY RECONSTRUCTION WITH INFERIOR MESENTERIC ARTERY GRAFT IN PATIENTS WITH HEPATIC TRAUMA AND LIVING DONOR LIVER TRANSPLANT RECIPIENTS. Huseyin Astarcioglu[1], Tarkan Unek[2], Sedat Karademir[3], Ibrahim Astarcioglu[4]. *[1]Surgery, Dokuz Eylul University School of Medicine, Inciralti, Izmir, Turkey; [2]Surgery, Dokuz Eylul University School of Medicine, Inciralti, Izmir, Turkey; [3]Surgery, Dokuz Eylul University School of Medicine, Inciralti, Izmir, Turkey; [4]Surgery, Dokuz Eylul University School of Medicine, Inciralti, Izmir, Turkey.*

BACKGROUND: Need of extension vascular grafts during hepatic arterial reconstruction in liver transplantation era has been challenging. Use of sigmoideal, radial and iliac arteries as well as saphaneous venous grafts has been reported in the literature.

OBJECTIVES: Here we present 8 cases of arterial reconstructions using a segment of autologous inferior mesenteric artery (IMA) under microsurgery. Patients were consisted of 7 living donor liver transplant (LDLT) recipients and one with hepatic trauma.

METHODS: IMA was interposed for reconstruction between the right branch of (donor's) hepatic artery and the root of (recipient's) common hepatic artery in all patients. Among the LDLT recipients extension vascular graft was needed secondary to intimal dissection extending to the root of recipient's common hepatic artery in six and hepatic artery thrombosis (HAT) in 2 another. In the trauma patient, hepatic artery was injured with extensive tissue loss and successful reconstruction was performed in damage control surgery concept.

RESULTS: One recipient was complicated with graft thrombosis on post-op day 7 and underwent immediate retransplantation. In the remaining, after a mean follow-up of 14.8 months (4 to 26 mo), interposition grafts were found patent which was confirmed by either angiography or angio-computer tomography. Liver function tests were normal in all except one patient who revealed mild elevations of alkaline phosphatase and gamma-glutamyl transferase secondary to stenosis at bilioenteric anastomosis which was treated with balloon dilatation.

CONCLUSION: Reconstruction using the arterial extention graft of autologous IMA may be a good option for revascularization of the hepatic artery in liver transplant and trauma patients.

Abstract# 183

A PROSPECTIVE STUDY OF PATIENTS and GRAFT FOLLOW LIVER TRANSPLANTATION – IS THERE A ROLE FOR FATTY LIVERS? Huda M. Noujaim[1], Edna F. Montero[2], Cristiane M. F. Ribeiro[1], Regina Santos[1], Marcelo P. De Miranda[1], Tercio Genzini[1]. *[1]Hepato, Hospital Beneficencia Portuguesa, São Paulo, SP, Brazil; [2]Cirurgia Experimental, UNIFESP, São Paulo, Brazil.*

Introduction - Many options have been developed to increase the cadaveric donors' pool in liver transplant (LTx), one of them is the use of steatotic grafts,despite increased primary non-function (PNF) and delayed graft function and decreased survival rates.

Purpose-To analyze the outcome of patients and grafts using cadaveric steatotic livers.

Methods- Between Jan/03 and Mar/06, 70 cadaveric LTx were prospectively studied. Donors and recipients demographics data, LTx indications, waiting time on list(WTL),cold ischemic time(CIT), hospital stay, reasons of death and regraft (<30days) and patient and graft survival rates were analyzed. All liver biopsies were performed after arterial reperfusion. Steatosis was classified as micro and macrosteatosis, and in mild (<30%), moderate (31-60%) and severe (>60%). The study was divided in 3 groups: GI – no steatosis (n-34), GII – mild steatosis (n-24) and GIII – moderate+severe steatosis (n-9+3).

Results – The results are on table below. Early causes of regraft were in **GI** - graft dysfunction (n-1), **GII** – PNF (n-1) and severe acute rejection (n-1), **GIII** – PNF due by severe steatosis (n-1).And early death occurred in **GI**- sepsis (n-3), **GII**- hemorrhagic shock (n-1) and duodenal ulcer perforation(n-1), **GIII**- hemorrhagic shock (n-1) and sepsis due to initial poor graft function (n-1).

Conclusion- Despite lower survival rates, steatotic grafts should not to be discharge since they represent more them 50% of our available pool. Futures researches must be done to improve results of LTx using steatotic livers.

n=LTx / Patients	GI(34/33)	GII(24/22)	GIII(12/12)	P
DONORS - Age (yrs)	42.5±15	46.5±14	37.5±13	0.1
Body Mass Index	25±2.4	25±3.3	26±2.8	0.2
TGP (U/L)	69±206	41±57	66±48	0.09
Days in ITU	4±3.8	4±5.7	3±1	0.08
RECIPIENTS -Hospital stay (days)	18±54	14.5±11	13±13	0.3
LTx INDICATIONS- end stage liver disease	19 (56%)	15 (62.5%)	8 (67%)	0.8
Cirrhosis and tumor	13 (38%)	6 (25%)	3 (25%)	
Re transplant	1 (3%)	2 (8.3%)		
FHF	1 (3%)	1 (4.2%)	1 (8.3%)	
WTL (days)	430±422	432±480	911±527	0.2
CIT (min)	565±190	600±180	705±156	0.1
Patient Survival(1,3,12mth)	91,91,80	91,82,71	82,73,58	0.3
Graft Survival (1, 3,12mth)	88,85,75	87,83,73	74,64,48	0.2

Abstract# 184

INCREASED MORTALITY AND CARDIAC MORBIDITY AFTER LIVER TRANSPLANTATION IN PATIENTS WITH KNOWN CORONARY ARTERY DISEASE. Daniel A. Diedrich[1], Barry A. Harrison[2], James Y. Findlay[1]. *[1]Anesthesiology and Critical Care Medicine, Mayo Clinic College of Medicine, Rochester, MN, USA; [2]Anesthesiology, Mayo Clinic College of Medicine, Jacksonville, FL, USA.*

Background. Patients with coronary artery disease (CAD) who undergo liver transplantation (LT) have previously been reported as having increased post-transplant morbidity and 50% 3 year mortality. Since that report most programs have taken steps to identify and appropriately risk stratify and manage such patients presenting for transplant. In addition the management of CAD has advanced. With these changes we hypothesized that subsequent outcomes for CAD patients post-LT would be improved. An initial small series was equivocal. Here we present the results of an extended series.

Methods. Following IRB approval we retrospectively identified 32 patients who underwent LT at Mayo Clinic Rochester or Mayo Clinic Jacksonville between 1996 and 2004 who had known CAD (cases). All cases had either prior coronary artery bypass grafting (CABG), percutaneous transarterial coronary angioplasty (PTCA) or angiographic evidence of CAD. Cases were gender, age and liver disease matched with 32 controls without CAD who underwent LT in the same time period. Pretransplant demographics including CAD risk factors were collected. Peri- and post-operative cardiac events (death, new arrhytmia, myocardial infarction (MI) or cardiac intervention) were compared post transplant at 2 weeks, 1 year and 3 years.

Results. Cases were predominantly male (27/32), age 60±5yrs. 21 had prior CABG or PTCA. Pre-transplant case MELD was 14.5±5.7, control 15.6±6. Risk factors were more frequent in cases than in controls. At 2 weeks and 1 year cumulative mortality was not significantly different; at 3 years case mortality was 34%, significantly greater than control (11/32 vs 1/32, P<0.01). Cardiac events were significantly higher in cases at 1 year (9/32 vs 1/32, P=0.01) and 3 years (13/32 vs 1/32, P<0.001). Overall 69% (22/32) of cases suffered either death or new cardiac morbidity within 3 years of LT.

Conclusion. Patients with CAD who undergo LT are at increased risk of death or cardiac morbidity. The risk may be less than previously reported but remains significantly higher than in matched patients without CAD.

Abstract# 185

SPLENIC ARTERY ANEURYSM IN ADULT LIVER TRANSPLANTATION. Jai S. Bagia[1], Bridget K. Gunson[1], Darius F. Mirza[1], John A. Buckels[1], Simon R. Bramhall[1], Stephen J. Wigmore[1], David A. Mayer[1]. *[1]Liver Unit, Queen Elizabeth Hospital, Birmingham, United Kingdom.*

Splenic artery aneurysm is an uncommon occurrence after liver transplantation but associated with high mortality in this patient population.

The aim of this study is to evaluate the presentation, diagnosis subsequent management and outcomes of patients with splenic artery aneurysms after liver transplantation.

A prospectively compiled single centre database was examined from January 1982 to January 2007 to identify the study group of all patients undergoing liver transplant. A total of 2316 liver transplants were done in 2097 patients during this period. 104 split liver grafts and 6 reduced grafts were used and the remainder were whole liver grafts.

During this period 8 patients with splenic artery aneurysms were identified. Median time between transplant and discovery of aneurysm was 90.1 months (range0-225.3months).

In these 8 patients recipient artery used for arterial anastomosis was hepatic artery trunk in 2, common hepatic artery in 2, bifurcation of gastroduodenal artery in 2 and bifurcation of splenic artery in 1 patient. 3 of 8 patients developed late biliary strictures.

Presentations included hypotension and cardiovascular collapse in 4- one of these was during caesarean section. One patient presented with upper gastrointestinal bleeding and splenic artery aneurysm was seen on celiac axis angiography. In another patient diagnosis was incidental during angiography for investigation for hepatic artery thrombosis - this patient had small intrasplenic aneurysms more suggestive of an arteritis. In one patient the aneurysm was discovered on MRCP during investigation of biliary tree and one splenic artery aneurysm was discovered at time of transplantation.

3 patients died within hours after presentation - during surgery or prior to reaching hospital. In the patient where aneurysm was discovered at transplant definitive management was carried out at this time but patient died after a lengthy ITU stay. In one patient no further treatment was necessary for intrasplenic aneurysms. One patient died of cardiovascular co morbidity whilst awaiting elective embolization. Successful splenectomy and splenic artery ligation was carried out in one patient who remains well to date. One patient awaits further management.

This large single center experience suggests splenic artery aneurysms occur infrequently in liver transplant patients. The condition is often lethal with a mortality of 63% in our series.

Abstract# 186

INCIDENCE OF ALLOSENSITIZATION AFTER LIVER TRANSPLANTATION.

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Introduction: There are increasing numbers of patients with renal failure at the time of liver transplantation. Sensitization after liver transplantation adversely affects a patient's likelihood of undergoing subsequent kidney transplantation, but the risk of sensitization is unknown. Our aim was to estimate the frequency of sensitization attributable to liver transplantation. A secondary aim was to compare sensitization after liver transplant alone versus simultaneous liver/kidney transplantation.

Methods: Baseline serum samples were analyzed for the presence of alloantibodies in patients that underwent liver transplant alone (LTA; n=67) and later required kidney transplant (LAK; n=33) or were listed for kidney transplant (Listed; n=34). Since we did not have alloantibody data for patients that were registered for LTA, we included pre- and posttransplant data for patients that underwent simultaneous liver-kidney transplant (SLK; n= 41) so that we could use the SLK pretransplant sensitization data as a control for the LTA group. We compared SLK pre-transplant sensitization to sensitization after either LTA or SLK using the Chi Square test.

Results: 1,626 liver transplants were performed between 7/86 through 7/06. In the LTA group, 22.4% had detectable alloantibody levels when subsequently evaluated for kidney transplantation. In the SLK group, 9.8% were sensitized prior to transplant, and 39% were sensitized after transplant ($p<0.05$). There was a trend towards an increase in sensitization comparing SLK prior to transplant and LTA after transplant (9.8% vs 22.4%, $p=0.06$). Patients that underwent kidney transplant were less sensitized then patient waiting for kidney transplant (15.2 vs. 29.4%; $p>0.05$).

Conclusion: Over 20% of liver transplant patients were found to have alloantibody when evaluated for subsequent kidney transplant. Approximately a fifth of the patients that underwent liver transplant and subsequently required a kidney were found to have alloantibody that may adversely affect their likelihood of receiving a kidney transplant. This finding may affect consideration of SLK for patients awaiting liver transplantation with renal failure. Interestingly, the sensitization rate was even higher for those patients that underwent SLK – a topic for future investigation.

	Pre-Tx Sensitization	Post-Tx Sensitization
LTA (n=67)	n/a	22.4%
KAL (n=33)¡	n/a	15.2%
Listed (n=34)	n/a	29.4%
SLK (n=41)	9.8%	39.0%

Abstract# 187

SPLENIC ARTERY STEAL SYNDROME: REALITY OR MYTH? A CASE REPORT SUGGESTING THE ROLE OF PORTAL HYPERPERFUSION.

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Introduction: Splenic artery steal syndrome (SASS) after orthotopic liver transplantation (OLT) has been thought in certain cases to impair allograft hepatic arterial (HA) flow and may be ameliorated by splenic artery embolization (SAE). We propose an alternative mechanism by which SAE improves HA flow, whereby reduction of portal hyperperfusion leads to improved HA flow via the hepatic artery buffer response (HABR).

Case description: A 68 year-old man with alcoholic cirrhosis underwent cadaveric OLT. Post reperfusion HA and PV flows were 94 cc/min and 3.8 L/min respectively. On post-operative day (POD) #1 duplex showed patent vasculature with HA resistive index (RI) of 0.8. On POD #4, while clinically stable, his transaminases increased. Repeat duplex revealed a RI of 1.0 with no diastolic flow. Despite octreotide infusion, repeat duplex showed reversal of diastolic HA flow with no flow detected in the distal HA branches. Angiography with SAE was performed to decrease portal inflow and ameliorate the exaggerated HABR due to the patient's portal hyperperfusion. Post SAE duplex showed improved flow, reduction of HA RI to 0.6, the renewed presence of diastolic flow in the main artery, and complete visualization of all distal arterial branches. Liver function tests promptly normalized.

Discussion: SAE has been proposed to improve poor hepatic artery flow caused by an inflow steal phenomenon. This case report confirms the usefulness of SAE but suggests a different mechanism than previously postulated. Rather than causing an increase in arterial inflow, SAE works by reducing portal flow and the HABR thereby reducing end-organ outflow resistance. This is confirmed in this case by the reduction of RI from 1.0 to 0.6. If SAE worked primarily through redirection and augmentation of inflow, the RI would increase. Portal hyperperfusion is thought to accelerate adenosine washout from hepatic sinusoids, leading to hepatic arteriolar vasoconstriction and reduced flow. Reduction of excessive PV flow would therefore help reverse this vasoconstrictive response.

Conclusions: 1) SAE optimizes HA flow by reducing HA RI via reduction of the PV inflow. 2) The Splenic Artery Steal phenomenon is a misnomer 3) HA angiogram and SAE is an effective minimally invasive therapeutic approach if pharmacological options aimed at splanchnic flow reduction fail.

Abstract# 188

THE DANGER ASSOCIATING OF PEG-INTERFERON AND RIBAVIRIN WITH MYCOPHENOLATE MOFETIL TO TREAT RECURRENT HEPATITIS IN LIVER TRANSPLANT RECIPIENTS.

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BACKGROUND & AIM: Recurrent hepatitis C virus (HCV) infection occurs in at least 50% of patients in the first year after liver transplantation (OLT) . The current treatment, combining α-2b interferon plus ribavirin (RIBA), achieves sustained viral response (SVR) rates of 17-25 %. The aim of this study was to asses the safety of association of Mycophenolate Mofetil (MMF) and RIBA in a group of OLT patients with recurrent hepatitis C.

MATERIALS & METHODS: 19 OLT patients (age 45-60 years) with biochemical and histological evidence of HCV recurrence participated in the study. All patients were at least 6 months post-transplantation. All were taking PEG α-2b 50-80 µg (s.c. once a wk) plus RIBA 400-800 mg, according to haemoglobin (Hb)levels.10 subjects were receiving cyclosporine (CyA) in a dosage ranging from 75 to 300 mg/day; 9 patients were receiving Tacrolimus (FK506) that varied from 1-11 mg/day. 5 of the patients were also given MMF, 1500 mg/day, in combination therapy (3 with CyA and 2 with FK506). Hb was evaluated every week.

RESULTS: See table.

Within 6 weeks 4 of 5 patients taking MMF showed Hb levels lower than 8g/dl and were hospitalised for bone marrow biopsy and all antiviral drugs and MMF were suspended. Red cell hypoplasia was found in all four. They were given

Deltacortene 25 mg/day for 7 days and erythropoietin 40.000 UI twice a week for 2 mounths wich gave satisfactory results within 3 months. In the fifth patient, whose Hb level was above 9g/dl, suspension of MMF and reduction of RIBA 200 mg allowed progression to sustained viral response discontinued antiviral therapy.

CONCLUSION: Caution is needed in simultaneous use of RIBA and MMF in OLT patients.

TABLE: Haemoglobin levels (Hb g/dl) in OLT patients during antiviral therapy

	CyA	FK506	CyA+MMF	FK506+MMF
Subjects n°	7	7	3	2
Hb g/dl bef. therapy	12,5 ± 1,3	13,1± 0,9	12,7± 1,1	12,9± 1,5
Hb g/dl 3 weeks after	11,1± 0,8	12,6± 1,3	10,1± 1,2	9,8 ± 0,8
Hb g/dl 6 weeks after	10,6 ± 1,1	11,2 ± 0,9	7,2 ± 1,7	6,8 ± 1,4

Abstract# 189

FULMINANT LIVER FAILURE IN MORBID OBESE AFTER BARIATRIC SURGERY. Adávio Oliveira e Silva[1], Verônica V. D. S. Cardozo[1], Betânia S. Rocha[1], Raul C. Wahle[1], Priscila R. Néspoli[1], Evandro O. Souza[1], Francisco L. Dazzi[1], Jorge P. Mancero[1], Frans I. S. Larrea[1], Gilberto Perón, Jr.[1], Marcelo A. F. Ribeiro, Jr.[1], José L. M. Copstein[1], Adriano M. Gonzalez[1], Luiz A. C. D'Albuquerque[1]. *[1]Centro Terapêutico Especializado em Fígado (CETEFI), Hospital Beneficência Portuguesa de São Paulo, São Paulo, SP, Brazil.*

Introduction: Bariatric surgery can induce in morbid obeses the appearance of fulminant liver failure, where the accomplishment of liver transplant is indicated.

Aim: To describe 5 cases of fulminant liver failure in morbid obeses after bariatric surgery.

Material: In the Centro Terapêutico Especializado em Fígado (CETEFI) 5 women with BMIC>40 will be described, 2 treated for the Fobi-Capela's surgery and 3 for the Scopinaro's surgery, with extremities of ages between 21-38 years and MELD varying between 16-38 (Tab.1).

Results: Of the 5 patients, 3 (60%) had been death before the transplant and 2 (40%) had submitted it the liver transplantation whose behavior ahead of the bariatric surgery and evolution after liver transplant express in Tab.2.

Conclusion: Techniques of Fobi-Chapel/Scopinaro are effective for loss of weight but has the inconvenience to associate with serious complications, such as bacterial supergrowth in segment of small intestine deviated resulting in increased production of endotoxinas. When they attend a course with massive mobilization of these molecules reactive from the intraperitoneal fat develops massive hepatocelular necrosis with parenquimal failure, taking the one that is lead by the liver transplant. It is recommendable that those lead by bariatric surgery of the disabisortive type as in Scopinaro's technique, they must carefully be evaluated of the hepatic function, therefore the group suggests that those patients with advanced esteatosis or steatohepatitis with cirrhosis are contraindicated this type of surgery for the high risk of serious post-operative acute liver failury.

Evolution of this patients after bariatric surgery

Patients	Bariatric surgery	MELD	BMI before	BMI after	Loss of weight after bariatric surgery in kg	Evollution to liver failury in months
CV	Scopinaro	38	42	29.9	30	4
GC	Scopinaro	16	63	26	93	4
EA	Fobi-Capela	32	56.1	36.1	60	2
FMO	Fobi-Capela	26	60	37	57	8
KRC	Scopinaro	37	67.6	43.9	70	18

Table 2 Behavior ahead bariatric surgery and evolution after liver transplantation

Patients	Behavior ahead bariatric surgery	Evolution after liver transplantation
CV	Preserved	Death in first month
GC	Undone	Alive

Malignancies

Abstract# 190

TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA IN PATIENTS WITH CHRONIC HEPATITIS C – IS SURVIVAL WORSE THAN WITH HEPATITIS C ALONE? Nicholas Onaca, Edmund Q. Sanchez, Tariq Khan, Dmitriy Nikitin, Srinath Chinnakotla, Linda W. Jennings, Richard Ruiz, Greg J. McKenna, Henry B. Randall, Robert M. Goldstein, Marlon F. Levy, Goran B. Klintmalm. *[1]Transplant Services, Baylor Regional Transplant Institute, Dallas/Fort Worth, TX, USA.*

Hepatitis C (HCV) is the most common indication for liver transplantation (LTX) today. Hepatocellular carcinoma (HCC), which can complicate HCV, is generally considered an adverse factor for survival after LTX. The MELD-based donor liver allocation system gives higher priority to HCC patients than the previous allocation. Therefore, there are concerns related to the outcome of this group of patients.

Our aim was to determine the risk of mortality in patients who underwent LTX for HCV with HCC compared to HCV alone.

1246 primary LTX were performed in adults at a single institution between 1997-2005, 565 of whom had HCV (45.4%) and 119 of the HCV patients had HCC (21.1%). The percentage of HCC in HCV patients transplanted rose from 14.1% before the implementation of the MELD system to 27.5% in the MELD era ($p \leq 0.001$).

Kaplan-Meier survival at 1, 3, and 5 years for HCV with HCC was 94.1%, 85.8%, and 81.3%, compared to 85.6%, 77.8% and 70.7% for HCV alone ($p=0.0262$). There was no difference in survival between the MELD and previous allocation system ($p=0.9661$).

Multivariate analysis of the HCV patients including the presence of HCC, recipient age, gender, and liver allocation system era showed that the absence of HCC constituted an increased risk for mortality, RR= 1.717 (0.95 confidence interval 1.060-2.782) , ($p=0.0263$). All other parameters were not significant.

Kaplan-Meier HCV recurrence-free survival was similar for HCC and non-HCC patients ($p=0.2357$). Recurrent HCV was the cause of death or a major contributor in 3 of the HCC patients (2.5% of patients, 15.8% of mortality cases) and 40 of the patients without HCC (8.9% of patients, 29.6% of mortality cases) ($p \leq 0.025$).

Conclusion: Survival after LTX for HCV with HCC is not inferior than to LTX for HCV alone. Patients with HCV alone are sicker at transplant and might have a more aggressive HCV disease that accounts for the inferior results.

Abstract# 191

LIVER TRANSPLANTATION WITH PANCREATODUODENECTOMY FOR HILAR CHOLANGIOCARCINOMA INVOLVING THE COMMON BILE DUCT IN PATIENTS WITH PRIMARY SCLEROSING CHOLANGITIS. Eduardo J. Ramos[1], Julie K. Heimbach[1], Scott L. Nyberg[1], Michael B. Ishitani[1], Gregory J. Gores[1], Charles B. Rosen[1]. *[1]Transplant Center, Mayo Clinic, Rochester, MN, USA.*

Introduction: Neoadjuvant chemoradiotherapy and orthotopic liver transplantation (OLT) achieves 82% 5 yr. survival for patients with early stage hilar cholangiocarcinoma (CCA) and primary sclerosing cholangitis (PSC). Despite selection of patients with CCA located above the cystic duct, microscopic extension to the common bile duct (CBD) may be found at OLT. We divide the CBD as close as possible to the pancreas, and since 4/1/99, have obtained a frozen section of the margin. When positive, we proceeded with OLT and pancreatoduodenectomy (PD). We reviewed our experience with specific **aims** to determine 1) incidence of CBD involvement for patients with CCA arising in PSC; 2) operative morbidity and mortality; and 3) efficacy. **Methods:** We reviewed all patients with CCA treated with neoadjuvant therapy and liver transplantation between 4/1/99 and 11/1/06. The CBD margin was assessed by frozen section. Those with involvement underwent OLT and PD. **Results:** Six of 43 patients (14%) with CCA and PSC had CCA involvement of the CBD margin. One patient with previously undetected involvement of the gallbladder and dense inflammation precluding PD is alive without detectable CCA 33 months after OLT alone. The other 5 patients underwent combined PD and OLT. PD was performed during OLT for 2 other patients that had undergone choledochoduodenostomy prior to developing CCA. Liver grafts were from 1 living, 1 familial amyloid domino, and 5 deceased donors. Mean transfusion was 3.9±3.7 units, and mean hospital stay was 29±16 days. Complications arose in 4 of 7 (57%) patients: pancreatic leak (3); exocrine insufficiency (2); early (1, required

re-OLT) and late (2, with 1 death at 3 months) hepatic artery thrombosis; and reoperation for bleeding (2). Six of 7 (86%) patients are alive and disease-free 3 months to 7.6 yrs. after combined PD and OLT. **Conclusion:** Despite selection of patients with CCA above the cystic duct, the potential for CBD involvement warrants frozen section examination of the CBD margin for all patients with underlying PSC during OLT for CCA. Although combined pancreatoduodenectomy and liver transplantation has significant morbidity, results with this aggressive approach are excellent and comparable to our results with neoadjuvant chemoradiotherapy and transplantation alone for patients without CBD involvement.

Abstract# 192

PRE-OPERATIVE ABLATION IS BENEFICIAL FOR HCC CANDIDATES WAITING FOR LIVER TRANSPLANTATION.

Richard B. Freeman[1], Robin Ruthazer[1], Anthony Schore[1], Abigail Mithofer[2], Khanh Ngyuen[1], Prakhar Agarwal[1], Ann Harper[3], Erick B. Edwards[3]. *[1]Division of Transplantation, Department of Surgery, Tufts-New England Medical Center, Boston, MA, USA; [2]Division of Gastroenterology/Hepatology, Massachusetts General Hospital, Boston, MA, USA; [3]Research, United Network for Organ Sharing, Richmond, VA, USA.*

Loco-regional ablative therapy (AT) for HCC has been used to limit liver transplant (LT) waiting list drop out rates but has not been examined for down-staging efficacy and post transplant outcomes. We compared histology and post transplant survival results for 552 patients with AT with 736 patients with no AT who were registered with HCC priority on the US LT list. Of the AT group, 292 (52.9%) had TACE, 189 (34.2%) had RFA and 71 (12.9%) had other or multiple ATs a mean of 174 days before transplant with AT types distributed evenly among listing stages and time from treatment to transplant. On histologic examination significantly more patients who received AT had a histologic stage (HS) less advanced than their most recent listing stage (LS) compared with those who did not have AT (P< 0.0001) indicating a significant down-staging effect of AT. Patients treated with TACE were more likely to have down staged tumors (P=0.0202) compared with those treated with RFA. Completely necrotic nodules were more frequently reported with TACE (36.3%) compared with RFA (31.6%), (P=0.0409) but both AT types had no necrosis on 19.9% and 19.5% of cases respectively. We observed a trend toward better 2 year K-M survival after LT for the AT vs no AT group (81% vs 76%, P=0.121) with no difference in survival among AT types (P=0.7853). Patients with AT who had partial or complete responses achieved better 2-year survival compared with no AT 81% vs 71%, P=0.013). We conclude that AT (TACE>RFA) appears to down-stage HCC and that there may be a survival benefit for AT treated patients, especially those with documented necrotic responses, after liver transplantation.

Abstract# 193

LIVER TRANSPLANTATION FOLLOWED BY ADJUVANT HAEMATOPOIETIC STEM CELL TRANSPLANTATION AS TREATMENT FOR ADVANCED PRIMARY LIVER CANCER.

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Background. Allogeneic haematopoietic stem cell transplantation (HSCT) has previously been shown to induce a graft-versus-tumor effect on various solid tumors. We here describe a series of 8 patients with advanced primary liver cncer (aPLC), treated with adjuvant HSCT following liver transplantation (LT).

Methods. Between June 2001 and June 2006, 6 patients with hepatocellular cancer (HCC) and 2 patients with cholangiocarcinoma (CC) were accepted for the procedure. Inclusion criteria for the HCC patients were a total tumor size > 10 cm or a tumor that consisted of > 3 foci. For patients with CC, the tumor had to be unresectable and confined to the liver. The recipient should have access to a suitable stem cell donor, either an HLA-identical sibling or an HLA-matched unrelated donor (MUD; n=3). All LTs were performed with HLA-mismatched liver grafts. The HSCTs were performed with a reduced intense conditioning regimen (fludarabine 30mg/m2 x V and cyclophosphamide 60mg/kg x II), 4-14 weeks after LT. The group of patients were compared to a historical group of patients with similar tumor characteristics, treated with LT alone

Results. One patient rejected the stem cell graft. Acute graft-versus-host disease (GVHD) grade I and II developed in 1 and 3 patients, respectively. The 3-year recurrence rate was 14 % in the LT+HSCT group compared to 78% in the LT alone group (p = 0.022). Two HCC-patients are currently alive without recurrence, with a follow-up of 45 and 27 months, respectively. One CC-patient is alive with a follow up of 47 months, however with diagnosed recurrence at 42 months post LT. The actuarial 3-year overall survival in the LT+HSCT group is 38 %, compared to 13% in the historical LT-alone group (p=0.412).

Conclusion. Combined LT and HSCT is a feasible procedure but has some added transplant related morbidity compared to LT alone. Consequently, a significant positive effect on survival can not yet be shown in the LT+HSCT group. Further experience is needed to evaluate the potential anti-tumor effect by the adjuvant HSCT, but a lower recurrence rate was demonstrated in the LT+HSCT group when compared to historical controls.

Abstract# 194

LIVER TRANSPLANTATION WITH A PARTIAL GRAFT IS A RISK FACTOR FOR *DE NOVO* TUMORS AFTER TRANSPLANT IN THE ADULT POPULATION.

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Immunosuppressive therapy exposes liver transplant recipients to an increased incidence of *de novo* tumors (DNT). Recognized risk factors for developing DNT after transplant include: older recipient age, longer duration of immunosuppression, cause of liver disease such as alcohol and primary sclerosing cholangitis. Little is known about the incidence of DNT in adult patients who received a partial graft. Indeed, hepatic regeneration induced by the transplant of a partial liver is mediated mainly by the HGF-*c*-Met axis, but other growth factors such as TGFα, EGF, urokinase, TNFα, IL6, noradrenalin and insulin are also involved, creating a humoral milieu potentially favourable to the development of DNT.

The incidence of DNT in a population of adult liver transplant recipients was assessed according to the type of graft: whole liver (WL) vs partial liver (PL). Between October 1990 and June 2006, 1263 adult recipients with a minimum follow-up of 69 days after transplant (time limit at which the first DNT was diagnosed in the whole series) underwent 1358 liver transplants; 1205 of them had a WL, while 58 had a PL (split=45, reduced=2, living donor=11). WL and PL groups were similar for gender, recipient and donor age, cause of underlying liver disease, Child-Pugh class, intraoperative transfusions, primary immunosuppression, rejection episodes, rejection treatments. Follow-up was significantly shorter in PL (median: 757 days) than in WL (median: 1702 days) due to the fact that the split liver program was implemented in more recent years. Despite that, the incidence of DNT in the PL group was nearly double than in the WL group (12.3% vs 6.8%; p=0.056), with a disease free interval between transplant and DNT diagnosis much shorter in the PL than in the WL group (179 days vs 1116 days; p=0.002). Even though overall 5-year actuarial survival did not significantly differ in the two groups (WL=84%, PL=78%), patients who developed DNT in the PL group had a much worse survival than the patients who developed DNT in the WL group (5-year actuarial: PL=27%, WL=69%, p=0.001; median survival time: PL=470 days, WL=1363 days, p=0.01).

Liver transplantation with a partial graft bears the risk of an increased incidence, earlier appearance and higher aggressiveness of DNT after transplant. Such knowledge should prone to a more strict neoplastic surveillance in recipients who have received a PL.

Abstract# 195

OUTCOME OF LIVER TRANSPLANTATION FOR HCC BEYOND CONVENTIONAL CRITERIA: PRELIMINARY REPORT OF THE "METROTICKET" SURVEY.

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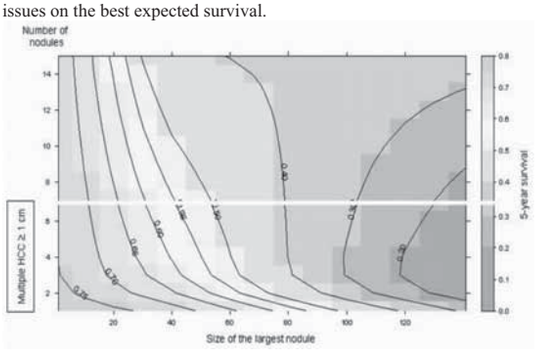
Liver transplantation (LT) is the best therapeutic option available for hepatocellular carcinoma (HCC) although limited by graft shortage. 5-yr survival of 75% can be obtained selecting patients according to Conventional Milan Criteria (CMC). Aim of the study was to explore the territory outside CMC and to define new categories of patients with an intermediate risk of HCC recurrence.

A multicentric web-based survey was conducted in 24 Centers worldwide collecting 466 patients transplanted for HCCs not meeting CMC at post-transplant pathology. Data collection included size and number of HCCs, presence of vascular invasion, tumor grading and cirrhosis, follow-up data and HCC recurrence, if present. Results were plotted in a size/number Cartesian plane including patient outcome on the basis of tumor stage/survival relationship, taken as continuous variables. Effect of size and number of nodules on survival, as well as influence of vascular invasion and grading, were estimated by means of a Cox model.

Median size of the largest lesion was 40 mm, with a median number of 4 lesions/patient. Vascular invasion and G3HCCs were present in 41% and 26% of pts, respectively. After a median f-up of 51 months, 5-yr survival was 39%. Covariate analysis showed a linear correlation between size, number of nodules (up to 4) and risk of recurrence. Multivariate analysis identified vascular invasion and size >50 mm as independent prognostic factors.

Plotting of data in a size/number chart allowed to design a contour plot (HCC Forecast Chart) helpful in designing future studies on expansion of CMC. Important variables can be adopted in this model such as priority score for HCC, drop-out rate and donor availability in different Centers, ethical/social issues on the best expected survival.



Abstract# 196

TOTAL TUMOR VOLUME IMPROVES PRETRANSPLANT SELECTION OF PATIENTS WITH HEPATOCELLULAR CARCINOMA: A TWO CENTER STUDY. Christian Toso[1], Alice Wei[2], David L. Bigam[1], Shimul Shah[2], James A. M. Shapiro[1], Norman M. Kneteman[1]. *[1]Department of Surgery, University of Alberta, Edmonton, AB, Canada; [2]Department of Surgery, University of Toronto, Toronto, ON, Canada.*

The effectiveness of existing pre-transplant selection criteria for selection of patients with hepatocellular carcinoma (HCC) has been challenged by the low accuracy of radiological assessment, which is only 40 to 60%.

Total Tumor Volume (TTV) was calculated by adding the volume of each individual tumor. A preliminary analysis was carried out in a series of 52 patients from the Alberta Liver Transplant Program (Alberta) and then validated in a group of 154 patients from the University of Toronto program (Toronto).

A TTV cut-off of 115 cm^3 was chosen based on the risk of recurrence with use of a ROC curve. Radiology correlated more closely to pathology with TTV than with Milan and UCSF criteria (92 vs 69 and 78% of patients, $p < 0.0001$). While more patients were qualified for transplant with TTV, similar rates of recurrence and tumor-free survival were achieved with TTV 115 cm^3, Milan and UCSF classifications at both institutions. Patients with TTV >115 cm^3, experienced significantly more recurrences in the Alberta series ($p < 0.001$).

Using the Total Tumor Volume staging, with a cut-off of 115 cm^3, the accuracy of pretransplant radiological assessment is enhanced considerably, with post-transplant outcomes similar to those achieved with Milan and UCSF classifications.

Abstract# 197

LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA IN NON-CIRRHOTIC LIVERS. Hynek Mergental[1], Rene Adam[2], Piotr Kalicinski[3], Bo-Göran Ericzon[4], Styrbjorn Friman[5], Alfred Köningsrainer[6], Bart van Hoek[7], Robert J. Porte[1], the European Liver and Intestine Transplant Association (ELITA). *[1]Liver Transplantation and HPB Surgery, UMCG, Groningen, Netherlands; [2]Centre Hepatobiliaire, Hôpital Paul Brousse, Villejuif, France; [3]Pediatric Surgery and Organ Transplantation, Children's Memorial Health Institute, Warsaw, Poland; [4]Transplantation Surgery, Karolinska University Hospital, Stockholm, Sweden; [5]Transplantation and Liver Surgery, Sahlgrenska University Hospital, Goteborg, Sweden; [6]General, Visceral and Transplant Surgery, Universitatsklinik, Tubingen, Germany; [7]Gastroenterology, LUMC, Leiden, Netherlands.*

Background: Partial liver resection is the treatment of choice for hepatocellular carcinoma in non-fibrotic and non-cirrhotic livers (NC-HCC). The role of LT in these patients is unclear. It is also unknown whether the internationally accepted criteria for HCC in cirrhotic livers (Milan criteria) are also applicable to NC-HCC.

Methods: Using the European Liver Transplant Registry (ELTR), we identified 91 patients who underwent LT for NC-HCC between 1995 and 2005. In 46 patients LT was used as rescue therapy for intrahepatic recurrence after previous partial liver resection. In 45 patients LT was the primary therapy and these patients were analyzed here. The impact of patient and tumor characteristics on 5-year survival was analyzed using Kaplan-Meier and multivariate Cox regression analyses.

Results: Male / female ratio was 22/23. Mean (range) age was 36 yr (4-65 yrs). Mean tumor size was 11.4 cm (2.2-30.0). Multifocal HCC was present in 58%, vascular invasion in 49%. Overall 1-, 3-, and 5-year patient survival rates were 86%, 71%, and 46%, resp. Interestingly, survival was not affected by tumor size up to 10 cm. Five-year survival was 69% in patients with HCC $\leq$ 10 cm and 25% for HCC > 10 cm ($p=0.02$). Other variables significantly associated with reduced 5-year survival were: macro- and microvascular invasion, and intraoperative red blood cell (RBC) requirement. After multivariate analysis, the only independent predictors of 5-year survival were: mircovascular invasion (HR 5.40; 95%CI 1.03-28.24, $p=0.046$) and RBC transfusion (HR 1.18; 95%CI 1.03-1.35, $p=0.012$).

Conclusion: This is the largest reported series of patients undergoing LT as primary therapy for irresectable NC-HCC. The Milan criteria are not a good predictor of posttransplant survival in these patients. Overall 5-year survival in patients with tumor size up to 10 cm is 69%.

Abstract# 198

MONITORING HEPATOCELLULAR CARCINOMA WITH ANGIOGENESIS SOLUBLE FACTORS. Valeria R. Mas, Robert A. Fisher, Yanek Kenneth, Kellie Archer, Marc P. Posner, Daniel G. Maluf. *[1]Hume-Lee Tx Center, Virginia Commonwealth University, Richmond, VA, USA.*

Background. Physiological hepatic angiogenesis (Ang) occurs during liver regeneration, leading to the formation of new functional sinusoids. Pathological Ang occurs in hepatocellular carcinoma (HCC). In the present study we aimed to evaluate the expression of Ang factors in HCV-HCC tissues and the utility of Ang soluble factors as non-invasive markers of HCC and tumor growth.

Patients and Methods. 38 HCV-HCC tumor tissues (2 T1N0M0, 17 T2N0M0, and 19 T3N0M0), 42 HCV cirrhotic and 6 normal liver (NL) were studied using high-density oligonucleotide arrays. The robust-multiarray average method was used to estimate probe set (Pset) expression summaries. The significance analysis of microarrays method was used to identify Pset differentially expressed while controlling for the false discovery rate (FDR). Human Ang Microarray was used for the protein detection of the following soluble angiogenic factors: EGF; TIMP-1; TIMP-2; HGF; Angiopn-1; Angiopn-2; VEGF-A; IP-10; PDGF; KGF; Angiogenin; VEGF-D; ICAM-1; FGF in 20 patients (15 HCCs and 5 HCV cirrhotic patients). It is an antibody array kit where each slide contains sixteen identical arrays of 14 capture antibodies in quadruplicate. The antibody pairs bind the antigen in a sandwich format. Array detection is achieved with the addition of either Streptavidin-Cy5 for fluorescent signals. Positive and negative controls spotted within each array allow for assay validation.

Results. Analysis of the HCV-HCC tumors compared to NL we found an important number of genes related to Ang differentially expressed (a=0.01) including VGEF, PDGF, AGPTL2, ANG, EGFL6, EGFR, ANGPT1, ANGPT2, ICAM5, ICAM2, TIMP-2, among others. There were Ang genes differentially expressed also when HCV-HCC samples were compared with HCV cirrhotic tissues (a=0.01) (VGEF, EGFL3, EGFR, VEGFB, among others). From the analysis of the protein detection assay in plasma samples using the Ang microarray we observed that the levels of IP-10 (P=0.032), EGF (P=0.05), ICAM (P=0.01), KGF (P=0.052) were statistically significant different between HCV-HCC and HCV plasma samples. We also observed that the levels of Angiopn-2 was related to size of the tumor (P=0.02).
Conclusion. Angiogenesis is an important mechanism involved in HCC. Differentially expressed genes were observed between HCV patients with and without HCC. Soluble angiogenic factors might be useful for monitoring high risk HCV patients.

Poster Session II

Abstract# 199 Poster Board #-Session: P1-II

ACUTE HYPOTENSIVE TRANSFUSION REACTION DURING LIVER TRANSPLANTATION IN A PATIENT ON ACE INHIBITORS. Cataldo Doria[1], Elia S. Elia[2], Yoogoo Kang[2], Albert Adam[3], Carlo Ramirez[1], Frank Adam[1], Fabrizio DiFrancesco[1], Jay H. Herman[4]. *[1]Transplantation, Thomas Jefferson University Hospital, Philadelphia, PA, USA; [2]Anesthesiology, Thomas Jefferson University Hospital, Philadelphia, PA, USA; [3]Pathology, McMaster University, Hamilton, ON, Canada; [4]Blood Bank, Thomas Jefferson University Hospital, Philadelphia, PA, USA.*

Acute Hypotension Transfusion Reactions are characterized by early and abrupt onset of hypotension associated with blood transfusion, and hypotension typically resolves quickly once the transfusion is stopped [1]. Normaly, surface activation of factor XII during blood product preparartion produces bradykinin(BK). ACE is responsible for 75% of BK inactivation, aminopeptidase(APP) for 20% and carboxypeptidase N (CPN) for the remainder BK. CPN transforms BK into its vasoactive metabolite Des-Arg^9-BK, which in turn is inactivated by both ACE and APP. Therefore in the presence of ACE inhibition or abnormal polymorphisms of APP or ACE, larger quantity of BK and biologicaly active des-Arg^9-BK accumulate to trigger severe hypotension by stimulation of bradykinin receptors (B2 and B1, respectively) [2].
Case Report: 54 year-old male underwent liver transplantation for alcoholic cirrhosis. The patient had been on an ACE inhibitor (lisinopril) and amlodipine for primary hypertension, and spironolactone and furosemide for fluid retention. Preparation and anesthesia care followed the standard care of the institution. During hilar dissection of the liver, the patient was given 500 ml of blood mixture (RBC:FFP:Plasmalyte=300:200:250mL) to correct hypovolemia. He suddenly developed hypotension to systolic pressure of 60 mmHg and flushing of face. The hypotension resolved gradually in the next 10-15 min with incremental use of epinephrine (total 200 mcg) and discontinuation of transfusion. This episode recurred on two blood transfusion challenges (300 mL), and the procedure was aborted to avoid hypovolemic fatal outcome.
Significance: Based on the fact that most liver transplantation requires blood transfusions, it is recommended to discontinue ACE inhibitor preoperatively to avoid severe hypotensive reaction.
1. Bruno DS. Acute Hypotensive Transfusion Reactions, Lab Med. 2006;37(9):542-545
2. Quillen K. *Hypotensive transfusion reactions in patients taking angiotensin-converting-enzyme inhibitors.* N Engl J Med. 2000 Nov 9;343(19):1422-3.

Abstract# 200 Poster Board #-Session: P2-II

PREDICTORS OF 1-YEAR MORTALITY FOLLOWING ORTHOTOPIC LIVER TRANSPLANTATION. Denis Gustin[1], Mladen Knotek[2], Branislav Kocman[3], Stipislav Jadrijevic[3], Maida Buhin[1]. *[1]Dept. of Anesthesiology and Intensive Care Medicine, Univ. Hospital "Merkur", Zagreb, Croatia; [2]Dept. of Internal Medicine, Univ. Hospital "Merkur", Zagreb, Croatia; [3]Dept. of Surgery, Univ. Hospital "Merkur", Zagreb, Croatia.*

Introduction: Kidney injury (KI) is common complication after orthotopic liver transplantation (OLT), frequently requireing renal replacement therapy (RRT). The aim of thestudy was to analyze the impact of KI on the outcome of OLT and to identify independent predictors of the postoperative KI and 1-year mortality after OLT.
Methods: 150 pts who had 158 OLTs (8 reTX) between 1999 and 2006 were retrospectively analyzed. Patiens who underwent combined liver+kidney, liver after kidney Tx and who died in the first 72h, were excluded. Patient age, gender, etiology of liver disease, body mass index, presence of diabetes, preoperative creatinine level, highest creatinine level within 15 days after OLT, creatinine level >250 µmol/L, need for RRT, UNOS status, cold ishaemia time and intraoperative blood requirements were included in analysis. KI was defined arbitrarily as highest serum creatinine >125µmol/l within 15 days following OLT. Patient survival rate was calculated using Kaplan-Meier statistics. Risk factors for development of KI following OLT were assessed by the logistic regression, while predictors of 1-year mortality were analyzed by the proportional hazard regression model.
Results: Overall 1-year survival rate was 85,8%. The incidence of KI was 51,6%. KI was seen more commonly in patients who died (95,5%) than in survivors (44,4%). Survival rate with and without KI was 73,4% and 98,7%, respectively. The patients who had severe KI (creatinine >250 µmol/L), or were treated with continuous renal replacement therapy (CRRT) had significantly lower 1-year survival rate than patients with KI without CRRT (38,9% vs. 91,8%; p<0.001). Multivariate logistic regression analysis revealed UNOS status (p<0.001), higher pretransplant creatinine (p<0.001) and sepsis (p<0.05) as independent risk factors for development of KI. Regarding survival, Cox proportional hazards model showed that higher pretransplant creatinine (p<0.01), postOLT creatinine >250 µmol/L (p<0,01), postOLT CRRT (p<0.001) and graft dysfunction (p<0.001were associated with worse outcome.
Conclusion: The incidence of KI in the early period following OLT is high and is associated with lower 1-year survival rate. Early severe KI and CRRT were found to be risk factors for worse survival outcome.

Abstract# 201 Poster Board #-Session: P3-II

SHOULD LIVER TRANSPLANT PATIENTS BE EXTUBATED IMMEDIATELY IN THE OPERATING ROOM OR IN THEIR ICU STAY? Edie Chan[1], Adam Levy[1], Gregory Dembo[2], Kenneth Martay[2], Jorge Reyes[1], James Perkins[1], Youri Vater[2]. *[1]Dept of Surgery, Univ of Washington, Seattle, WA, USA; [2]Dept of Anesthesiology, Univ of Washington, Seattle, WA, USA.*

Background: There are numerous reports of successful immediate endotracheal extubations without increased morbidity or mortality after liver transplantation (OLT). We analyzed our liver transplant recipients to determine factors predictive of early extubation and then compared the patients' course with immediate extubation in the OR versus early extubation in the ICU.
Methods: A retrospective review of liver transplant recipients from January 2004 through December 2004 was performed. Patients were categorized into three groups based on: immediate extubation (Group I), early extubation within 12 hours of transplantation (Group II), or extubation >12 hours after transplantation (Group III). Recipient and donor factors were reviewed. Post-operative outcomes were then compared among the groups.
Results: The calculated MELD score was the only significant (p=0.02) predictor of immediate or early extubation (16.4 ± 0.8 SEM) when compared to late extubation (21.2 +/- 2.4 SEM). Recipient age, diagnosis, BMI, donor age, ECD, and % graft steatosis were not predictive of the timing for extubations. There was no difference in Group I vs. Group II in terms of ICU stay (41.1 hours ± 69.2 vs. 45.2 ± 24.2), reintubation rate (4 of 35 vs. 1 of 36), length of hospitalization (11.5 days ± 6.9 vs. 12.1 ± 9.9), and infectious complications (11 of 36 vs. 6 of 36). For Group III (patients exubated after 12 hours) their ICU stay of 134.2 hours ± 174.5 (p=0.01), length of hospitalization of 27.9 days ± 23.4 (p=0.01) and infectious complications in 11 of 17 patients (p=0.001) were significantly higher than the other 2 groups. The overall survival and liver function tests were not significantly different between any group.

Conclusions: A lower MELD score is predictive of healthier patients that can be successfully extubated early following liver transplantation. Sicker patients with higher MELD scores cannot be extubated early and have longer ICU stays, longer hospitalizations and increased infectious complications. There is no difference in outcomes between patients with immediate endotracheal extubation in the OR or patients extubated within 12 hours in the ICU following liver transplantation.

Abstract# 202 Poster Board #-Session: P4-II

NEUROLOGICAL COMPLICATIONS IN LIVER TRANSPLANTATION: A 5-YEAR REVIEW. Ana C. Gonzalez[1], Joyce Roma[1], Ivan Zynger[1], Grace K. Paranhos[1], Marcia Halpern[1], Marcelo Enne[1], Lucio Pacheco[1], Elizabeth Balbi[1]. *[1]Liver Transplant Unit, Bonsucesso General Hospital, Rio de Janeiro, Brazil.*

Introduction: Neurological impairment in cirrhotic patients before liver transplantation (LT) is common and neurological complications after LT are a major source of morbidity and mortality. The diagnosis and management are difficult, and data regarding prevalence of these complications are lacking.

Methods: A retrospective study involving 204 patients (161 adults and 43 children) who underwent LT between Nov/01 and Nov/06,was done. 33 adults (group 1) and 11 children (group 2) with major or minor neurological problems were selected . The group 1 mean age was 49,8 years and in group 2, it was 42 months. The predominant etiologies among patients in group 1 were hepatitis C (45,5%,15 patients), criptogenic cirrhosis, hepatitis B and amiloidotic familial polineuropathy (9%, 3 patients each), fulminant hepatitis (6%,2 patients). In group 2, etiologies were biliary atresia (54%, 6 patients), fulminant hepatitis (27%, 3 patients), a1-antitrypsine deficiency and ductopenic syndrome (9%, 1 patient each). Commonly encountered problems in each group were analyzed separately and data were compared.

Results: The overall prevalence of neurologic problems among pediatric and adult patients was 21,6%. Among the major neurologic complications developed in group 1, there were seizures (18%), myopathy (9%), polineuropathy(6%), mononeuropathy(6%), and ischemic stroke (6%), pontine myelinolysis (3%). Minor neurologic complications found in group 1 were tremor (42%), headache (18%), parestesias (9%), insomnia (6%), and behavioural disorders(6%). Death was the outcome in 27,3% of cases (9 patients). In group 2, 45% developed metabolic encephalopath, 36% seizures, 18% meningitis and 18% hemorrhagic stroke. We found a higher prevalence of death in this group, 77,7% . A direct relationship between neurotoxicity and calcineurin inhibitors serum level could not be established.

Conclusion: The adult and pediatric groups studied differed in many aspects, including etiology of liver disease, neurologic problem presented and outcomes. Children seem to be at greater risk when developing a neurological problem, and carry greater mortality. To find the underlying cause of the neurologic dysfunction and to prevent permanent impairment or death require timely evaluation, diagnostic acuity , and a multidisciplinary approach to these patients.

Abstract# 203 Poster Board #-Session: P5-II

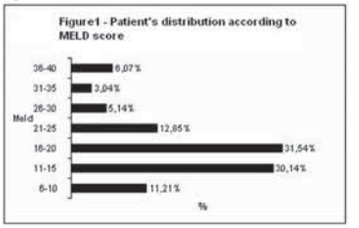
INTRAOPERATIVE TRANSFUSION REQUIREMENTS IS AFFECTED BY PREOPERATIVE MELD SCORE DURING ORTHOTOPIC LIVER TRANSPLANTATION. Flavio Takaoka[1], Alexandre Teruya[1], Isabella S. Pereira[1], Sergio Mies[2], Alexandre P. Oliveira[1]. *[1]Anesthesiology, Hospital Israelita Albert Einstein, Sao Paulo, SP, Brazil; [2]Transplantation, Hospital Israelita Albert Einstein, Sao Paulo, SP, Brazil.*

Introduction: Recent change in organ allocation

Recent change in organ allocation for liver transplant (LT) in Brazil prioritizing the most ill patients may impact perioperative care and cost. Blood transfusion requirements were compared with preoperative MELD score in patients undergoing LT.

Methods: We retrospectively reviewed 428 records of LT performed between January 2002 and March 2006 in our Institution. Patients were separated according to preoperative MELD score in the following group range: 16-20, 21-25, 26-30, 31-35 and 36-40.

Results: Patients' distribution according to MELD score is shown on figure 1.



Blood components transfusion comparison is shown on table 1.

Intraoperative Transfusion Requirements and MELD score

MELD score range	16-20	21-25	26-30	31-35	36-40	p
PRBC (median U)	1	1	3	4	5	<0.05
FFP (median U)	0	3	4	4	5	<0.05
Plat (median U)	0	0	0	0	0	NS
Cryo (median U)	0	0	0	0	0	NS

PRBC: packed red blood cell; FFP: fresh frozen plasma; Plat: platelets; Cryo: cryoprecipitate

Transfusion requirements were significant higher for PRBC, FFP and Plats for groups 16-20, 21-25, 26-30, 31-35 and 36-40 with increasing MELD score.

Discussion: Our retrospective data analysis demonstrated a significant increase in transfusion requirements (PRBC and FFP) for patients with higher pretransplant MELD scores. It is also shown that in the pre-MELD era, most of the patients received a LT with MELD scores lower than 25.

Conclusion:

These retrospective study suggest that pretransplant MELD score may provide important information for perioperative management as well as resource allocation, i.e. transfusion requirements, during LT.

References: Xia, V; Du, B *et al.* Preoperative Characteristics and Intraoperative Transfusion and Vasopressor Requirements in Patients With Low Vs. High MELD Scores. Liver Transplantation 12:614-620, 2006.

Abstract# 204 Poster Board #-Session: P6-II

PUMONARY INFECTIONS IN CADAVERIC AND LIVING RELATED LIVER TRANSPLANT PATIENTS. Fuat H. Saner[1], Goran Pavlakovic[2], Georgios C. Sotiropoulos[1], Silvio Nadalin[1], Andreas Paul[1], Massimo Malagó[1], Broelsch E. Christoph[1]. *[1]General-, Visceral- and Transplant Surgery, University Essen, Essen, NRW, Germany; [2]Anesthesia, Emergency, Intensive Care, University Goettingen, Goettingen, Niedersachsen, Germany.*

Pulmonary infections are a significant cause of morbidity after liver transplantation: Gram-negative bacilli, cytomegalovirus (CMV), and Pneumocystis carinii (P.carinii) were the usual pulmonary pathogens in the earlier studies in liver transplant recipients.

From March 2001 to January 2005 228 liver transplant patients (LT) (55 of them with living donor (LDLT)) were admitted to our ICU.

We retrospectively assessed the etiology and microbial patterns of pulmonary infiltrates in living related transplant patients in comparison with cadaver liver recipients.

14.5 % of LDLT group experienced pneumonia; 62.5 % of the pneumonia were bacterial, 12.5 % were fungal 12.5% One patient in the LDLT group hsuffered from legionella; CMV was isolated in the BAL in two patients and one patient had P carinii pneumonia.

In the cadaveric group 5.2 % of the patients developed pneumonia, 62.5 % of the pneumonia were bacterial, 37.5 % was fungal.

The bacterial pulmonary infections were mainly caused by gram negative bacilli in both groups, but one in the LDLT group, which as caused by methicillin resistant staphylococcus aureus.

In both groups mortality was significantly higher for patients with pneumonia than for patients without pneumonia (13 % vs 58%, $p < 0.05$) in the first year.

P carinii and CMV pneumonia does not play a major role during the early post transplant time. During the first 4 weeks after transplantation the main cause for pulmonary infections in both groups were gram negative bacilli, like pseudomonas, enterobacter, acinetobacter and E. coli.

Abstract# 205 Poster Board #-Session: P7-II

AMBIENT OPERATING ROOM TEMPERATURE VS THE CoolHeat™ OPERATING TABLE WARMING MATTRESS: COMPARISON OF THE CORE BODY TEMPERATURES IN PATIENTS UNDERGOING ORTHOTOPIC LIVER TRANSPLANTATIONS. Youri Vater, Greg Dembo, Kenneth Martay, Alex Vitin. *[1]Department of Anesthesiology, University of Washington School of Medicine, Seattle, WA, USA.*

Introduction:

During orthotopic liver transplantations the already abnormal blood clotting parameters in patients with end stage liver disease can further deteriorate with hypothermia.1 This study analyzed the effects that the CoolHeat™ operating table warming mattress has on the core body temperature in patients undergoing orthotopic liver transplantations.

Methods:

After permission by the Human Subjects Division was granted, the core body temperatures of 56 randomized patients undergoing orthotopic liver transplantations were analyzed (Table 1).

Results:

The demographic data in both study groups are similar. To keep the mean core body temperature in all patients at 36.2ºC, the operating room temperature in the CoolHeat™ patient group could be lowered by 0.6ºC–2.7ºC compared to the patient group warmed by ambient operating room temperature alone.

Discussion:

Because of the large incision required for surgical access during orthotopic liver transplantations, heating blankets can cover only a small part of the body. This is often insufficient to keep the patient's core body temperature at a physiological level so that the ambient operating room temperature has to be increased. The CoolHeat™ operating table warming mattress with its unique safety features allowed for lower operating room temperatures while maintaining physiological core body temperatures in patients undergoing orthotopic liver transplantations.

Abstract# 206 Poster Board #-Session: P8-II

THE AUDITORY EVOKED POTENTIALS USAGE IN DEPTH OF ANESTHESIA MONITORING DURING ORTHOTROPIC LIVER TRANSPLANTATION. PRELIMINARY RAPPORT. Janusz Trzebicki[1], Marcin Kolacz[1], Lidia Jureczko[1], Beata Blaszczyk[1], Marek Pacholczyk[2], Andrzej Chmura[2], Beata Lagiewska[2], Leszek Adadynski[2], Gajusz Gontarczyk[2], Wojciech Lisik[2], Ewa Mayzner-Zawadzka[1]. *[1]Anaesthesiology and Intensive Care, Medical University, Warsaw, Poland; [2]General and Transplantation Surgery, Medical University, Warsaw, Poland.*

Background.

One of the latest continues consciousness state monitoring methods during general anaesthesia is auditory evoked potentials (AEP) rejestration in the AAI (A-line Arx Index) scale. In the accessible references there is no rapport of AEP use during ortothopic liver transplantation (OLT).

Patients and methods.

51 patients (19-64 years old, Child-Pugh B7-C14) qualified to OLT. Consciousness level measurement with AEP (AEP monitor/2 version 1, 61, Danmeter A/S, Denmark) was started before the anaesthesia. Sedation was performed with propofol TCI (Target controlled infusion) 1-3mcg/ml and analgesia with fentanyl IVor bupivacaine with fentanyl epiduraly. We evaluated: consciousness level from 60 (awaken) to 0 AAI (for required surgical anaesthesia level we adopted 15-25 and above 40 AAI was considered as return of consciousness), muscular tone and electrocoagulation influence on AAI. After surgery patients were asked about their memory of intraoperative events. The difficulties with AEP monitor/2 usage were evaluated.

Results

In all patients before the anaesthesia the consciousness level above 50 were stated.

The AAI correlated with clinical depth of anaesthesia evaluation and enable to reduce propofol dosage and periodically stop the propofol infusion at all.

The interdependence upon AAI elevation and muscular strength return or electrocoagulation during abdominal wall dissection was stated. In all patients the consciousness return based on AAI was adequate to clinical evaluation. Non patients remember intraoperative period. There were no problems with AEP Monitor/2 use.

Conclusions:

1. The depth of anaesthesia monitoring during OLT enables to decrease propofol dosage.
2. The muscular action and electrocoagulation creates changes in AAI reading.
3. The adequate AAI level secures intraoperative amnesia.
4. AEP Monitor/2 is easy to use.

Abstract# 207 Poster Board #-Session: P9-II

DO LEVELS OF AST OR ALT IMMEDIATELY AFTER THE LIVER TRANSPLANT AFFECT PATIENT OUTCOME? Dirk Schreen[1], João Batista Marinho[1], Cyntia F. G. Viana[1], Fernanda Paula Cavalcante[1], Tarciso Daniel S. Rocha[1], José Huygens P. Garcia[1]. *[1]Surgery - Liver Transplant, Federal University of Ceará, Fortaleza, Brazil.*

The aim of this study was to verify the correlation of elevated levels of AST and ALT immediately after admission of the patients to the intensive care unit following liver transplant, with their outcome.

We analyzed data of sixty-three consecutive adult patients submitted to orthotopic liver transplantation in our institution. Levels of AST and ALT collected immediately after admission to the intensive care unit were correlated to the development of liver dysfunction (increase in INR above 3.0, serum bilirrubin above 1.5mg/dL), primary graft nonfunction (persistent coagulopathy, increasing hyperbilirubinemia, persistent high levels of transaminases, associated with altered mental status, acidosis, hypoglicemia, haemodynamic instability, or other signals or symptoms indicating severe liver dysfunction and even the need of retransplant), renal dysfunction (serum creatinine above 1.6mg/dL), the need of dialysis or retransplant, or evolution to death. We considered acceptable AST or ALT levels on the first postoperative dosage under 600 IU/L. Higher levels than these were considered as risk factor for the development of the mentioned dysfunctions.

Higher levels of AST were associated with increased, although not significantly, levels of bilirrubin (RR=1.64, 95%CI= 0.9-2.9) and INR (RR=1.5, 95%CI=0.2-10.1), while higher levels of ALT were associated with increased, yet also not significantly, levels of creatinine 6 months after the transplant (RR=2.1, 95%CI=0.4-8.8) and INR (RR=1.98, 95%CI=0.6-6.4).

We concluded that levels of AST and ALT above 600 IU/L immediately after the liver transplant not necessarily presuppose a bad evolution of the patient regarding liver or renal function.

Relative Risk of Liver or Renal Dysfunction for AST or ALT higher than 600IU/L

AST	Relative Risk	CI 95%	ALT	Relative Risk	CI 95%
Bilir > 1.5mg/dL	1.6	0.9-2.9	Bilir > 1.5mg/dL	1.1	0.8-1.5
INR >3.0	1.5	0.2-10.1	INR >3.0	1.98	0.6-6.4
Crea >1.6mg/dL - first days	0.8	0.5-1.5	Crea >1.6mg/dL - first days	1.1	0.7-1.7
Crea >1.6mg/dL 6months	0.6	0.1-2.7	Crea >1.6mg/dL 6months	2.1	0.5-8.8
Primary graft nonfunction	-	-	Primary graft nonfunction	-	
Dialisys	0.7	0.1-5.6	Dialisys	1.1	0.2-6.2
Retransplant	0.2	0.01-1.9	Retransplant	0.7	0.05-11.2
Death	-		Death	0.92	0.3-3.1

Abstract# 208 Poster Board #-Session: P10-II

COMPARISON OF HEMODYNAMICS CHANGES DURING THE ANHEPATIC PHASE IN GLYCOGEN STORAGE DISEASE AND BILIARY ARTESIA PATIENTS UNDERGOING LIVING DONOR LIVER TRANSPLANTATION WITHOUT VENO-VENOUS BYPASS. Chia-Jung Wang[1], Chao-Long Chen[2], Chih-Hsien Wang[1], Kuan-Hung Chen[1], Allan M. Concejero[2], Chih-Chi Wang[2], Yu-Fan Cheng[2], Bruno Jawan[1]. *[1]Anesthesiology, Chang Gung Memorial Hospital, Kaohsiung Medical Center, Kaohsiung, Taiwan; [2]Liver Tranplant Program, Chang Gung Memorial Hospital, Kaohsiung Medical Center, Kaohsiung, Taiwan.*

Purpose: The purpose of this study is to compare the hemodynamic changes that occur during the anhepatic phase of living donor liver transplantation without the use of veno-venous bypass between glycogen storage disease and biliary atresia patients.

Patients and methods: The systolic blood pressure (SBP), heart rate (HR), central venous pressure (CVP), arterial blood gases, and fluids replacements during the anhepatic phase of transplantation in 8 glycogen storage disease (group I) and 72 biliary atresia patients (group II) were compared retrospectively.

Results: The mean age and body weight in group I were significantly higher compared to group II; hence, the data related to body weight were converted to per kilogram basis. The mean total blood loss and blood products used during the operation were not significantly different between the 2 groups but group I received more crystalloids than group II. The SBP, HR and CVP were also not significantly different between the 2 groups before the anhepatic phase. During the anhepatic phase, the SBP and CVP in group I were significantly lower than group II. Whereas, the HR in group I was higher than group II. Group I received more sodium bicarbonate to maintain an acceptable blood pH.

Conclusion: During the anhepatic phase of living donor liver transplantation without veno-venous bypass, total cross-clamping of the inferior vena cava resulted in more significant hemodynamic changes in glycogen storage disease recipients than biliary atresia recipients. The mechanism is probably due to the presence of a non-cirrhotic liver and less venous collateral drainage in glycogen storage disease patients.

Abstract# 209 Poster Board #-Session: P11-II

CAN WE INFLUENCE WITH THE CHOICE OF ANESTHETIC TECHNIQUE ON DURATION OF INTUBATION AND LENGTH OF STAY IN ICU OF ADULT LIVER RECIPIENTS?

Rade Stanic, Ana Spec-Marn[1], Neva Pozar-Lukanovic[1], Jasmina Markovic[1], Boriana Kremzar[1]. *[1]Anesthesiology and Intensive Care Medicin, Clinical Centre, Ljubljana, Slovenia.*

Objective: To examine the influence of shorter-acting anesthetic drugs on time to extubation, and LOS of adult liver recipients in ICU.

Design: Retrospective cohort study.

Setting: Surgical intensive care unit in a tertiary care university hospital

Patients: Consecutive series of 70 adults undergoing liver transplantation between March 1998 and November 2006. Patients were excluded if they died immeadiatelly after admission to the ICU (2) or very late because of surgical complications (9).

Maesurements and results: We retrospectively evaluated charts of consecutive adult patients following liver transplantation (LTx) to determine the time to extubation and LOS in the ICU . Patients were grouped according to anesthesia technique in patients anesthetised with fentanyl and isofluran (F/I) (n=41) or remifentanil and sevofluran (R/S) (n=29). All patients were treated with our standard protocol for LTx included immunosupression (cyclosporin, azathioprine, corticosteroids). The primary diagnosis was primary biliary cirrhosis in 17 patients, alcocholic cirrhosis in 22patients, HB-CV-related cirrhosis in 12 patients, fulminant hepatic failure in 3 patients, haemangioendothelioma in 3 patients, cryptogenic cirrhosis in 9 patients, and metabolic disease in 4 patients.

Of total 70 included patients with mean age 48 years 43 were males.

In a group of R/S patients with mean age of 49.6 years, 20 were male. In R/S group the time to extuation was 2.24 days (SD ±1,5) and LOS in ICU was 5.48 days (SD ± 2,37). In a group of F/I patients with mean age of 47.5 years, 23 were male. In F/I group time to extubation was 4.17 days (SD ±2,16) and LOS was 8.47 days (SD ±4,3).

Conclusion: According to our results we can conclud that in R/S group time to extubation was shorter (p= 0.0001) as well as LOS of liver recipients in ICU (p=0.0001).

Abstract# 210 Poster Board #-Session: P12-II

CHAGASIC MYOCARDIAL DISEASE AFTER LIVER TRANSPLANTATION INSPITE OF NEGATIVE SEROLOGICAL SCREENING TESTS OF BOTH DONOR AND RECIPIENT.

Orlando Castro e Silva, Jr., Ajith K. Sankarankutty, Fernanda F. Souza, Andreza C. Teixeira, Ana L. C. Martinelli, Afonso D. C. Passos, José A. Marin-Neto, José F. C. Figueiredo, Gilberto G. Gaspar, Letícia Melo. *[1]Cirurgia e Anatomia, Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo, Ribeirão Preto, São Paulo, Brazil; [2]Clinica Médica, Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo, Ribeirão Preto, São Paulo, Brazil; [3]Medicina Social, Faculdade de Medicina de Ribeirão Preto da Universidade de São Paulo, Ribeirão Preto, São Paulo, Brazil.*

Clinical Background: Chagas disease (American trypanosomiasis) is caused by the protozoan parasite *Trypanosoma cruzi*. Chagas disease following solid-organ transplantation has occurred in Latin America. This report is to notify the occurrence of Chagas disease inspite of negative serological tests of both the donor and recipient, as well as the possibility of treatment when it occurs.

Case Report: A 21 year old female from the state of São Paulo (Brazil), was submitted to cadaveric donor liver transplantation in November 2005, due to cirrhosis of auto-immune origin. Ten months after liver transplantation she developed signs and symptoms of congestive heart failure (functional class IV). The echocardiogram, which was normal pre-operatively, detected dilated cardiac chambers, depressed systolic function of the left ventricle (ejection fraction of 35%) and pulmonary hypertension of moderate degree. Clinical investigation discarded ischemic heart disease and auto-immune causes. Immunefluorescence (IgM and IgG) and hemagglutination tests for *Trypanosoma cruzi* turned up positive. *T. cruzi* amastigotes were identified on myocardial biopsy. Treatment with benzonidazole was started with excellent clinical response. At the moment of submission the patient remains in functional class I.

Significance:

This case highlights the importance of serological testing of potential donors and recipients of solid-organ transplants in regions where Chagas disease is prevelant as well the need to consider this diagnosis in recipients who develop cardiac complications. Negative tests do not discard completely the possibility of disease transmission, but if that occurs, satisfactory results can still be achieved with adequate treatment.

Abstract# 211 Poster Board #-Session: P13-II

RECURRENT PRIMARY BILIARY CIRRHOSIS: NEITHER ASYMPTOMATIC NOR BENIGN, BUT A RATHER DISASTROUS AND PROGRESSIVE DISEASE.

Mauricio F. Barros[1], Evandro S. Mello[2], Fabiana R. Lima[2], Vinicius R. Santos[1], Renato A. Cury[1], Telesforo Bacchella[3], Hoel Sette, Jr.[1] *[1]Surgery, Pro-Figado, Sao Paulo, Brazil; [2]CICAP, HAOC, Sao Paulo, Brazil; [3]Surgery, HCFMUSP, Sao Paulo, Brazil.*

CLINICAL BACKGROUNG: Primary biliary cirrhosis (PBC) does recur after liver transplantation (LT) and progression to advanced stages remains controversial, although there is increasing evidence that it occurs in some cases.

CASE REPORT: A 40-y.o. white female was diagnosed with PBC at the age of 26. She underwent LT 2 years later and remained stable 4 years thereafter, when she presented an increase in liver enzymes. Biopsy suggested chronic rejection, so she was converted from cyclosporine to tacrolimus. Liver enzymes remained stable until new rise 4 years later, and new biopsy was done. Recurrent asymptomatic PBC was confirmed, and histological features were of intense portal inflammation with interface activity, epithelioid cell granuloma with florid bile-duct lesion, ductular proliferation and portal-portal bridging septa. One year later (9 years post-LT), she started to present pruritus, and subsequent biopsies, which accompanied increase in liver enzymes, revealed intense fibrosis and a final ductopenia. Pruritus became refractory to any medical treatment and even to Molecular Adsorbent Recirculating System. Eleven years after LT the picture deteriorated as bilirrubin progressed from 2.2 mg/dl (MELD=9) to above 40 mg/dl in 3 months. She was admitted to the hospital in grade 3 hepatic coma, MELD score progressed from 24 to 34 within a week, and liver retransplantation was carried out, with explanted allograft showing fully developed cirrhosis. Postoperative was remarkable for graft nonfunction and retransplant was performed 3 days later. The patient recovered after a 45-day hospital stay and remains well 1 year after LT.

SIGNIFICANCE: Recurrent PBC after LT can present a life threatening course, compromising patient and graft survival. Diagnosis of chronic rejection in this case might have missed the beginning of PBC recurrence, even leading cyclosporine to be switched to tacrolimus. It is not clear yet whether or not tacrolimus rather than cyclosporine lead to more frequent PBC recurrence after LT. Aggressive outcome could have been influenced by switching the type of calcineurin inhibitor. Patient's first liver was lost after 26 years, and the second one in less than half the time. How long one should expect the new liver last, and what will be the role played by immunosuppression?

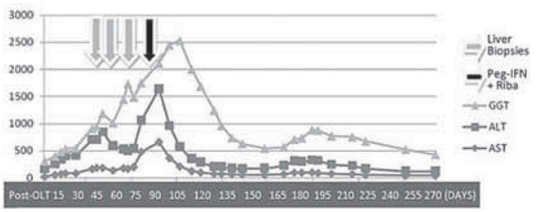
Abstract# 212 Poster Board #-Session: P14-II

TREATMENT OF ACUTE HEPATITIS C AFTER LIVER TRANSPLANTATION: YES OR NOT. Mauricio F. Barros[1], Agnaldo S. Lima[2], Vinicius R. Santos[1], Evandro S. Mello[4], Telesforo Bacchella[3], Hoel Sette, Jr.[1] *[1]Surgery, Pro-Figado, Sao Paulo, SP, Brazil; [2]Surgery, HC-UFMG, Belo Horizonte, Brazil; [3]Transplantation and Surgery, HC-FMUSP, Sao Paulo, Brazil; [4]Pathology, HC-FMUSP, Sao Paulo, Brazil.*

CLINICAL BACKGROUNG: Recurrence of hepatitis C following orthotopic liver transplantation (OLT) is universal, and recurrence of hepatocellular carcinoma (HCC) depends on tumor staging.

CASE REPORT: A 51-y.o. white male patient, with hepatitis C-related cirrhosis and HCC was submitted to OLT. Although he was considered within Milan criteria, explanted liver showed a total of ten HCC lesions. Immunosuppression was based on tacrolimus and steroids, and early postoperative was uneventful. All liver enzymes started to increase early after OLT, peaking on day 75, when bilirrubin reached 21.2 mg/dl. Alfafetoprotein increased up to 3,306 IU/l, so workup was done and ruled out HCC recurrence. Sequential biopsies were performed according to the rise in enzymes on days 45, 55 and 72, starting with mild reactive pattern and concluding for acute hepatitis on the last one. HCV-RNA (genotype 1b) was > log 7, and the patient was started on peginterferon alfa-2a plus ribavirin. All lab tests improved over the next 2 months, HCV- RNA was undetectable on week 12, and alfafetoprotein dropped likewise, reaching normal range within 2 months.

SIGNIFICANCE: Recurrent hepatitis C after OLT evolves a more aggressive disease, with impact in graft and patient survival. Although widely used, the efficacy of pegylated interferon and ribavirin in transplant patients has not been well established. On the other hand, at least in the non-transplant setting, treatment for acute hepatitis C has been proven to have a better prognosis of sustained virological response. This case illustrates the difficulty of differential diagnosis between recurrent hepatitis C and recurrent HCC, either for its acute and cholestatic presentation with no histological markers at the beginning, or even because of high alfafetoprotein levels. Regardless this result, whether or not every acute hepatitis C following OLT should be treated is still unclear.



Abstract# 213 Poster Board #-Session: P15-II

RAPAMYCIN-BASED THERAPY RESCUE FOR EARLY CHRONIC REJECTION IN ORTHOTOPIC LIVER TRANSPLANTATION (OLT), REPORT OF A CASE FROM CHILE. Nicolas Devaud[1], Rosa Perez-Ayuso[1], Nicolas Jarufe[1], Juan Francisco Guerra[1], Pilar Dominguez[1], Alejandro Soza[1], Robinson Gonzalez[1], Marcos Arrese[1], Jorge Martinez[1]. *[1]Digestive Surgery and Gastroentherology Departments, Pontificia Universidad Catolica de Chile, Santiago, Metropolitana, Chile.*

Introduction : Rapamycin is a new immunosuppresive drug with a post receptor signal inhibition effect over interleukin-2, with proven significant potential advantages over other immunosuppresive agents. We present an early chronic rejection case, rescued after a rapamycin-based therapy.

Case Report: A 54 year old male patient with hystory of chronic alcoholism and advanced liver disease diagnosed in 2003. After one year of proven abstinence, patient was enroled in transplantation list with a Child-Pugh-Turcotte score B, undergoing elective cadaveric OLT in july 2005. Transplant procedure and inmediate post operative period were uneventful, begining an associated immunosupresive therapy based on Cyclosporine and Prednisone. After 4 months post surgery, patient developed increasing jaundice, pruritus and dark urine due to stenosis of the biliar anastomosis, undergoing biliar derivative surgery after a failed endoscopic stenting. During post-operative period, patient developed an acute liver rejection, without response to the first rescue therapy based on high Metilprednisolone doses (500, 1000 and 1000mg) nor switched therapy to Tacrolimus and Mofetil micofenolate. Histopathology showed great inflammatory activity with great destruction of biliar ducts, moderate cholestasis but without established ductopenia. A second rescue chance was taken with Prednisone with no changes in liver function tests, therefore initiating therapy with Rapamycin and Tacrolimus. Histopathology after 7 days showed no inflammatory activity in portal spaces, moderate destruction of ductal epithelium, no ductopenia and improvement of liver function tests. Patient evolved asymptomacic after one year OLT, with normal liver enzymes and histopathology.

Conclusion: Rapamycin proved as an effective rescue immunosuppresive drug in this case of early chronic rejection.

Liver function tests post OLT and rescue with Rapamycin (months)

Liver Enzymes	1	2	3	4	5	6	12
TBIL	2,49	1,55	0,8	11,2	28,35	6,38	0,39
DBIL	1,48	0,86	0,27	9,39	21,5	4,61	0,19
ALKP	63	82	58	356	512	201	73
GGT	47	173	47	857	1445	1741	387
SGOT/SGPT	13/25	110/47	15/23	279/423	94/166	93/107	39/43
PT/INR	82/1,1	81/1,1	88/1,1	94/1,0	64/1,2	73/1,1	93/1,1

Abstract# 214 Poster Board #-Session: P16-II

PORTAL HEMODYNAMIC IN ADULT LIVING DONOR LIVER TRANSPLANTATION AFTER SPLENIC ARTERY LIGATION. Tung-Liang Huang[1,2], Yu-Fan Cheng[1,2], Tai-Yi Chen[1,2], Leo Leung-Chit Tsang[1,2], Chih-Chi Wang[2], Chao-Long Chen[2]. *[1]Diagnostic Radiology, Chang Gung Memorial Hospital, Kaohsiung, Taiwan; [2]Liver Transplantation Program, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.*

Background: Liver graft hyperperfusion syndrome is an important clinical problem in adult living donor liver transplantation (ALDLT). Portal hyperperfusion in a small-size volume liver graft is thought to be one of the main causes of post-transplant graft dysfunction.

Purpose: The aim of this study is to evaluate the effects of splenic artery ligation on the reduction of excessive portal hypertension immediately after ALDLT in order to prevent portal hyperperfusion injury in the recipient.

Materials and methods:

The study population consisted of 43 ALDLT performed at the Chang Gung Memorial Hospital - Kaohsiung Medical Center, Taiwan. Patients were divided retrospectively into two groups: G1, without modulation of recipient portal inflow (rPVF), and G2, with splenic artery ligation to decrease rPVF perioperatively. Intra-operative imaging studies and post-operative 2-dimensional color flow Doppler ultrasound of the portal flow were performed and the recipient hepatic hemodynamics and outcome were evaluated. The rPVF>250mL/min/100gm graft weight was identified as excessive portal hyperperfusion.

Results: Forty-three (43) right lobe ALDLT were performed. The rPVF was 200.27 ±48.32 mL/ min/ 100 gm graft (range, 103- 270) in G1 with 3 recipients with rPVF > 250 mL/min/100gm graft weight. The rPVF was 370.58 ± 40.82mL/ min/ 100 gm graft (range, 350 - 394) in G2 was found in 5 recipients. Intra-operative splenic artery ligation was performed in 4/ 8 and splenectomy in 1/ 8 of these recipients. A decrease in PVFV to < 250 mL/ min was achieved in the 5 recipients who received intervention. Poor initial function of the graft with mortality was only found in one (G1) patient.

Conclusion: Intraoperative splenic artery ligation is a simple and safe method in decreasing the portal flow in the hyperperfused grafts resulting to both graft and patient survivals without portal hyperperfusion.

Abstract# 215 Poster Board #-Session: P17-II

THE OUTCOMES OF CONSECUTIVE 293 LIVING LIVER DONORS IN A SINGLE CENTER. Chin-Hsiang Yang[1], Chao-Long Chen[1], Chih-Chi Wang[1], Shih-Hor Wang[1], Chih-Che Lin[1], Yeuh-Wei Liu[1], Chee-Chien Yong[1]. *[1]Liver Transplant Program, Chang Gung Memorial Hospital - Kaohsiung Medical Center, Kaohsiung County, Taiwan.*

Background: Living donor liver transplantation (LDLT) is a pivotal resolution for organ shortage in Asia. However, donor safety is the prime consideration. This study reviewed our experience on living donor management and presented the outcomes of 293 living donors in a single center.

Material and methods: From June 1994 to October 2006, consecutive 293 living donors for 289 liver transplants were enrolled in this study. 8 grafts were implanted to 4 recipients as dual grafts transplantation, and 3 grafts were transplanted as retransplantion. 143 left side grafts (left lateral segment: n=87, extended left lateral segment: n=37, left lobe without middle hepatic vein (MHV): n=9, left lobe with MHV: n=10) and 150 right side grafts (right lobe without MHV: n=126, right lobe with MHV: n=24) were procured.

Results: The median follow-up period was 40.4 months. No donor mortality occurred in this series. There were 15 donors (5.1%) sustaining major complications (grade III and IV complications described by Dindo et al. in 2004), including internal bleeding requiring relaparotomy: n=2, bile leak or biloma: n=4, biliary strictures requiring T-tube placement or reconstruction: n=4, intraabdominal infection: n=3, intestinal obstruction: n=1, and pneumothorax: n=1. The overall complication rate was higher in right side donors (6.7% vs. 3.4%, p=0.167). The mean intraoperative blood loss was also higher in donors with right hepatectomy (117.6ml vs. 73.4ml, p<0.001). Actuarial graft survival rates are 93.1% and 88.5% at 1-year and 5-year respectively.
Conclusion: Modification of the surgical technique and postoperative intensive care can decrease donor morbidity rate. Post-hepatectomy intraoperative cholangiography can detect biliary stricture early and treat the complication during operation. After suturing every knot over inferior vena cava, we had not encountered postoperative life-threatening bleeding in latest 100 cases.

Abstract# 216 Poster Board #-Session: P18-II

BILIARY RECONSTRUCTION IN RIGHT LOBE LIVING-DONOR LIVER TRANSPLANTATION: COMPARISON OF DIFFERENT TECHNIQUES. George Tsoulfas[1], Mark Orloff[1], Randeep Kashyap[1], Peter Abt[1], Ashokumar Jain[1], Saman Safadjou[1], Maureen Graham[1], Peter Horton[1], Manoj Maloo[1], Adel Bozorgzadeh[1]. *[1]Solid Organ Transplantation and Hepatobiliary Surgery, University of Rochester, Rochester, NY, USA.*

Introduction: Biliary complications remain a significant cause of morbidity and mortality in Living Donor Liver Transplantation (LDLT). The Roux-en-Y hepaticojejunostomy (HJ) has been the main choice for bile duct reconstruction; however, duct-to duct (DD) choledochocholedochostomy is being increasingly performed. The objective is to assess the incidence of biliary complications after right lobe LDLT in patients with DD or HJ biliary reconstruction.

Methods: Between July 2003 and July 2006, 60 patients received LDLT at our center. Biliary reconstruction was achieved with HJ in 27 patients and DD in 33 patients. Demographics of the population, incidence and management of biliary complications were analyzed in a retrospective review, . Using the Kaplan-Meier method survival was evaluated.

Results: There was no statistically significant difference in donor or recipient age, gender, type of original disease, graft recipient weight ratio, packed RBC's transfused or incidence of hepatic artery thrombosis. However, there was a statistically significant difference in the MELD score with the DD group having a mean score of 15.9 vs. 11.6 in the HJ group. The Table shows the overall biliary complication rate and the specific types of complications in the two groups. There was no statistically significant difference between DD and HJ biliary reconstruction complications. Regarding their management 39.4% underwent percutaneous transhepatic cholangiogrpahy and 37% underwent surgical revision in the DD group vs. 27.3% and 14.8% respectively in the HJ group, with good results in both. The majority of complications occurred in the first year in both groups; however, the survival at that same time point was higher in the DD group (95% vs. 89%).

Discussion: We found an equal rate of overall biliary complications between the two groups with the majority of those occurring within the first year. However, the finding of better early survival in the DD group raises the question of increased severity of the complications in the HJ group, possibly because of the involvement of enteric contents, leading to more severe sepsis.

	Biliary Complications Overall	Bile Leak	Biloma	Stricture	Cholangitis	Biliary Fistula
DD	51.5%	27.3%	30.3%	33.3%	33.3%	3.1%
HJ	51.9%	25.9%	29.6%	33.3%	22.2%	7.4%

Abstract# 217 Poster Board #-Session: P19-II

MORPHINE AND GLUCAGON AUGMENTED MRCP FOR EVALUATION OF LIVING-RELATED LIVER DONORS. Yuan Heng Mo[1,4], Shinn Forng Steven Peng[2], Yao-Ming Wu[3], Cheng Maw Ho[3], Hon Man Liu[2], Ming Chih Ho[3], Po Huang Lee[3], Fu Shan Jaw[4], Po Chin Liang[2]. *[1]Department of Radiology, Cathay General Hospital, Taipei, Taiwan; [2]Department of Medical Imaging, National Taiwan University Hospital, Taipei, Taiwan; [3]Department of Surgery, National Taiwan University Hospital, Taipei, Taiwan; [4]Institute of Biomedical Engineering, College of Engineering and College of Medicine, National Taiwan University, Taipei, Taiwan.*

Background Drugs such as morphine and glucagon have been used to augment the visualization of radionuclide imaging, magnetic resonance cholangiopancreatography (MRCP) and endoscopic retrograde cholangiopancreatography (ERCP). This study investigated the effectiveness of intravenous administration of morphine and intramuscular administration of glucagon in improving the MRCP image quality for evaluation of living-related liver donors.

Methods Sixteen normal donor candidates underwent MRCP study. Coronal single-shot fast spin-echo heavily T2-weighted dynamic MRCP images were generated before and 3 minutes after intravenous administration of morphine HCl at a dose of 40 μg/kg and 15 minutes after intramuscular administration of glucagon at a dose of 1mg with the time interval between these two drugs about 30 minutes. The diameters, signal intensity and number of branches of bile ducts on pre- and post-morphine, and post-glucagon injection MRCP images were compared and analyzed quantitatively and qualitatively.

Results The diameters of the right and left intrahepatic ducts, common bile duct, and main pancreatic duct significantly increased ($p < 0.01$) in all sixteen donor candidates in both post-morphine and post-glucagon injection MRCP images as compared to pre-morphine MRCP images. The qualitatively grading score of signal intensity and number of branches of bile ducts revealed improvement in post-glucagon injection MRCP images ($p < 0.05$), but no statistical significancy in post-morphine MRCP images.

Conclusions Intravenous administration of low dose morphine and intramuscular administration of glucagon before MRCP study improves quantitative and qualitative visualization of the nondilated ductal system anatomy that may be of great value in detail evaluation of living-related liver donor candidates.

Abstract# 218 Poster Board #-Session: P20-II

IMPACT OF TECHNICAL IMPROVEMENTS IN THE BILIARY ANASTOMOSIS ON THE INCIDENCE OF BILIARY COMPLICATIONS AFTER LIVING DONOR LIVER TRANSPLANTATION. Vincenzo Pugliese[1], Eduardo Carone[1], Renata S. Pugliese[1], Eduardo A. Fonseca[1], Joao Seda Neto[1], Alcides A. Salzedas Netto[1], Andre Godoy[1], Vera Baggio[1], Irene K. Miura[1], Tereza Guimaraes[1], Rogerio Pinheiro[1], Carla A. Matos[1], Mario Kondo[1], Paulo Chapchap[1]. *[1]Liver Transplant Unit, Hospital do Cancer/Hospital Sirio Libanes, Sao Paulo, Brazil.*

The incidence of biliary complications after living donor liver transplantation (LDLT) is reportedly higher compared to whole liver transplantation. The objective of this study is to analyze the impact of technical improvements in biliary reconstruction on the incidence of postoperative biliary strictures and leaks. From June 1995 to December 2006, 300 LDLT were performed in our center. There were 199 left lateral segments, 52 left lobes and 49 right lobes. 156 (52.0%) recipients were male. Recipient's mean age was 12.7 ± 20.2 years. Patients were divided in two groups: Group I (123 cases) – biliary reconstruction with conventional method (7-0 PDS interrupted suture), and Group II (177 cases) – biliary reconstruction with the "new" technique (posterior wall with 7-0 Prolene running suture, and anterior wall with 7-0 PDS interrupted suture). For the analysis of biliary strictures we considered LDLT with at least 6 months of follow-up and we also excluded 24 patients with early mortality (less then 2 months after LDLT – 17 from Group I and 7 from Group II). The results are shown in table 1. The change in technique significantly reduced the incidence of posttransplant biliary strictures. Although a longer follow-up is needed, none of the patients in Group II developed biliary stones. The incidence of biliary leaks decreased in Group

II but was not statistically significant compared to Group I. In conclusion, technical refinements in the biliary anastomosis significantly decreased our incidence of biliary complications after LDLT.

Table 1

	Group I	Group II	p value
Biliary stricture	17/106 (16.0%)	8/143 (5.6%)	p= 0.012 *
Biliary leak	10/123 (8.1%)	6/177 (3.4%)	p=0.125

Abstract# 219 Poster Board #-Session: P21-II

TRANSFERRAL OF EXPERIENCE AND ANALYSIS OF THE EFFECT OF LEARNING CURVE IN ADULT-TO-ADULT RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION (128 CASES). Amr Abdelaal[1], Mahmoud el Meteini[2], Alaa Hamza[2], Ibrahim Mustapha[2], Mustapha Adham[1], Jérôme Dumortier[1], Pierre Sagnard[1], Olivier Boillot[1]. *[1]Liver Transplant Unit, Edouard Herriot Hospital, Lyon, France; [2]Liver Tranplant Unit, Wadi Al Neel Hospital, Cairo, Egypt.*

Objective: Determining the effect of the learning curve in adult-to-adult right lobe living donor liver transplantation (A2ARLLDLT) and evaluating its impact on the feasibility of transferral of experience between 2 centers.

Patients & Methods: From December 1998 to May 2006 we performed 128 cases (49 in France & 79 in Egypt) using right lobe graft. Patients were 96 men and 32 women with median age of 46.6 years (range 18-66 years). Median age of the donors was 32.4 years (range 18-57 years) with average BMI of 24.8 (range 18.7-31.25). Main liver diseases encountered were hepatitis C-related cirrhosis (86 cases), alcoholic cirrhosis (22 cases), hepatitis B-related cirrhosis (11 cases) and Budd Chiari Syndrome (5 cases). Patients were divided into 3 groups: group (A) 49 patients operated upon by the French team, group (B) 40 patients operated upon in Egypt by both teams with gradual planned participation of the Egyptian team, and group (C) 39 patients operated upon by the Egyptian team alone. We further classified the 3 groups into subgroups to detect the effect of learning curve during different periods of the study.

Results: Forty patients (31.2%) had hepatocellular carcinoma (HCC) on top of cirrhosis while 101 patients (78.9%) were classified as Child C. The presence of vascular and biliary anomalies were frequent with the presence of multiple hepatic veins, hepatic arteries, portal veins and bile ducts in 28, 4, 15 and 70 cases respectively. Surgical postoperative complications were encountered in 33 % of cases. The one & two year patients' survival rates for groups A,B & C were 95.8% , 91.6%; 84.6%,74.6% and 72.2%, 72.2% respectively. Three patients had late retransplantation, in group A (1 case) and in group B (2 cases).

Conclusion: A2ARLLDLT is now considered a standard procedure. Its applicability is of crucial importance in countries in which cadaveric transplantation is not yet feasible. Thorough analysis of the outcome of the 3 groups shows clearly the impact of the learning curve and feasibility of transferral of experience between centers.

Abstract# 220 Poster Board #-Session: P22-II

SMALL REMNANT LIVER VOLUME AFTER RIGHT LOBE LIVING DONOR HEPATECTOMY: OUTCOME OF DONORS WITH A REMNANT LIVER VOLUME OF LESS THAN 30%. Murat Dayangac[1], Burcin Taner[1], Deniz Balci[1], Zahide Kurt[1], Suleyman Uraz[1], Omer Ayanoglu[1], Cihan Duran[1], Yildiray Yuzer[1]. *[1]Department of Surgery, Florence Nightingale Hospital, Istanbul, Turkey.*

Right lobe (RL) living donor liver transplantation (LDLT) has become a viable option for adult patients with end-stage liver disease. Although extended RL grafts including middle hepatic vein has been used to overcome size mismatch, adequate remnant liver volume (RLV) is one of the key factors in donor safety. We assessed donor outcome, with a focus on RLV in order to establish a safety limit of 30% for donor right hepatectomy (RH).

We retrospectively examined 50 consecutive liver donors who underwent RH between January 2005 and November 2006 who had less than 30% RLV. Seven donors (Group 1) had RLV≤30% (range, 26-30%) and 43 donors (Group 2) had RLV>30% (range, 32-46%).

There were no differences between 2 groups in donor characteristics including gender, age, and body mass index. The number of the patients undergoing extended RH was 4/7 (57%) in Group 1 and 22/43 (51%) in Group 2. The calculated total (1353±59 ml in Group 1 vs. 1308±234 ml in Group 2) and remnant (421±40 ml in Group 1 vs. 472±93 ml in Group 2) liver volumes and the actual graft weight (891±32 gram in Group 1 vs. 822±142 gram in Group 2) were similar in both groups. Parenchymal transection time was longer in Group 1 (96.7±22 vs. 82.9±36 minutes) which did not reach statistical significance.

Mean postoperative peak serum AST, ALT, bilirubin and INR levels were similar between groups.

Although, mean postoperative day 7 AST, ALT, and INR approached normal levels in both groups, small remnant donors had higher bilirubin levels which did not reach statistical significance (2.9±3.5 vs. 3.5±1.8 mg/dl). Biochemical profile of all donors were within normal limits at second month check postoperatively.

All the major post-operative complications (1 biliary leak, 1 pneumonia, 2 wound infections) occurred in Group 2. The hospital stay was significantly longer in Group 1 donors due to prolonged hyperbilirubinemia (13.2±4 vs. 9.8±2 days, p=0.007).

The judicious use of donors with RLV less than 30% is safe as a last resort. Therefore, a RLV of 30% does not appear to be an absolute contraindication for right liver procurement in living donors.

Abstract# 221 Poster Board #-Session: P23-II

HUNDRED AND FORTY CASES OF LIVING-DONOR LIVER TRANSPLANTATION: SINGLE-CENTER EXPERIENCE IN BRAZIL. Sergio Mies[1], Thomson M. Palma[1], Thiago Beduschi[1], Vinicius M. Silva[1], Ana Olga N. G. F. Mies[1], Ana Suely C. Zan[1], Bianca D. Guardia[1], Carlos E. S. Baia[1], Eloiza H. Quintela[1], Leonardo R. Ferraz[1], Marcio D. Almeida[1], Margareth P. Lallee[1], Osvaldo I. Pereira[1]. *[1]Liver Unit, Albert Einstein Hospital, Sao Paulo, SP, Brazil.*

Introduction: Between January 2nd, 2002 and June 19th, 2006, the Liver Unit performed 140 living-donor liver transplantations. Only one recipient was a pediatric patient.

Objective: To present the results of 140 living donor liver transplants in Brazil.

Method: Data were collected from patient's hospital files. Kaplan-Meir methods were used to estimate patient survival.

Results: A total of 140 living-donor transplants were performed of which 139 were right lobe and one was left lobe. The patients were 97 males, with a median age of 51.7 years (range 8-77 years). Median model for end-stage liver disease score was 16 (range 6-36). The indication for liver transplantation was viral cirrhosis in 63 patients (45%), followed by hepatocellular carcinoma in 32 (22.9%), alcoholic cirrhosis in 15 (10.7%), cholestatic liver disease in 8 (5.8%), familial amyloid polyneuropahy in 8 (5.8%) and other causes in 14 patients (10%). A total of 135 patients (96.4%) received a duct-to-duct biliary reconstruction. The median hospitalization time was 21 days (range 10-262 days). Retransplantation was indicated for 21 patients (15%) and the main reason was arterial thrombosis (67%). 1-year and 3-years patient survival was respectively 78.1% and 74.6%.

Conclusions: The Liver Unit performed the first living-donor liver transplantation in 1989. Today it's responsible for the main program of adult-to-adult living donor liver transplantation in South America and has a good outcome with patient survival comparable with other centers in the world.

Abstract# 222 Poster Board #-Session: P24-II

PRE-OPERATIVE ADMINISTRATION OF THYMOGLOBULIN REDUCES THE USE OF BLOOD PRODUCTS IN LIVING DONOR LIVER TRANSPLANT RECIPIENTS. Ronak Iqbal[1], Antonio Gangemi[1], Thuy Pham[2], James Thielke[2], Heather Neeley[3], Damiano Rondelli[3], Enrico Benedetti[1], Giuliano Testa[4]. *[1]Department of Surgery, University of Illinois, Chicago, IL, USA; [2]Pharmacy Practice, University of Illinois, Chicago, IL, USA; [3]Department of Medicine, University of Illinois, Chicago, IL, USA; [4]Department of Surgery, University of Chicago, Chicago, IL, USA.*

Background

Thymoglobulin (THY) induces thrombocytopenia that can be associated to increased intra-operative blood loss. The aim of this study was to compare blood product requirements in recipients of a right liver living donor transplant (LDLT) who either had THY night before or during LDLT with the belief that the use of intra-op THY in these patients may increase the risk of bleeding aside from the effect on platelet counts.

Patients and methods
Between January 2003 and September 2006, 24 LDLT patients were induced with THY. Group A had THY night before LDLT, while Group B received THY during LDLT. Patients received THY at a dose of 1.5mg/kg pre or intra-op and every other day for 2 additional doses. Demographics, diagnosis and MELD scores were comparable. Maintenance immunosuppression consisted of calcineurin inhibitors with steroids tapered off by day 6. Acute cellular rejection (ACR) was confirmed by biopsy.
Results:
Pts receiving THY during LDLT required a significantly higher number of PRBC and FFP units than pts receiving THY pre-LDLT, as shown in Table 1. The incidence of ACR was similar.
Conclusion:
THY given prior to LDLT reduces the amount of PRBC and FFP transfusions and is equally effective as an induction agent. These results should be further studied in a prospective randomized trial.

Table 1

	Pre-Op Thymoglobulin	Intra-Op Thymoglobulin	p-value
Male	9 (75)	8 (67)	1.00
Female	3 (25)	4 (33)	1.00
PRBC Units (median, ranges)	3.5 (0-16)	8.5	<0.01
Platelet Units (median, ranges)	1.0(0-30)	1.5	0.322
FFP Units (median, ranges)	4.5(0-45)	10.0	<0.01
Albumin (mls) (median, ranges)	425(0-3500)	1000	0.143
Rejection episodes	1 (8)	3 (25)	0.590

Abstract# 223 Poster Board #-Session: P25-II

CAUSES OF DONOR EXCLUSION DURING EVALUATION FOR ADULT LIVING DONOR LIVER DONATION. Sergio Mies, Marcio D. de Almeida, Thiago Beduschi, Thomson M. Palma, Bianca Della Guardia, Vinicius M. R. Silva, Ana Olga N. G. F. Mies, Ana Suely C. Zan, Carlos E. S. Baia, Eloiza H. Quintela, Leonardo R. Ferraz, Margareth P. Lallee, Osvaldo I. Pereira. [1]*Liver Unit, Albert Einstein Hospital, Sao Paulo, SP, Brazil.*
The first living donor liver transplantation (LDLT) was performed by our group in 1988. Since that time the LDLT increased around the world as consequence of deceased donors shortage. The objective of this study is to show the main characteristics of potential donors and their main causes of exclusion. Initial and obligatory requirements to become a potential donor were age from 18 to 50 years, ABO blood group compatibility, minimum of 80% of dry recipient's weight and body mass index less than 30. All potential donors begin a protocol in 4 consecutive steps. Phase 1 consists in extensive blood tests, including infectious serology, screening for hepatic and hormonal diseases, pregnancy test, Doppler of the portal vein, chest x-ray, electrocardiogram and clinical history and physical exam. Phase 2 consists of cardiologic, pulmonary and renal evaluation, hepatitis B vaccination, psychosocial evaluation and magnetic resonance cholangiografy. In the third phase is performed a three-dimensional computed tomographic angiogram to study the hepatic vasculature. Autologous blood donation is used. From April 2000 to July 2006 we evaluated 387 potential donors that were approved in phase 1. Mean age was 32 years. Sixty one percent were men. Related donors represent 76% of the total. Fifty five percent of those were sons or daughters, 26% were brothers or sisters, spouses and nephews or nieces were 7%. Other familiar relationship represents 5%. In 165 patients (43%) was performed the donor hepatectomy (DH). The other 222 (57%) patients were reproved in any phase. Causes of exclusion were biliary (37%), receptor death (16%), donor denial (8%), vascular anomalies (7%), recipient-related reasons (5%), deceased liver transplantation (3%), another most favorable donor (3%), other causes (21%). The patients excluded for biliary causes 74 (89%) were in phase 2 and 9 (11%) were excluded on the operative room. Donor denial occurred after phase 2 in 53 % and after phase 3 in 47%. In the vascular causes 60% were arterial variations and 40 % portal anomalies. The evaluation of the donation process was interrupted 67% in phase 2, 29% in phase 3 and 4 % in phase 4.

Abstract# 224 Poster Board #-Session: P26-II

LIVING RELATED LIVER TRANSPLANTATION PROGRAMS IN EGYPT: A COCKTAIL OF PROBLEMS. Amr Helmy. [1]*Surgery, The National Liver Institute, Shebin El Kom, Menoufiya, Egypt.*
Although since 2001, LDLTx programs in Egypt still face problems which are diverse and multifaceted. LDLTx programs in Egypt did not witness similar progress other programs encountered in countries with comparable economic and social structures, in spite of skilled and experienced teams and up to date equipment and technology. The obstacles facing LDLTx programs can be located within the ethical, legal, financial and social interactions which govern Egyptian society today.
These concerns include the negative impact of the living donor kidney Tx program throughout the last 2 decades resulting in organ trade. In addition to the Ethical Committee, the establishment of the Donor Committee has allowed for the careful scrutiny of potential donors, checking for family ties, the physical and mental well being of the donor, donor integrity, family pressure and donor awareness of risks associated with the procedure. Nevertheless, it is still very difficult to find a healthy donor given the high prevalence of HCV coupled with steatosis and Schistosomiasis. Opponents of the cadaveric brain death concept continue to use the same argument and alarm people of the disadvantages of donation without there being a well planned media campaign to enlighten the masses about organ donation whether cadaveric or living and given that 45% of Egyptians are illiterate, the willingness of potential donors is jeopardized. The exorbitant costs then would pose another problem with more than 20% of Egyptians living below the poverty line and who would not be able to afford the expenses of Tx, in addition to the lack of state funds and medical insurance programs that cover such procedures. It now costs up to L.E. 450,000 for LDLTx in private hospitals with the amount decreasing by about one half in subsidized hospitals and an increasing number of patients every year requiring Tx (1000-2000 patients). With the state incurring about L.E. 1.3 billion on dialysis and cancer patients every year, what little is left for other health priorities remains negligible.
The Chinese cadaveric liver transplant program has emerged as a strong competitor with a program relying on incarcerated prisoners awaiting the death sentence. Egyptian patients unable to find suitable relatives to donate or even those who do not wish to expose their loved ones to the risks associated with Tx are opting for the Chinese program as a last resort. With obstacles like these, what prospects does an LDLTx program in Egypt have in the absence of legislation?

Abstract# 225 Poster Board #-Session: P27-II

THE RISK OF RIGHT LOBECTOMY IS THE SAME OF LEFT LATERAL SEGMENTECTOMY? COMPARATIVE ANALYSIS OF THE LIVE LIVER DONATION RISK USING A SEVERITY GRADING SYSTEM. Lucio F. Pacheco-Moreira[1], Rodrigo C. Amil[1], Marcelo Enne[1], Lucio Auler[1], Alexandre Cerqueira[1], Elizabeth Balbi[1], Jefferson Alves[1], José Manuel Martinho[1]. [1]*Liver Transplantation Unit, Bonsucesso General Hospital, Rio de Janeiro, Brazil.*
Background/Aim: The use of living donor (LD) for liver transplantation was initiated for children and, it is now a common practice, accounting for approximately 30% of pediatric liver transplantations. In almost all pediatric cases, LD is submitted to a left lateral segmentectomy (LLS). The use of LD for adult recipients requires the right liver to be removed from the donor. Clavien proposed a classification to grade negative outcomes in surgery. The aim of this study is to compare the morbidity between LD submitted to a right lobectomy (RL) or a LLS, using a grading system.
Methods: From Dec/01 to Nov/06, 32 patients underwent to RL (group 1) and, 29 underwent LLS (group 2). Data were obtained through review of the medical records. Morbidity was defined as any complication or unexpected event that was not inherent to the surgery, which caused a deviation from the expected postoperative course. A modification of the Clavien classification was used to grade the severity of complications. We investigated whether right liver donation had a higher incidence of complications than left lobe donation. A chi-square test was used to compare the morbidity in these two groups, with significant level established at 5%.
Results: There was no donor mortality in this series. 24,5% of all LD presented at least one complication, 29.0% of group 1 and, 20.7% of group 2 donors (p>0,05). When only more severe complications were analyzed (grade 2/3), 8,1% of donors presented complications. Group 1 presented 12.5% of grade 2/3 and, group 2 presented only 3.5% (p>0.05). Maybe these differences were not significant due to the small number of included patients. Especially, when only more severe complications are analyzed, these seem to occur more complication in donors submitted to RL.
Discussion: RL is a more invasive surgery than the LLS. The last should be associated with a lower risk of complication but we certified that the incidence of morbidity was the same in both groups. When graded by severity, we could observe that complications in group 1 were more severe than complications in group 2. A mandatory registry that uses a standard classification for complications is an essential step in assessing donor risks.

Abstract# 226 Poster Board #-Session: P28-II

DONOR SAFETY IN DONOR RIGHT HEPATECTOMY WITH THE INCLUSION OF MIDDLE HEPATIC VEIN IN LIVING DONOR LIVER TRANSPLANTATION.

Burcin Taner[1], Murat Dayangac[1], Deniz Balci[1], Zahide Kurt[1], Baris Akin[1], Suleyman Uraz[1], Cihan Duran[1], Sameer Smadi[1], Yildiray Yuzer[1], Yaman Tokat[1]. *[1]Department of Surgery, Florence Nightingale Hospital, Istanbul, Turkey.*

The harvesting of the middle hepatic vein (MHV) with the right lobe (RL) graft for living-donor liver transplantation allows an optimal venous drainage for the recipient however, it has been speculated that it was too extensive an operation for the donor. This study evaluates the restoration of liver functions and early clinical outcome in donors undergoing right hepatectomy with (MHV+) or without MHV (MHV-) harvesting.

From January 2005 to September 2006, a total of 50 donor right hepatectomies were performed with (n=26) or without (n=24) the inclusion of the MHV. The decision to take MHV with the RL graft was made based on the size of the MHV tributaries from the anterior segment, right hepatic vein / MHV dominance, graft-to-recipient weight ratio (GRWR), and the remnant liver volume.

The ages and BMI of the donors were similar (38.3±9 vs. 39.1±11 and 24.5±3 vs. 24.7±3, respectively). The parenchymal transection time was 92±30 minutes in the MHV (+) group compared with 76±37 minutes in the MHV (-) group (not significant). Blood loss in the MHV (+) group was 370±289 ml compared with 321±139 ml in the MHV (-) group (not significant). The actual graft weight and remnant liver volume ratio were similar in both groups (807±108 gr. vs. 860±155 gr. and 35.8±4% vs. 35.3±3%, respectively).

Postoperative liver function tests showed that maximal blood levels of bilirubin and INR were similar in the MHV (-) and MHV (+) groups (6.7±5 mg/dl vs. 4.9±3 mg/dl and 1.8±0.3 vs. 1.8±0.2, respectively). There was no donor mortality in either group. Hospital stay in both groups were similar (10.8±3 in MHV (+) group vs. 9.7±2.5 in MHV (-) group).

The results of this comparative study show that right hepatectomy including the MHV neither affects morbidity nor impairs early liver function in donors. The decision, therefore, of the extent of right lobe donor hepatectomy should be tailored to the particular conditions considering the graft quality and metabolic demand of the recipient.

Abstract# 227 Poster Board #-Session: P29-II

LIVING DONOR LIVER TRANSPLANTATION IN MEXICO.

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Purpose: Our center has the largest liver transplant program in Mexico and is also the only active center performing live donor liver transplantation (LDLT) in the country. The goal of this report is to present our results with LDLT. **Methods:** Our study included all consecutive living donor liver transplants performed in adults between August 2001 and November 2005, and we looked into demographic data of the recipients, patient and graft survival and postoperative complications among other variables. We also reviewed complications of the donors. **Discussion:** A total of 22 consecutive livers grafts from living donors were transplanted in 22 recipients. There was no significant difference between gender (54.6% males and 45.4% females) with a mean age of 43±9 years with ranges of 21-63. Hepatits C virus infection and primary biliary cirrhosis were the most common indications for OLT with 36.3% and 27.3% of the cases respectively, followed by non-alcoholic steato-hepatitis and autoimmune hepatitis (13.6% and 9%), and being the rest of liver diseases from cryptogenic causes. Postoperative bleeding and biliary complications were seen in 18.1% and 22.7% of cases respectively. Hepatic artery thrombosis incidence was 9.1%. Our standard immunosuppression was with cyclosporine, mycophenolate mofetil and prednisone, and 31.8% of the patients were treated for acute rejection. Patient survival rate was 81.8% at one year. While donors presented no mortality, 12 of them (54.5%) presented 20 complications. According to Clavien´s classification those complications were 37% grade I, 9% grade IIa and 54% grade IIb. Donor reoperation rate was 13.6% (3/22). Liver transplantation in our institution has good long term results comparable with other centers according to the outcomes generally accepted among the international transplant community. Living donors are a good source of liver grafts providing an alternative to the shortage of organs. This is the first report of LDLT activity in Mexico.

Abstract# 228 Poster Board #-Session: P30-II

EARLY EXPERIENCE WITH LIVING RELATED DONOR LIVER TRANSPLANTATION, JORDAN HOSPITAL.

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Background: Liver disease is a major health problem in the Middle East, resulting in a substantial number of patients suffering from life-threatening complications of end-stage liver disease. Liver transplant is a standard treatment for end stage liver disease, increasingly end stage liver disease is seen in Jordan, and there was an obvious need for a liver transplant program in Jordan. Living donor liver transplant program started at Jordan hospital in September 2004. This program continues to date, with a total of 23 procedures have been performed so far in our centre.

In this presentation, the result of liver transplantation at the largest liver transplant center in Jordan is presented with a special emphasis on the difficulties hindering the expansion of such programs.

Patients and Methods: A series of 23 liver transplant procedures were performed between September 2004 and November 2006. This is the largest series of liver transplant cases reported to date in Jordan. Patient data were retrospectively analyzed with a special emphasis on age, sex, indication, Child's class and MELD score, mortality and morbidity.

Result: The actuarial survival rate at three months and one year was 86% and 73%, respectively. The dominating cause of early death was sepsis, renal failure and surgical complications. Late death was generally due to biliary complications causing sepsis and multi-organ failure (MOF); no vascular or ischemic causes were encountered, 40 % of complication in general was biliary in origin.

Conclusion: The outcome of sick patients especially ICU ones was not as good as others because of poor general condition, renal complication and the possibility of infection. They will not tolerate complications of living donor liver transplant if they happen. These patients should be done preferably with non heart beating donors if possible. However, liver transplantation still an option in Jordan.

Abstract# 229 Poster Board #-Session: P31-II

THE COORDINATION OF THE LIVING RELATED LIVER TRANSPLANT PROGRAMME IN THE UKE-HAMBURG.

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The practical feasibility of splitting liver opened up a spectrum of removing part of the liver from a living donor to graft it into a pediatric or an adult patient. Despite initial criticism, living related liver donation soon proved to be an inevitable development. Advantage of this successful alternative method is that in centers performing Living Donor Liver Transplantation (LDLT) the mortality of pediatrics and adults on the waiting list decreased, for children to almost zero. From the point of coordination the program requires a good infrastructure, highly qualified surgical teams as well as motivated personnel in the allied departments ie radiology, microbiology, anaesthesiology etc.

This abstract will describe the practical experiences and give an overview concerning the organizational structure and logistical aspects of the LDLT program at the University hospital, Hamburg.

CONCLUSION:

In the University hospital, Hamburg, 221 living donor liver transplantations have been performed up to October 2006 , the coordination and logistics have evolved over a period of time based on our experience during this period. Also , during this period the surgical techniques have evolved and recently we have reported our excellent results about paediatric living related transplant from this institute. Living donor liver transplant is a powerful surgical method for the efficient treatment of end-stage liver disease because it opens up the possibility of calculating an optimal timing of transplantation. However, such a program demands high skills and qualities of the whole transplant group. This includes the donor evaluation, the radiological diagnostics and the psychological counselling, organized by an optimal acting coordination which has to ensure that all involved teams work hand in hand.

The LDLT coordination at the department of hepatobiliary surgery and liver transplantation of the University Hospital Hamburg is described . However, we do not claim that this pathway is the perfect way of LDLT coordination but it gives some helpful guidelines and insight of how to run the LDLT programme in a smooth and efficient manner.

Abstract# 230 Poster Board #-Session: P32-II

CORTICOSTEROID WITHDRAWAL RESULTS IN RESTORATION OF MYELOID DENDRITIC CELL FUNCTION: IMPLICATIONS FOR IMMUNOSUPPRESSIVE THERAPY? Brenda M. Bosma[1], Herold J. Metselaar[1], Nicole M. A. Nagtzaam[1], Shanta Mancham[1], Hugo W. Tilanus[2], Jaap Kwekkeboom[1]. *[1]Gastroenterology and Hepatology, ErasmusMC, Rotterdam, Netherlands; [2]Surgery, ErasmusMC, Rotterdam, Netherlands.*

Recent data indicate that corticosteroids are capable of suppressing maturation of myeloid dendritic cells (DC). Since rejection after organ transplantation is initiated by DC that activate allo-reactive T-cells, corticosteroids may interfere with the allo-response at its earliest stage. Here we assessed whether corticosteroids suppress DC function *in vitro* and *in vivo,* and whether suppression is irreversible.

Methods. $CD1c^+$ DC were isolated from blood of healthy controls (HC) (n=11) and LTx-recipients (2 weeks post-LTx) (n=8). LTx-recipients were treated with prednisolone during the first 3 months (starting at 100-50 mg/day in week 1 and thereafter 15 mg/day). To study the effects of corticosteroids *in vitro*, DC from HC were pretreated with 1 µM dexamethasone (dex) o/n and matured with LPS for 24h in the presence or absence of dex. To study the effects of corticosteroid treatment, DC from LTx-recipients and HC were matured *ex vivo* for 24h with pro-inflammatory cytokines. DC maturation by flowcytometry (expressed as mean fluorescence intensity) and T-cell stimulatory capacity were determined.

Results. Dex pre-treated DC matured in presence or absence of dex had a reduced expression of CD86 (1575±180 and 1833±215 vs.1993±106, resp.; $p<0.008$) and CD83 (54±15 and 60±17 vs. 103±43, resp.; $p<0.017$) compared to untreated DC. However, presence of dex during DC maturation was necessary to significantly inhibit allogeneic T-cell proliferation ($p= 0.012$). Two weeks after LTx expression of HLA-DR and CD86 on DC was significantly reduced compared to pre-transplantation values (834±64 vs. 400±111, 48±5 vs. 70±6 resp., $p<0.01$). Though *ex vivo*, DC from LTx-recipients and from HC responded equally to pro-inflammatory cytokines with up-regulation of HLA-DR and CD80 (5719±1118 vs. 6764±717, and 166±23 vs. 186±17 resp.). Only up-regulation of CD86 was partially impaired on DC from the LTx-recipients (455±76 vs. 752±81 resp., $p=0.036$). Moreover, the capacity of *ex vivo* matured DC from LTx-recipients and from HC to stimulate allogeneic T-cell proliferation was similar.

Conclusion. Corticosteroids suppress maturation of human blood DC both *in vitro* and *in vivo,* but withdrawal of corticosteroids results in restoration of DC function. Thus continuous corticosteroid therapy may be important to prevent acute rejection.

Abstract# 231 Poster Board #-Session: P33-II

VERY LOW VALUES OF THE CYLEX IMMUKNOW ASSAY ARE ASSOCIATED WITH EARLY POST-OPERATIVE DEATH FOLLOWING LIVER TRANSPLANTATION. Kenzo Hirose[1], Federico Aucejo[1], Koji Hashimoto[1], Cristiano Quintini[1], Shunichi Nakagawa[1], Rebecca Corey[1], Kalman Benscath[1], Bijan Eghtesad[1], Dympna Kelly[1], John Fung[1], Charles Miller[1]. *[1]General Surgery, Cleveland Clinic Foundation, Cleveland, OH, USA; [2]Pharmacology, Cleveland Clinic Foundation, Cleveland, OH, USA.*

PURPOSE: The goal of this study is to correlate outcomes following liver transplantation with Cylex immune cell function (ImmuKnow) assay levels.

METHODS: A retrospective review was performed of patients who had undergone liver transplantation between January 2006 and August 2006 and had ImmuKnow assays measured at any point during the post-transplant period. ImmuKnow assays were measured at various points during the post-transplant period, ranging from 2 days to 9 months post transplant. Calculation of average postoperative ImmuKnow level was performed and correlated with the occurrence of biopsy proven rejection, infectious complications, and patient death.

RESULTS: 54 patients who underwent 59 liver transplants had ImmuKnow assays measured. Follow-up ranged from 1 month to 10 months post-transplant. Overall mean ATP level was 265 ng/ml for the entire group. When stratified for average ATP level, patients with ATP levels below 224 ng/ml exhibited a significantly higher rate of postoperative death (Table 1). Rate of acute rejection and infectious complications did not appear to be significantly different among the three groups. Among the 6 patients who died during the follow-up period, 5 exhibited at least one very low ATP level below 50 ng/ml. All 6 patients died of septic complications with only 1 patient experiencing an episode of acute rejection.

CONCLUSION: Low ATP levels as measured by the Cylex ImmuKnow assay is correlated with early death (< 1 year) following liver transplantation. Patients with very low ATP levels (<50 ng/ml) represent a highly immunosuppressed population and are at high risk of sepsis and death. These patients should be followed closely and could benefit from reduction in immunosuppression.

Outcomes for various average ATP levels post-transplant

	0-224 ng/ml	225-525 ng/ml	>525 ng/ml
n	21	31	2
deaths ($p<0.05$)	5	1	0
rejections	3	9	0
infections	16	25	2
average LOS (days)	28.8	20.0	25
ICU days	11.5	7.6	2.0

Abstract# 232 Poster Board #-Session: P34-II

PHARMACOKINETIC ASPECTS OF TACROLIMUS DURING THE FIRST FOUR DAYS AFTER LIVER TRANSPLANTATION. CONTRIBUTION TO OBJECTIVE DOSE ADJUSTMENT. Luiz F. Veloso[1], Paulo R. Savassi-Rocha[1], Maria Cecília S. Lúcio Oliveira[1], Karrim Boudjema[2]. *[1]Instituto Alfa de Gastroenterologia, Universidade Federal de Minas Gerais, Belo Horizonte, Minas Gerais, Brazil; [2]Departement de Chirurgie Viscerale et Transplantation, Centre Hospitalier Universitaire de Rennes, Rennes, Bretaigne, France.*

The aim of the present study is to describe the pharmacokinetic behavior of tacrolimus during the first four days after liver transplantation and to contribute to the establishment of an objective method for dose adjustment. In a prospective self-paired study, the residual blood concentration of tacrolimus and its relationship with the administered dose were analyzed in 203 adult recipients of whole liver grafts during the first four days after transplantation. An objective strategy for the definition of dose adjustment based on blood concentration was established. A progressive increase in blood tacrolimus concentration was observed during the first 60 hours of drug use. Thereafter, stabilization of the ratio between the concentration obtained and the dose administered was observed. Linear regression showed a 1.862-, 1.477- and 1.080-fold variation in the concentration/dose ratio at 24 hours after the first, second and third dose, respectively. The variation in this ratio showed good linearity over time, mainly after the second dose (Pearson's R^2: 0.809 to 0.851). After three subsequent dose adjustments using the traditional method, the proportion of patients with adequate blood concentrations of the drug remained unchanged (43.3% versus 60.8%, $p=0.758$). In conclusion, we found that the method of daily measurements of residual concentration is insufficient to prevent the occurrence of inadequate tacrolimus levels, at least when the subsequent dose adjustment is performed empirically. Dose adjustment should take into account the tendency toward an increase in blood concentration of the drug during the first 60 hours, in order to prevent elevated blood levels of the drug on subsequent days. The following equation is suggested for the estimation of the necessary dose: dose = target concentration / [(current concentration / vesperal dose) * A], where *A* corresponds to the expected variation in the concentration/dose ratio according to the number of doses of the drug administered until the time considered for adjustment (1 dose = 1.862, 2 doses = 1.477, 3 doses = 1.080).

Abstract# 233 Poster Board #-Session: P35-II

IMMUNOMODULATORY EFFECT OF INGREDIENT FROM CHINESE HERBAL MEDICINE ISODON SERRA, NODOSIN, ON RECIPIENT AFTER ORTHOTOPIC LIVER TRANSPLANTATION IN RAT. Jiyu Li[1], Zhiwei Quan[1], Jianwen Liu[2], Yan Zhang[2]. *[1]General Surgery, Xinhua Hospital, Shanghai, China; [2]Pharmacology, National Key Lab of Bioengineering, Shanghai, China.*

Objective This study was aimed to explore the function of effective ingredient, Nodosin, from Chinese herbal medicine Isodon Serra on immuno-modulation in T cells derived from spleen, inflammatory animal model, as well as recipient after orthotopic liver transplantation (OLT) animal model.

Methods Compared with common used immunodepressant FK506, immunogen(ConA)-stimulated T cell proliferation inhibition was investigated by MTT assay. And inhibition effect on inflammatory animal model was also explored. Furthermore, allochthonous OLT(Wistar→SD) was performed

in rats. T-cells subgroup classification in peripheral blood of recipient was investigation by flow cytometry(FCM) to identify the effect of Nodosin on immunomodulation.
Results Significant Inhibition effect Both on ConA-stimulated T cell proliferation (1.17±0.02 vs 1.51±0.01, p<0.05) and inflammatory lever of animal model (1.0±0.1 vs 4.0±0.3, p<0.05) were detected by Nodosin concentration-dependently. Using FCM, Growth arrest in G1 phase of cell cycle was detected in ConA-stimulated T cells proliferation. In inflammatory animal model, Nodosin caused down-regulation of the serum lever of IL-2 (614±121 vs 1149±69, p<0.05) but not that of IL-10 (41±18 vs 56±8, p=NS). The immunomodulatory effect of Nodosin in its mid and high concentration was equal or fairly stronger than that of FK506 both in vivo and in vitro. In OLT model, CD4+CD25+ T-cell counts of peripheral blood, as well as NK cell counts, was significantly decreased by Nodosin.
Conclusion Nodosin from Isodon Serra might have potential immunosuppressive effect on recipient after liver transplantation.
[Key Words]
Nodosin; Isodon Serre; Immunomodulation; Orthotopic Liver Transplantation
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Abstract# 234 Poster Board #-Session: P36-II

IMMUNOSUPPRESSIVE THERAPY IN LIVER TRANSPLANT WITH COMPLETE OR PARTIAL GRAFTS. THE ROLE OF MYCOPHENOLATE MOFETIL. Constantino Fondevila, Amelia Hessheimer, Ramon Charco, David Calatayud, Ricard Corcelles, Joana Ferrer, Jose Fuster, Miguel Navasa, Antoni Rimola, Juan C. Garcia-Valdecasas. [1]*Surgery, Hospital Clinic, University of Bacelona, Barcelona, Spain.*
Patients and methods. A retrospective study was designed to evaluate the use of mycophenolate mofetil (MMF) as adjuvant immunosuppressive therapy in two cohorts of patients transplanted with livers from living (LDLT) and deceased (DDLT) donors. Ninety six patients transplanted between January 2000 and April 2004 were included (32 LDLT, 64 DDLT), with similar follow-up in both groups (41 vs 39 months). All patients had normal pretransplant renal function and initial immunosuppressive with tacrolimus and corticosteroids. Adverse effects, immunosuppression changes, and episodes of rejection were evaluated during the first two years.
Results. There were no significant differences in serum levels of tacrolimus (month 3: 11.8±10.2 LDLT vs 11.1±5.9 DDLT) or corticosteroid dosages. Adverse effects associated with the initial regimen were: arterial hypertension, 18% LDLT vs 41% DDLT (p<0.05); diabetes mellitus, 41 vs 39%; neurological complications, 31 vs 16%; and renal insufficiency, 28 vs 44%, respectively. These effects required a reduction in the tacrolimus dosage and simultaneous addition of MMF in 16 LDLT (50%) and 31 DDLT (48%). MMF was added before month 3 in the majority of the cases (14 LDLT and 27 DDLT), and in these patients there was a notable improvement in renal function at months 12 and 24, which reached statistical significance in the LDLT group (p<0.05). Histologically proven acute rejection, the majority of which was mild and occurred during month 1, was found in 17 LDLT (53%) and 28 DDLT (44%). MMF was suspended in 2 LDLT and 4 DDLT due to adverse effects.
Conclusions. MMF is safe and plays an important role in the immunosuppressive therapy in hepatic transplant with complete or partial grafts. High rates of toxicity with tacrolimus in the early posttransplant period necessitate a dosage decrease and adjuvant therapy with MMF. An immunosuppressive induction regimen that includes MMF should be considered as potential prophylaxis against the adverse effects of tacrolimus and early episodes of acute rejection.

Abstract# 235 Poster Board #-Session: P37-II

DIAGNOSIS AND TREATMENT OF FUNGAL INFECTIONS FOLLOWING LIVER TRANSPLANTATION. Wang Lin, Zhao Qingchuan, Tao Kaishan, Cao Dayong, Zhang Wei, Dou Kefeng. [1]*Center of Organ Transplantation, Xijing Hospital, Fourth Military Medical University, Xian, China.*
[Objective] To summarize the manifestation of fungal infections following liver transplantation and discuss the diagnosis and treatment of it. **[Methods]** A total of 112 cases with liver transplantation in our center were retrospectively analyzed, with the purpose of investigating the clinical manifestation of fungal infections, and discussing the diagnosis and treatment of it. **[Results]** Among the 112 cases, 9 were regarded as fungal infections following liver transplantation, the incidence was 8.0%, 5 were dead and the mortality was 55.6%. **[Conclusion]** With the use of broad-spectrum antibiotics and immunosuppressive drugs, fungal infections following liver transplantation became much more prevalent, the importance of the diagnosis and treatment related to it should be better noticed.

Abstract# 236 Poster Board #-Session: P38-II

INDICATIONS AND MANAGEMENT OF m-TOR AFTER LIVER TRANSPLANTATION. Itxarone Bilbao[1], Sapiscochin Gonzalo[1], Dopazo Cristina[1], Castro Ernesto[1], Escartin Alfredo[1], Castells Luis[2], Lazaro L. Jose[1], Lopez Inigo[1], Balsells Joaquin[1]. [1]*Liver Surgery and Transplantation, Hospital Vall d'Hebron, Barcelona, Spain;* [2]*Hepatology, Hospital Vall d'Hebron, Barcelona, Spain.*
OBJETIVE: To analyse our experience with the use and management of m-TOR after liver transplantation (LT).
METHODS: From 1988 to 2006 730 LT were preformed in our center in 686 patients. Forty one patients (5.9%) received inmunosupression with m-TOR: Rapamicine (31) and Everolimus (10). Median age was 55.3 (r: 24-70). The causes for conversion, time from LT to conversion, follow-up and adverse events after conversion were analysed in this group of patients.
RESULTS: Causes for conversion were: renal failure and refractory rejection 9 (21%), refractory rejection 7 (17%), extended hepatocarcinoma 7 (17%), recurrence of hepatocarcinoma 7 (17%), renal failure 5 (12%), other adverse events secondary to CNI 4 (10%), de novo tumor 2 (5%). The time between LT and conversion was 19 months (r: 10 days-122 months). The mean follow-up with m-TOR was 11 months (r: 15 days-55 months). Eight of the 16 patients with rejection resolved their rejection, 3 required a re-LT, 1 developed a chronic rejection and 3 died because of non resolved rejection, over inmunosupression and sepsis. Forty three percent of the 14 patients with renal failure improved renal function. None of the 7 patients with extended hepatocarcinoma had a recurrence. Two patients out of the 7 who had hepatocarcinoma recurrence after LT stopped progression. The two patients with de novo tumor were operated and no evidence of recurrence has been seen. Patients with other adverse events of CNI had a favorable evolution. The most common side effects of m-TOR were dislipemia (40%) and infections (14%). Twelve patients (29%) gived up m-TOR: non-efficacy 6, side effect resolution 3, surgery 2 and side effects 1.
CONCLUSION: m-TOR are indicated in situations where other inmunosupression has failed: in the early period for a refractory rejection and as a prophylaxis for recurrence of extended tumors; in the late period for patients with side effects of CNI.

Abstract# 237 Poster Board #-Session: P39-II

MODIFICATION OF DONOR RISK FACTORS AFFECTS THE GRAFT SURVIVAL IN LIVER TRANSPLANTATION. Dmitriy Nikitin[1], Tariq Khan[1], Edmund Q. Sanchez[1], Srinath Chinnakotla[1], Henry B. Randall[1], Greg J. McKenna[1], Richard Ruiz[1], Nicholas Onaca[1], Marlon F. Levy[1], Robert M. Goldstein[1], Goran B. Klintmalm[1]. [1]*Transplant, Baylor Regional Transplant Institute, Dallas/Ft. Worth, TX, USA.*
The donor liver shortage and growing waiting list make it more urgent to optimize the use of available organs. This study was designed to assess the impact of the donor factors on graft survival after liver transplantation, including long-term results.
Materials and Methods: Data from 1894 adult liver transplants were prospectively collected into the computerized database and then retrospectively analyzed. The statistical analysis was applied to find the risk factors associated with decreased graft survival. All donor livers were biopsied routinely after reperfusion.
Results: Severe liver macrovesicular steatosis (20% to 40%) had a clear negative impact on the graft survival (p=0.0064). One-year survival was 42.9% in this group. Cold ischemia time was a significant factor with a hazard ratio 1.285 (p=0.0004) after 8 hrs (1-year survival was 80.7%). This factor is one of the major modifiable factors that influence graft survival. Donor age was a significant factor that increases continuously and has a hazard ratio 1.531 (p<0.0001) for donors over 50 years (1-year survival was 81.3%). However, with short cold ischemia time, < 4 hrs, one-year survival of 85.7% can be achieved. Female donor to male recipient combination had a hazard ratio 1.318 (p=0.0021) and 1-year survival was 78.8%. Combination of risk factors (donor age over 50 years, female donor to male recipient combination and cold ischemia time over 8 hrs) had negative impact on survival (p<0.0001)

and 1-year survival was 89.0% without risk factors, 80.6% with one risk factor, 75.3% with two risk factors and 68.3% with three risk factors. Warm ischemia time, donor body mass index, donor days in ICU, donor days in hospital, were not statistically significant independent risk factors.

Conclusion: The score based on donor age, female donor to male recipient combination, cold ischemia time is highly predictive of the risk of liver transplant. Severe macrovesicular steatosis of donor liver may provide additional information in difficult cases. Even with high risk donors, good one-year graft survival results can be achieved by modifying the risk factors (cold ischemia time less than 4 hrs).

Abstract# 238 Poster Board #-Session: P40-II

INCREASING ORGAN USE: LARGE, SINGLE CENTER EXPERIENCE WITH EXTENDED CRITERIA DONORS FOR LIVER TRANSPLANTATION. Adel Bozorgzadeh[1], George Tsoulfas[1], Randeep Kashyap[1], Peter Abt[1], Peter Horton[1], Manoj Maloo[1], Saman Safadjou[1], Maureen Graham[1], Ashokumar Jain[1], Mark Orloff[1]. *[1]Solid Organ Transplantation and Hepatobiliary Surgery, University of Rochester Medical Center, Rochester, NY, USA.*

Background: The disparity between demand and donor supply in liver transplantation, has led to the use of hepatic grafts from "extended criteria" donors (ECD) or "marginal donors".

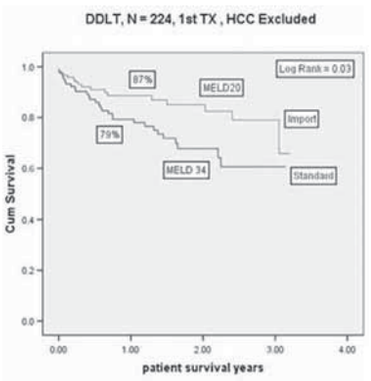
Objective: Compare the outcomes of ECD and "standard criteria" donor (SCD) allocation, to determine the utility of ECD as a viable answer to organ shortage.

Methods: A single center, retrospective analysis was performed of 363 deceased-donor liver transplants at our center between January 2003 and March 2006.This included 165 SCD (45.5%) and 198 imported organs/ ECD (54.5%), which were the two groups compared. Recipient and donor characteristics were analyzed (see table, *p=0.01), as well as patient survival (see figure).

Results: There was no difference in the recipient age, cold ischemic time (CIT) or number of pressors used in the donor. However, there were statistically significant differences in the donor age, a finding that went along with the higher Donor Risk Index in the ECD vs. the SCD group. Overall 1-year patient survival between the two groups was not statistically significant. However, the prevalence of hepatocellular carcinoma (HCC) (outside Milan criteria) was significantly higher in the ECD group and when patients with HCC were excluded (69 pts), there was a statistically significant benefit in 1-year survival for the ECD group (87% vs. 79%).

Conclusion: These results regarding the use of ECD livers represent one of the largest single center experiences in the topic to date. Although their use should be tempered with careful selection of the recipient, they undeniably represent a viable option for expanding the donor pool.

	SCD (n=165)		ECD (n=198)	
	Mean	Median	Mean	Median
Recipient Age	52.5	52.8	54.9	54.9
Donor Age	46.9	49.0*	52.6	54.0
MELD score	32.3	34.0*	18.9	19.0
DRI	1.6	1.6	2.1	2.1*
CIT (hrs)	8.9	8.7	10.9	10.8
# Pressors	1.7	2.0	2.1	2.0
	Frequency		Frequency	
HCC pts	N=17	10.8%	N=52	29.2%*



Abstract# 239 Poster Board #-Session: P41-II

USING LIVERS FROM HEPATITIS-C POSITIVE DONORS DOES NOT ADVERSELY IMPACT ON SURVIVAL. Randeep Kashyap[1], George Tsoulfas[1], Peter Horton[1], Mark Orloff[1], Peter Abt[1], Manoj Maloo[1], Maureen Graham[1], Saman Safadjou[1], Ashokumar Jain[1], Adel Bozorgzadeh[1]. *[1]Solid Organ Transplantation and Hepatobiliary Surgery, University of Rochester Medical Center, Rochester, NY, USA.*

Background: Marginal donors are increasingly being used to overcome the shortage of organs.

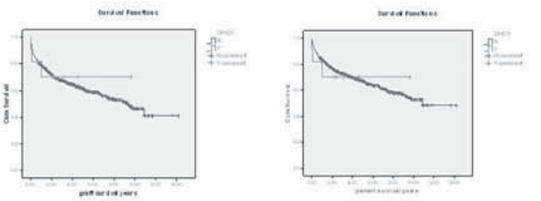
Aim: We reviewed our experience with using livers from hepatitis-C virus positive (HCV+ve) donors for transplantation.

Patients and methods: There were 953 orthotopic liver transplants (OLTx)s performed in 786 recipients at our institution between 1992 and 2005. There were 798 (83.7%) cadaveric donors of which 265 livers went to HCV+ve recipients. Twelve of these HCV+ve recipients received livers from HCV+ve donors.

Results: HCV+ve recipients receiving HCV+ve livers were 83.3% male, mean age 48.5 years (yrs) compared to 65.4% male, mean age 51.1 yrs for recipients transplanted with livers from HCV-ve donors. MELD scores at time of listing and on day liver offered were mean 18.7 (SD+/-7.3) vs 24.0 (SD+/-9.5) and 14.8 (SD+/-4.8) vs 21.1 (SD+/- 10.0). The twelve HCV+ve donors were 80.3% male, mean age 41.2 yrs compared to 56.1% male, 45.7 yrs for HCV-ve donors. Donor risk index was mean 1.73 (HCV+ve donors) vs 1.98 (HCV-ve donors) (p=NS). Four HCV+ve donors (33.3%) were co-infected with hepatitis-B virus (HBV) compared to 65 HCV-ve donors. Mean cold ischaemia time was 11.3 hours (HCV+ve donors) compared to 10.7 hrs (HCV-ve donors). There was no significant difference between HCV+ve and HCV-ve donor demographics. None of the HCV+ve recipients receiving HCV+ve donor livers lost their graft from recurrent HCV.

Graft survival at 1, 3 and 5 yrs in recipients of HCV+ve and HCV-ve livers was 81.8%, 70.1%, 70.1% vs 91.3%, 86.5%, 84.0% respectively Figure 1. Patient survival at 1, 3 and 5 years in recipients of HCV+ve and HCV-ve livers was 81.8%, 70.1%, 70.1% vs 94.9%, 90.7%, 88.2% respectively Figure 2. There was no significant difference in graft or patient survival.

Conclusion: Livers from HCV+ve donors can be transplanted safely and are associated with graft and patient survival equivalent to that obtained with livers from HCV-ve donors.



Abstract# 240 Poster Board #-Session: P42-II

EXTENDED CRITERIA DONORS AND PARTIAL GRAFTS TO EXPAND THE DONOR POOL: IMPACT ON THE OUTCOME. Marco Spada[1], Marcello Spampinato[1], Lucio Mandalà[1], Salvatore Gruttadauria[1], Domenico Biondo[1], Giovanni Vizzini[1], Antonio Arcadipane[1], Angelo Luca[1], Silvia Riva[1], Bruno Gridelli[1]. *[1]Surgery, ISMETT, Palermo, Italy.*

Introduction: We analyzed our experience with extended criteria donors (ECD) and partial grafts (PG) for adult and pediatric recipients used to expand the donor pool in an area with shortage of deceased donors (DD). **Materials and methods:** From 1999 till August 2006 we performed 345 liver transplants (LTx). In the first 3 years 75 LTx were performed using whole grafts (WG) from standard deceased donors (SDD) and 7 grafts from living donors (LD) on 71 adult recipients. Since June 2003 we have been using ECD and PG; moreover a pediatric liver transplant program was started. Since then 190 adult and 52 pediatric primary LTx have been performed using 178 DD and 46 LD. Among DD, 99 were SDD used for WG procurement (55) and for split liver (SL) (44) while 69 were ECD used for WG procurement (65) and SL (5); 49 SL procurements were performed and, in 19 cases, we implanted both the left lobe segment (LLS) and extended right graft (ERG) while 30 SL were shared with other centers; 31 ERG were implanted into 24 adults and 7 children, 35 LLS were implanted into children; 9 SL procurements were performed in pediatric donors. Results are summarized in table 1. A significant difference was found in the MELD score between WG-SDD vs. LD (p 0.004). There was no difference in graft and patient survival among

the four adult subgroups. **Discussion:** In our experience the outcome of adult recipients receiving a WG-SDD was comparable with those receiving a ECD and PG. The systematic use of ECD along with SL and LD allow to safely expand the donor pool in an area where the donation rate is low (6 DD per million inhabitants). Moreover this policy allowed to transplant all the children in need of liver transplantation.

Table 1

	Adult				**Pediatric**		
Graft	WG-SDD	WG-SDD	ERG	LD	WG	LLS	ERG
n	55	65	24	46	10	35	7
Age (m±sd)	54±8	54±10	53±14	54±13	8±6	3±3	12±3
Sex (M/F)	35/20	55/10	11/13	30/16	5/5	21/14	5/2
MELD/PELD (m±sd)	17±9	16±10	18±9	13±6	15±8	14±8	21±17
Graft survival (%)	87	82	79	75	80	76	83
Patient survival (%)	90	85	79	79	100	81	100
Retransplantation (%)	11	3	0	8	20	11	14
PNF (%)	0	2	8	4	10	9	0
DGF (%)	4	8	0	0	0	3	0
Vascular complications (%)	2	8	0	15	10	3	14
Biliary complications (%)	33	38	25	41	20	23	14

Abstract# 241 Poster Board #-Session: P43-II

AGE DONOR OVER FIFTYS DECREASE SURVIVAL RATE AFTER LIVER TRANSPLANTATION. Ilka F. S. F. Boin[1], Marilia I. Leonardi[1], R. Stucchi[1], Helbert M. Palmiero, Patricia Kajikawa, Yumi B. F. Kaiahara. *[1]Unit of Liver Transplantation, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil.*

Introduction: marginal donor or expanded criteria donor has been used to increase the organ donor pool.

Aim: To verify if old donor (age over 50 years) modified the survival rate after liver transplantation.

Methods: 330 liver transplanted patients was analyzed retrospectively. We excluded retransplantation, acute hepatic failure, children and reduced organ. 232 patients records were obtained. The group A was defined as those whose donors were young and group B as whose had old donors. We analyzed donor variables (age, sodium, ICU time, steatosis and weight) and receptor variables (age, warm ischemia time, cold ischemia, BMI, surgery time, ICU time, hospitalar time, MELD and blood requirements. We used T-test and Kaplan -Meier survival analysis.

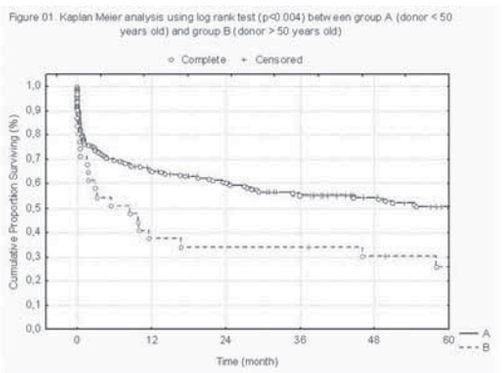
Results: There were significative differences between the groups when we analized the survival rate, ICU and hospitalar time. The group that used old donors (group B) presented lower 6-month, 1-year and 6-year survival than the group A. The group A median MELD score was 18 e the the group B median MELD score was 20 without significative difference. The other variables applied in this study were similar, see table 01 and figure 01.

Conclusion: We observed that the patients whose donors belongs to B group had lower survival rate, higher ICU and hospitalar time although the MELD score had been similar.

Table 01. Comparison between group A (donor < 50 years old) and B (donor > 50 years old) using T-test and Kaplan-Meier survival analysis (log-rank test).

Group	mean donor age (years)*	ICU (r) time (days)*	hospitalar (r) time (days)*	MELD	1-year survival rate
A	29	10	18	18	67%
B	55	27	22	20	38%

* ($p<0.05$); r = recipient



Abstract# 242 Poster Board #-Session: P44-II

MARGINAL GRAFT INCREASES EARLY MORTALITY IN LIVER TRANSPLANTATION. Flavio F. Galvao, Jose L. Almeida, Estela R. Figueira, Telesforo Bacchella, Marcel C. Machado. *[1]Transplant and Liver Surgery, University of Sao Paulo, Sao Paulo, Brazil.*

Expanded donor criteria (marginal) graft is an important solution for organ shortage; nevertheless, it rises ethical dilemma because may augment the risk of transplantation failure. There is lack of prospective and randomized trials assessing marginal graft in liver transplantation. This cohort study compares marginal and non-marginal graft in one hundred and three consecutive first liver transplantations for chronic hepatic failure. Graft status followed previously described scoring system. Pretransplant category of liver disease was distinguished as low-MELD (≤20) and high-MELD (>20). Experimental groups comprised: 1 – Global non-marginal liver recipients; 2 – Global marginal liver recipients; 3 - Non-marginal liver in low-MELD recipient; 4 – Non-marginal liver in high-MELD recipient; 5 – Marginal liver in low-MELD recipient 6 – Marginal liver in high-MELD recipient. Groups 1 and 2 were analyzed independently of groups 3, 4, 5 and 6 and vice versa. Significance index was 0,05. Comparison parameters consisted of one month and one year graft and recipient survival, serum peak of liver enzymes, post-transplant hospital stay and incidence of complications. There were no differences regarding post-transplant hospital stay, peak of enzymes and complications; in contrast, marginal graft decreased graft and recipient survival within the first month of transplantation (G 1 x G 2; p = 0.002*). High-MELD recipients of marginal graft achieved one year survival of 64% while low-MELD recipients of marginal graft achieved 100% (G3 x G6; p = 0.008*). From the beginning of the second month to one-year posttransplant period, survival comparison accomplished no differences. In conclusion, marginal graft increases mortality within the first month after liver transplantation. High-MELD recipients of marginal graft attained a poor survival index.

Abstract# 243 Poster Board #-Session: P45-II

DOES THE MELD ALLOCATION POLICY IMPROVE OUTCOME OF LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA? Takahiro Murakami[1], Javier Chapochnick[1], Alger Aquino[1], Ahmed Fahmy[1], Devon John[1], Glyn Morgan[1], Thomas Diflo[1], Lewis Teperman[1]. *[1]Transplant Surgery, New York University Medical Center, New York, NY, USA.*

Introduction: Following the introduction of the MELD allocation policy, Liver Transplantation (LT) for Hepatocellular Carcinoma (HCC) has increased significantly with shortened waiting times. However, the maximum benefit of LT for HCC patients may not have been reached. In this study, we examined the impact of the current MELD allocation policy on explant findings and the clinical course of HCC recipients after LT. **Patients and Methods:** Between October 1st, 1996 and September 30, 2006, 161 LT procedures were performed for HCC at our institution. We retrospectively compared explant pathological findings, HCC recurrence, and patient survival during the pre MELD era group (10/1/96-2/26/02; N=58) with the post MELD era group (2/27/02-9/30/06; N=103).

Results: In the post MELD era, LT for HCC were significantly increased from the previous time period (from 12% to 32%). The mean waiting time for HCC patients was also significantly shortened (from 694 to 259 days). Mean observation times were 57.5 months in the pre MELD group and 22.7 months in the post MELD group. By explant pathology, upstaged HCC (extended Milan criteria; solitary tumor >5cm, or multiple tumors > three or fewer lesions >3cm) were decreased from 43% to 36% (p=NS). Macrovascular invasion was decreased (13% vs 8% p=NS), and microvasclar invasion was similar (42% vs 41% p=NS). Poorly differentiated HCC was also decreased (18% vs 12% p=NS). The HCC recurrence rate was significantly decreased from 24% to 11% during this observation period ($p<0.05$). HCC recurrences were only seen in extended Milan criteria recipients in the pre MELD group, on the other hand, 4 of 12 HCC recurrences were from within Milan criteria recipients in the post MELD group (0% vs 33% $p<0.05$). Patient survival was improved in the post MELD era but did not reach statistical significance (1y: 84% vs 89% and 3y; 70% vs 75% p=NS).

Conclusion: In spite of a shortened waiting time and application of Milan criteria in the MELD system, significant improvement in explant findings and recipient survival have not been recognized in the post MELD era. In order to improve patient outcome and avoid wasting precious organs, a better patient selection criteria for LT possibly based on tumor biology as well as on tumor size and number may be warranted.

Abstract# 244 Poster Board #-Session: P46-II

ESTIMATION OF THE ACCEPTABLE WAITING TIME AND BEST CANDIDATES FOR TRANSARTERIAL CHEMOTHERAPY PRIOR TO LIVER TRANSPLANTATION IN PATIENTS WITH HEPATOCELLULAR CARCINOMA MEETING THE MILAN CRITERIA. Jong Y. Choi[1], Si H. Bae[1], Seung K. Yoon[1], Jung W. Jang[1], Dong G. Kim[2], Young S. Lee[3]. *[1]Dept of Internal Medicine, The Catholic University of Korea, Seoul, Republic of Korea; [2]Dept of Surgery, The Catholic University of Korea, Seoul, Republic of Korea; [3]Dept of Internal Medicine, Sunchunhyang University, Bucheon, Republic of Korea.*

Background/Aims: The aim of this study was to explore the acceptable waiting timing on the transplant list and a best candidate for transarterial chemo-lipiodolization prior to orthotopic liver transplantation (OLT).

Methods: In total, 180 consecutive hepatocellular carcinoma (HCC) patients receiving pretransplant chemo-lipiodolization were included in the study.

Results: Overall, 70 (38.9%) patients dropped off the waiting list during the follow-up. The median time to dropout was significantly shorter in Child-Pugh B/C than in A patients (17.0 vs. 33.3 months, $P < 0.001$). Risk factor analysis identified Child-Pugh classification to be the strongest predictor of dropout ($P < 0.001$). On multivariate analysis, alpha-fetoprotein (AFP) > 100 ng/ml, tumor size > 3 cm and multiple nodules remained independent predictors of dropout for Child A group (all $P < 0.05$). Candidates with none of these factors were found to be at the lowest risk of dropout (22.5% at 41 months).

Conclusions: The acceptable waiting time prior to OLT appears to be approximately 3 and 1.5 years for Child A and B/C groups. Thus, OLT should be considered within this period in candidates undergoing transarterial chemotherapy. Child-Pugh A patients with one nodule < 3 cm and AFP < 100 ng/ml may be the best candidates for pretransplant chemo-lipiodolization, with the lowest dropout rate.

Abstract# 245 Poster Board #-Session: P47-II

CRITICAL CUT-OFF VALUE OF SERUM ALPHA-FETOPROTEIN LEVEL TO EXCLUDE PATIENTS FROM LIVER TRANSPLANTATION. Shin Hwang[1], Sung-Gyu Lee[1], Chul-Soo Ahn[1], Deok-Bog Moon[1], Tae-Yong Ha[1]. *[1]Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea.*

Currently available indication criteria for hepatocellular carcinoma have high prognostic power, but low discriminatory power. Imaging study findings have been used as reliable guidelines for selection of recipient candidates with hepatocellular carcinoma, but a non-negligible proportion of patients showed unexpected early recurrence despite fulfillment of such eligibility criteria. Serum alpha-fetoprotein level was often proven as a significant risk factor of posttransplant recurrence of hepatocellular carcinoma, but there is no consensus on its critical cutoff value. In this study, single-center experience of living donor liver transplantation for 250 patients with hepatocellular carcinoma was analyzed retrospectively. The perioperative mortality rate was 6.4%, and overall 5-year survival rate was 69.8%. The Milan criteria were met by 78.4%, University of California at San Francisco criteria by 82.4% and Asan Medical Center criteria (largest tumor diameter not more than 5 cm, HCC number not greater than 6 and no major vessel invasion) by 85.6%. Pretransplant serum alpha-fetoprotein level was median 21.7 ng/mL. High serum alpha-fetoprotein greater than 1000 ng/mL was a significant risk factor in univariate analysis, but not in multivariate analysis. However, all of the 13 patients showing very high serum alpha-fetoprotein levels greater than 3000 ng/mL (3320 - 116000) showed hepatocellular carcinoma recurrence over 3 years, and 11 of them (84.6%) were beyond the Asan Medical Center criteria. These data implicate that serum alpha-fetoprotein greater than 3000 ng/mL may serve as a critical value to reliably exclude high-risk patients from liver transplantation.

Abstract# 246 Poster Board #-Session: P48-II

OUTCOME OF LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA: ANALYSES OF RISK FACTORS OF RECURRENCE. Huda M. Noujaim[1], Alexandre G. Dalbem[1], Cristiane M. F. Ribeiro[2], Regina Santos[1], Fabio Crescentini[1], Marcelo P. de Miranda[1], Tercio Genzini[1]. *[1]Hepato, Hospital Beneficencia Portuguesa, São Paulo, SP, Brazil; [2]Departamento de Anatomia Patologica, Hospital Beneficencia Portuguesa, São Paulo, SP, Brazil.*

Introduction: Liver transplant (LTx) is an option to treat cirrhotic patients with hepatocellular carcinoma (HCC). Many criteria exist to identify which HCC patients could be best benefited from LTx. In Brazil, waiting lists were based on chronological order until Jun/06, using the Milan criterion to HCC.

Objective: Analyze the outcome of LTx to HCC and to identify risk factors associated with tumor recurrence after LTx.

Methods: From Sept/97 to Mar/06, 196 cadaveric LTx were performed by our group, of which 51 (26%) due to HCC. Parameters studied on multivariable analyses were: time on list (WTL); donors and recipients demographics; LTx indications; size, number and place of tumors; presence of vascular invasion; degree of cellular differentiation; modified TNM, Milan and San Francisco criteria. All patients entered on list according to Milan criterion.

Results: Patients and grafts survival (6,12,36mths) were: 84%, 81%, 74% and 78%, 75%, 72%, respectively. WTL was 453±450days. Donors were 42±15yrs, 73±12kg. Donors serologies were Chagas+ (n-1), anti HBc+(n-16), anti HCV (n-1) and 56%(n-28) died due to trauma. Recipients were 76%(n-38) male, 54±9yrs and 72±15kg. Overall 88% (n-45) of recipients had VHB and/or VHC causing cirrhosis. AFP mean was 203±271 ng/mL. Incidental HCC was identified in 34%(n-17) of patients and 62%(n-31) fulfilled Milan and San Francisco criteria after analyses of liver explanted. Mean size of major tumors were 3.8±3.8cm, with 52% (n-26) occurring at right lobe and 38% in both; 38%(n=19) of HCC had vascular or lymphatic invasion. Modified TNM were T1-24%, T2-26%, T3-14%, and T436%, and 58%(n-29) of tumors were moderately differentiated. Overall 22%(n-22) of patients presented recurrence of HCC after LTx and 4 of them died. Risk factors associated with HCC recurrence: receptor male and presence of Milan criterion; with death: recipient blood group O and number segments compromised.

Conclusion: After LTx, 34% of HCC identified were incidental, 38% of HCC patients didnt fulfill Milan criterion and 36% were at T4. Although 22% of patients presented HCC recurrence after LTx, survival rates were good considering that LTx is only a potential curative treatment. The Milan criterion must be reviewed as a unique criterion to LTx indications.

Abstract# 247 Poster Board #-Session: P49-II

EFFICACY AND SAFETY OF TRANSARTERIAL EMBOLIZATION WITH EMBOSPHERES IN PATIENTS WITH HEPATOCELLULAR CARCINOMA WAITING FOR LIVER TRANSPLANTATION. Paolo Reggiani[1], Antonio Nicolini[2], Ernesto Melada[1], Silvia Crespi[2], Angelo Sangiovanni[3], Laura Martinetti[2], Giorgio E. Rossi[1]. *[1]Chirurgia, Centro Trapianti Fegato e Polmone IRCCS Fondazione Policlinico, Mangiagalli, Regina Elena, Milano, MI, Italy; [2]Servizi Diagnostici, Servizio di Radiologia Interventistica IRCCS Fondazione Policlinico, Mangiagalli, Regina Elena, Milano, MI, Italy; [3]Medicina, Divisione di Gastroenterologia IRCCS Fondazione Policlinico, Mangiagalli, Regina Elena, Milano, MI, Italy.*

The aim of our study was to evaluate the efficacy and safety of transcatheter arterial embolization with embospheres (TAEE) in patients with hepatocellular Carcinoma (HCC) on waiting list for orthotopic liver transplantation (OLT)

Efficacy was estimated by determining the percentage of tumor necrosis in explanted livers.

From december 2004 to October 2006, seven patients, previously treated with TAEE with embosheres between 100 and 300 micron, underwent OLT for HCC and cirrhosis. All patients are alive, males, mean age 56 years and free of recurrence. Five patients were carriers of nodules from 1 to 4 cm. (mean diameter 2,3 $\pm$ 1 cm.) and 2 patients with larger nodules, exceeding Milano criteria, of 7 and 9 cm. respectively. The median time of waiting list from TAEE to OLT was 4,4 months and the median time of follow-up is 8,4 months. The group of patients with smaller nodules revealed a median percentage of necrosis of 75% and the two patients with 7 and 9 cm. nodules showed a necrosis of 90% and 70% respectively.

No significant incidence of complications or increased operative difficulties related to vascular accidents were observed.

In conclusion, TAEE is a safe procedure able to downstage and control tumor progression in patients with HCC on a waiting list of OLT. For the small number of patients and short follow-up our data are not conclusive for the efficacy of TAEE to decrease the recurrence rate of HCC and to increase the "intention-to-treat" patient survival.

Abstract# 248 Poster Board #-Session: P50-II

LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA: PREDICTIVE FACTORS OF RECURRENCE.

Guilhermo Kiss[1], Maria L. Zanotelli[1], Ana L. Gleisner[1], Eduardo S. Schlindwein[1], Ian Leipnitz[1], Tomaz M. J. Grezzana[1], Mario H. Meine[1], Ajacio M. Brandão[1], Claudio A. Marroni[1], Guido P. C. Cantisani[1]. *[1]Transplante de Figado, Santa Casa de Porto Alegre, Porto Alegre, RS, Brazil.*

The aim of this study was to assess factors that could be associated with hepatocellular carcinoma (HCC) recurrence after liver transplantation (LT).

Methods: We retrospectively reviewed 114 patients with HCC who underwent LT. Uni- and multivariate analyses were conducted to identify independent predictors of recurrence.

Results: Three patients were excluded for the presence of an intrahepatic cholangiocarcinoma component in their tumors. In the remainder 111 patients, Hepatitis C virus was the main cause of cirrhosis. The majority of recipients was male (66.2%) with a mean age of 51.27 (SD ± 11.04) years. Overall 1- and 5-year survival was 72% and 54%, while disease-free survival was 88.5% and 75.6%. By univariate analysis, variables associated with HCC recurrence were: being within the Milan criteria (HR 0.23 95% CI 0.08-0.68), the size of the largest nodule >5cm (HR 6.93 95% CI 1.76-27.34), more than 3 nodules (HR 3.17 95% CI 0.81-12.33), presence of vascular invasion (HR 5.26 95% CI 1.43-19.36) and satellite nodules (HR 2.66 95% CI 0.89-7.91) in the explanted tumor. By multivariate analysis, presence of more than 3 nodules (HR 5.24 95% CI 1.11-24.72) was independently associated with HCC recurrence, while nodules with more than 5 cm (HR 5.19 95%CI 0.83-32.45) and the presence of vascular invasion (HR 4.06 95% CI 0.70-23.55) were still important, although did not reach statistical significance. Others variables studied such as tumor differentiation, presence of tumor necrosis or capsule, bilobar location, the peri-operative treatment of the tumor, the etiology of liver disease and alpha fetoprotein level were not statistically significant predictors of tumor recurrence. There was no significant interaction between the Milan criteria and vascular invasion (p=0.896).

Conclusion: Our data suggest that HCC recurrence after LT is lower for patients within the Milan criteria. Vascular invasion is an important prognostic factor in patients both outside and within the Milan criteria.

Abstract# 249 Poster Board #-Session: P51-II

POSTTRANSPLANT LYMPHPOPROLIFERATIVE DISORDERS IN ADULT LIVER TRANSPLANT RECIPIENTS.

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Posttransplant lymphoproliferative disorders (PTLD) is a serious, life-threatening complication following solid organ transplantation with a high mortality, caused by a primary or reactivated EBV infection. Incidence varies from 1-10% depending on the organ transplanted and the immunosuppresive regimens used.

Aim: the retrospective analyzis of clinical presentation, treatment and outcome of PTLD in adult liver transplant (LTx) recipients in a single center.

Material & methods: Clinical records of 500 consecutive LTx recipients in the period 1995-2006 were analyzed . 4 patients (0,8%) with PTLD were identified : 2 women and 2 men, age 31-49. The indication to LTx were : alcoholic liver disease, AIH, PBC and Wilson disease. Immunosuppressive treatment : simulect and steroids with tacrolimus, one case converted to cyclosporin A and one - to rapamycine. PTLD diagnosis was established in 6 - 37 months posttransplant (mean 20 mo). There were: plasmocytic hyperplasia in 2 patients, centroblastic B-cell plasmocytoma and T-cell acute lymphoblastic leucemia. Localisation of the disease were tonsilli, head and neck lymph nodes (2 pts), ascending colon with liver and kidney metastases. In 3 cases the EBV presence was confirmed. 1 patient developed T-cell lymphoblastic lymphoma 6 months after LTx from the donor with lymphoblastic lymphoma in thymus. The same disease was diagnosed in 2 kidney recipients from this donor. Chemotherapy (CHOP + Mabthera) was introduced immediately after diagnosis.

Results: 2 patients died: 13 months post LTx (4 mo-after diagnosis for bleeding from GI tract and MOF) and 42 months post LTx for MOF of septic origin. The remaining 2 are alive in good general condition, receiving chemotherapy. In 2 patients CT scan after 3 months revealed the regression of the lymphnodes and liver focal lesions.

Conclusion: PTLD is a significant complication in LTx patients. Chemotherapy may cause the remission and/or the regressions of the lesions. The role of monoclonal antibodies in this setting looks promising and requires further investigations.

Abstract# 250 Poster Board #-Session: P52-II

EXTRANODAL POSTTRANSPLANTATION LYMPHOPROLIFERATIVE DISORDER – CASE REPORT.

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Clinical Background: Posttransplantation lymphoproliferative disorder (PTLD) is one of the most serious complications of solid-organ transplantation. It is potentially treatable in most cases, but current methods involve withdrawal or reduction of immunosuppression and the consequent risk for graft rejection. Sirolimus was shown in vivo and in vitro to limit proliferation of a number of malignant cell lines, including those of PTLD-derived cells.

Case report: A 43 years old man with end stage liver disease secondary to hepatitis C and ethanol abuse presented for orthotopic liver transplantation. Six month after transplantation a liver biopsy was compatible with hepatitis C recurrence (METAVIR A2F1). He was treated with peguilated interferon and ribavirin during 48 weeks and polymerase chain reaction was negative six months after treatment finished. However, at the middle of the treatment, the patient presented with diarrhea due to intestinal malabsorption. Peroral intestinal biopsy evidenciated multiple areas of proliferative lesions composed by mononuclear cells in reactive centers arranjed nodules. The immunohystochemic study was characterized by CD20+, CD3+, AE1/AE3- and M1B1 + in 25% of cells. The initial option was to reduce tacrolimus level which resulted in a little diarrhea improve. One year later, immunosuppression was converted into sirolimus. The target levels lay between 5 and 7ng/ml. The patient normalized bowel habit and the proliferative injury of intestinal mucosa reduced. The graft function was maintained and sustained virologic response too.

Significance: This study shows posttransplantation lymphoproliferative disorder in a liver transplant recipient who was successfully treated by sirolimus.

Abstract# 251 Poster Board #-Session: P53-II

OSTEOPOROSIS AFTER LIVER TRANSPLANTATION – HOW TO PREVENT FRACTURES? A PROSPECTIVE RANDOMIZED TRIAL.

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Background: Osteoporosis induced fracture on lumbar spine and femoral neck is a major side effect in the first 24 months after liver transplantation (LTX). To test whether therapy of osteoporosis and consequent monitoring of bone mineral density (BMD) after LTX reduces rate of fractures we designed a randomized prospective trial.

Methods: 60 patients after LTX were randomized either to receive calcium and vitamin D or calcium, vitamin D and bisphosphonate ibandronate 2 mg every three months iv. Measurement of BMD in lumbar spine and femoral neck was performed prior and 3, 6, 12 and 24 months after surgery. Presence of fractures and changes in BMD were recorded.

Results: In BMD-measurement patients receiving ibandronat demonstrated a significantly better recovery from BMD-loss on lumbar spine *($p<0.026$)* twelve months after transplantation. In addition, at 24 months post LTX, fracture rate in region lumbar spine and femoral neck was significantly lower in the ibandronate group *($p<0.001$).*

Conclusions: In the group receiving a bisphosphonate we found a lower incidence of fractures on lumbar spine and femoral neck during 24 months. Fractures after liver transplantation are to prevent in a significant way with starting application ibandronate with calcium and vitamin D at the day of LTX.
Measurement of BMD (DXA) reflects development of osteoporosis in a sufficient way and is therefore the best parameter of monitoring osteoporosis after LTX.

Abstract# 252 Poster Board #-Session: P54-II

PARTIAL VERSUS WHOLE GRAFTS IN ADULT LIVER TRANSPLANTATION. LESSONS LEARNED FROM A SERIES OF 750 CASES IN A SINGLE CENTER. Olivier Boillot, Jérôme Dumortier, Amr Abdelaal, Mustapha Adham, Catherine Boucaud, Pierre Sagnard, Yves Bouffard, Olivier Guillaud, Bertrand Delafosse, Charles Ber. *[1]Liver Transplant Unit, Edouard Herriot Hospital, Lyon, France.*

From the beginning of our experience, we developed alternative techniques of liver transplantation in adult and pediatric recipients including split and living donor liver transplantations. The aim of this retrospective study was to analyse and compare patient and graft outcomes according to the type of grafts.
Patients and methods : Since october 1990 to october 2006, 865 LT were performed in 750 adults and 115 children. In adult patients, 618 had had a whole liver (WL), 58 a right split graft (RSG), 16 a left split graft (LSG), 50 a right liver (RLLD) and 8 a left liver (LLLD) from a living donor. Statistical analysis : survivals were compared by using the Kaplan-Meier survival curves and data with ANOVA tests.
Results : Mean recipient age was 49±9, 52±10, 54±12, 51±11 and 40±15 years in WL, RSG, LSG, RLLD and LLLD groups respectively (p=.0019). Child C status at the time of liver transplantation was found in 35.9%, 51.7%, 43.7%, 70% and 87.5% of patients in WL, RSG, LSG, RLLD and LLLD groups respectively (p<.0001). In WL, RSG, LSG, RLLD and LLLD groups, mean donor age was 37±15, 25±10, 25±5, 34±9 and 36±9 years (p<.0001). Retransplantation rate during the study period was 2.9% (22 patients) in the whole cohort and 2.2% in WL, 6.8% in RSG, 12.5% in LSG, 2% in RLLD and 12.5% in LLLD groups (p NS).
The 1, 5 and 8 year patient and graf survivals were not significantly different between groups although left lobe transplantation was associated with increased patient mortality and graft failure (table 1).
Conclusions : Long term results in adult liver transplantation were at least as effective by using right livers from split grafts or living donors compared with whole cadaveric grafts although patients were sicker. Optimal donor and graft qualities was mainly reponsible for excellent patient outcome when using right livers. Graft/recipient mismatching was probably the cause of inferior results with left liver grafts compared with others. The use of partial grafts can give patients an increased access to transplantation.

one to 8 year patient survival according to the type of grafts

patient survival (%)	1 yr	3 yr	5 yr	8 yr
WL	88	83	77.5	72.2
RSG	92.7	90.7	88.3	84.4
LSG	75	67.5	50.6	50.6
RLLD	91.8	85.3	83.5	82.4
LLLD	75	75	75	75

Abstract# 253 Poster Board #-Session: P55-II

LIVER TRANSPLANTATION AND MORBID OBESITY. Hosein Shokouh-Amiri[1], Santiago R. Vera[1], Osama A. Gaber[1], Reza Mehrazin[1], Nosratollah Nezakatgoo[1], Barbara Parham[1]. *[1]Surgery, Methodist University Hospital Tranplant Institute, Memphis, TN, USA.*

BACKGROUND: The incidence of severe obesity has increased to more than 35% of the population in the U.S. That shift is reflected in the population awaiting liver transplantation. A greater number of patients with morbid obesity (BMI>40kg/m2) are being referred for liver transplantation. Earlier reports have suggested increased early postoperative morbidity and mortality for obese patients undergoing liver transplantation.
PURPOSE: To evaluate a single center's experience tranplanting livers into patients with morbid obesity (BMI>40kg/m2).
METHOD: A retrospective, IRB approved, chart review of first transplant, deceased donor liver transplantation at a single center from January 1992 to May 2006 was undertaken. There was a total of 415 patients divided into 4 groups. There were 20 patients indentified with BMI>40 (Group I), 32patients with BMI >35-<40 (Group II), 69 patients with BMI>30-<35 (Group III) and 294 patients with BMI <30 (Group IV). Demographic data (age, sex, race and etiology of liver disease), MELD score and presence of diabetes mellitis were gathered in these patients. Outcomes measured include perioperative mortality, length of stay, one year and 5 years, patient and graft survival.
RESULTS: Demographic data were similar in all groups, as well as the distribution of MELD scores. No perioperative mortality were encounted among 20 patients with BMI >40kg/m2 while there was 8% perioperative mortality among 294 patients with BMI <30kg/m2. No primary non functions occurred and no re transplant was performed in patients with BMI >40%. Two patients with BMI>40kg/m2 died within 3 months, all with MELD scores >40, similar 3 month mortality was found in other groups (10% vs 0% vs 14% vs 11% respectively). Length of stay was similar in all groups. There was a correlation between MELD score and length of stay independent of BMI. One and five year patient survival were similar in all groups independent of their BMI (85% and 85% vs 88% and 88% vs 84% and 75% vs 84% and 76% respectively in Groups I, II, III and IV).
CONCLUSION: Outcomes of liver transplantation are not adversely affected by severe morbid obesity, therefore; morbid obesity abone should not be considered a contraindication for liver transplantation.

Abstract# 254 Poster Board #-Session: P56-II

PREDICTION OF OUTCOME AFTER LIVER TRANSPLANTATION BY DONOR RISK INDEX (DRI) AND ORGAN PATIENT INDEX (OPI). Alfonso W. Avolio[1], Salvatore Agnes[1], Antonio Gasbarrini[2], Erida Nure[1], Massimo Siciliano[2], Rita Gaspari[3], Raffaella Barbarino[1], Marco Castagneto[1]. *[1]Dpt of Surgery-Transplantation Service, "A. Gemelli" Catholic University, Rome, Italy; [2]Dpt of Internal Medicine, "A. Gemelli" Catholic University, Rome, Italy; [3]Intensive Care Unit, "A. Gemelli" Catholic University, Rome, Italy.*

Background. Donor Risk Index (DRI) has been introduced by Feng to predict the outcome after liver transplantation by using donor parameters.
Patients and Methods. Donor Risk Index (DRI) and Model for End stage Liver Disease (MELD) were calculated in 230 liver transplant cases. DRI was calculated using a the Feng formula: **MELD** was calculated using bilirubin, creatinine and international normalized ratio using the original formula. The cases were stratified into 3 classes in relation to the DRI (low risk, DRI 1.0-1.3; intermediate risk DRI 1.4-1.8; high risk, DRI, 1.9-3.1) and to the OPI (low risk, OPI 1.0-1.3; intermediate risk OPI 1.4-1.9; high risk, OPI, 2.0-3.6). DRI and MELD were included in a new index, the Organ Patient Index (OPI) as follows:
OPI=exp[(0.154 if 40≤age< 50)+(0.274 if 50≤age<60) + (0.424 if 60≤age < 70)+(0.501 if 70≤age)+(0.079 if brain anoxia)+(0.145 if brain vascular accident)+(0.184 if other cause of brain death)+(0.176 if race=African American)+(0.126 if race = other)+(0.422 if partial/split)+(0.066 ((170-height/10))+(0.105 if regional share)+(0.244 if national share)+(0.010 x CIT)+(0.020 x MELD)].
Results. The cases with low DRI (1.0-1.3) showed better survival the cases with high DRI (2.0-3.0). Differences were statistically significant (p<.01). The cases with low OPI (N=77) showed better survival than the cases with intermediate OPI (N=95) and also better survival than cases with high OPI (N=58). Differences were statistically significant (low OPI vs intermediate OPU p<.02 ; low OPI vs high OPI p<.001). The OPI predicts the outcome better than DRI, increasing the gap in long term graft survival between low and high risk class (OPI, gap=30% vs DRI gap=21%).
Discussion. The inclusion of MELD in ORI improved the predictivity of the model. However, comparing the predictive power of both donor factors and recipient factors, the role of donor factors is stronger.A possible reason is that while the higher prevalence of non-standard donors enlarged the spectrum of donor quality, the adoption of MELD based criteria allowed a more homogeneous level of patient condition at the time of the transplant than the one observed in the pre-MELD era.

Abstract# 255 Poster Board #-Session: P57-II

PROGNOSTIC SIGNIFICANCE OF CELLULAR REJECTION FOUND IN PROTOCOL BIOPSIES AFTER LIVER TRANSPLANTATION. Vibhakorn Shusang[1], Pinelopi Manousou[1], Laura Marelli[1], George Kalambokis[1], Nancy Rolando[1], Caroline A. Sabin[2], Brian Davidson[1], Keith Rolles[1], Andrew K. Burroughs[1]. *[1]Surgery, Royal Free Hospital, London, United Kingdom; [2]Primary Care and Population Sciences, Royal Free and University College Medical School, London, United Kingdom.*

Background :Currently liver histology is the gold standard to diagnose acute cellular rejection (ACR). As current practice in many centres does not include protocol biopsies, the clinical significance of cellular rejection is difficult to assess. Only few studies suggest that liver transplant recipients do not have similar propensity for ACR and that ACR does not influence survival or indeed may be beneficial.

Aim :evaluate ACR in protocol biopsies with respect to survival.

Patients/Methods :447 consecutive liver transplants (LT) between January 1995 and October 2001. 415 had at least one biopsy performed after LT and 385 LT had a protocol biopsy between days 4 and 14.Data from our prospective data base.Cellular rejection classified as none, mild or moderate/severe and other demographic/clinical factors were related to survival.Follow up was censored at retransplantation or if alive on 31st July 2006.Kaplan-Meier survival curves were evaluated.

Results :In 385 protocol biopsies, histological rejection was none in 118 (30%),mild 162 (42%),moderate 90 (24%)and severe 15 (4%).Patients on renal support before LT had less severe rejection(61.9% vs 28.1%, p=0.005). More severe rejection was associated with lower bilirubin (p=0.004), creatinine (p=0.03). INR (p=0.001) and urea (p=0.01) at the time of transplant, and blood (p=0.008) and other transfusion products perioperatively, seemingly independent of aetiology. Those without histological rejection survived similarly overall to those with mild rejection(p=0.683). However if moderate/severe rejection was present these patients had better survival than those without rejection (19% v 39%)(p=0.05), and those with mild or no rejection.(19% v 39%)(p=0.001). These results were similar at 1 year and for overall survival.

Conclusion :Severity of illness pre-transplant affects the likelihood of rejection and moderate/severe rejection was not associated with worse survival. Absence of rejection is associated with worse survival.Although definited analyses of specific causes of death need to be related to severity of rejection, these data question the value of suppressing cellular rejection to obtain very low or no rejection rates as assessed by protocol biopsy.

Abstract# 256 Poster Board #-Session: P58-II

UNCOMPLEXED Gc-GLOBULIN AS EARLY PROGNOSTIC MARKER FOR INITIAL GRAFT FUNCTION AFTER ORTHOTOPIC LIVER TRANSPLANTATION. Sabine J. Presser[1], Guido Junge[1], Jan M. Langrehr[1], Peter Neuhaus[1]. *[1]Department of Surgery, Charite Berlin Campus Virchow Klinikum, Berlin, Germany.*

Initial graft function after orthotopic liver transplantation (LTx) is a major determinant of postoperative survival and morbidity. Despite several efforts to provide scoring-systems for initial graft function, there is still a lack of evident parameters that represent rejection and or liver dysfunction at an early stage. Gc-globulin is well known as a prognostic marker for liver function after acetaminophen intoxication and liver trauma. In this study we analysed uncomplexed Gc-globulin as an early prognostic marker for acute rejection after LTx. Pts with initial non function (INF) were compared to those with normal graft function in accordance to serum AST, ALT, albumin, bilirubin, bile production, prothrombin activity and MELD-score on day 0,1,2,3 and 5 after LTx.

We followed 36 pts with LTx at POD 0,1,2,3 and 5. Out of these pts, 6 showed obvious clinical signs of INF. Serum parameters were measured in patients and correlated with the Gc-globulin taken in blood samples at the same time. Statistical analysis was performed by using SPSS Vers.12.0, wilcoxon rank sum test, chi-square test and Pearsons product moment correlation. A p-value less 0,05 was considered significant.

Results: Overall 6 pts (17%) developed INF after LTx. In those pts Gc-globulin levels were markedly decreased. The lowest level (15mg/l) was observed in a pt with INF 3 days after LTx for HCC. Pts were divided into group A (INF) and B (normal graft function). Mean serum Gc-globulin levels in group A (n=6) were: pre LTx 206+/-101 mg/l, post LTx (d0):128+/-16mg/l, d1: 91+/-48mg/l, d2: 73+/-58mg/l, d3: 82+/-75mg/l and d5: 72+/-88mg/l . In comparison to group B (n=30) Gc-globulin levels were according to rising liver function: pre LTx: 185+/-86mg/l, post Tx (d0) 161+/-56mg/l, d1: 144+/-58mg/l, d2: 169+/-64mg/l, d3: 180+/-76mg/l and d5: 203+/-81mg/l respectively.

Regarding these levels we found significant correlations at d5 with prothrombin activity (p=0,001), with bilirubin (p=0,007), bile production (p=0,001), alanine aminotransferase (p=0,005) and with the modified (postoperative) MELD score (p=0,001).

In summary we can conclude that our data of post transplant uncomplexed Gc-globulin levels significantly correlate with well known laboratory parameters (prothrombin activity, bilirubin, ALT, bile production and MELD-score) and that Gc-globulin may present a diagnostic tool for initial graft function after LTx.

Abstract# 257 Poster Board #-Session: P59-II

ACUTE RENAL FAILURE IN LIVER TRANSPLANTATION: IMPACT ON OUTCOME. Rogerio C. Afonso[1], Renato Hidalgo[1], Jose M. A. Moraes-Junior[1], Tadeu Thome[2], Patricia Khonde[1], Maria P. V. C. Zurstrassen[1], Thais D. Bacoccina[1], Sergio P. Meira-Filho[1], Marcelo B. Rezende[1], Luis E. P. Fonseca[1], Fernando Pandullo[1], Ben-Hur Ferraz-Neto[1]. *[1]Liver Transplantation Unit, Albert Einstein Jewish Hospital, Sao Paulo, Brazil; [2]CETHUS, Hospital da Unimed de Sorocaba, Sorocaba, Brazil.*

Background and Methods: Acute Renal Failure (ARF) is a frequent complication affecting patients after liver transplantation (LT) with an incidence ranging from 12 to 73%. The aim of this study was to analyze the incidence of ARF after LT and its impact on early (30 days) and 1 year survival. We analyzed data collected prospectively of 124 consecutive LT in 114 patients, between March 2003 and November 2006. Exclusion criteria were pre-LT renal failure (8), retransplantation (10) or liver-kidney transplantation (1). ARF was defined as a serum creatinine (Cr) ≥ 2,0 mg/dl or Cr ≥ double basal line pre-LT or oligurie requiring hemodialysis, in the early (7 days) postoperative period. Patients were divided in 3 groups: **Group I** – patients with normal renal function after LT (n=59); **Group II** – patients with mild renal failure after LT, characterized as Cr between 2,0 mg/dl and 3 mg/dl, or Cr ≥ double basal line pre-LT, up to 3 mg/dl (n=20) and **Group III** – severe renal failure, characterized as Cr ≥ 3 mg/dl or utilization of renal replacement therapy (n=26).

Results: Table 1 shows the Meld score, hospital and ICU stay among the groups.

The incidence of ARF was 43,80%. The 1-month survival rate was 89,93%, 95% and 56,69% for groups I, II and III respectively (p=0,001). The 1-year survival rate was 85,29%, 93,33% and 44,44% for groups I, II and III respectively (p=0,003).

Conclusion: ARF had a negative impact on early and 1 year survival rate after liver transplantation.

Table 1

	Meld (range)	Hospital stay (range)	ICU stay (range)
Group I (n=59)	17,27 (9 to 29)	12,2 (10 to 38)	3,33 (1 to 16)
Group II (n=20)	17,5 (10 to 29)	15,25 (8 to 31)	4 (2 to 11)
gROUP III (N=26)	19,27 (6 to 25)	23,92 (10 to 84)	13,19 (2 to 60)

Abstract# 258 Poster Board #-Session: P60-II

IMPACT OF MODEL FOR END-STAGE LIVER DISEASE (MELD) ON SURVIVAL AFTER LIVER TRANSPLANTATION: A BRAZILIAN EXPERIENCE. Ajacio Brandao[1,2,3], Sandra Fuchs[2], Ana Gleisner[1,2], Claudio Marroni[1,3], Maria L. Zanotelli[1], Guido Cantisani[1]. *[1]Liver Transplantation Group, Complexo Hospitalar Santa Casa, Porto Alegre, RS, Brazil; [2]Post-Graduate Program in Medicine, Social Sciences, School of Medicine, UFRGS, Porto Alegre, RS, Brazil; [3]Internal Medicine, School of Medicine, FFFCMPA, Porto Alegre, RS, Brazil.*

Background: MELD predicts pre-transplant mortality and is used for allocating adult cadaver livers. Its association with post-transplant mortality remains unclear. **Aim**: To compare 3, 6 and 12-months mortality after orthotopic liver transplantation (OLT) according to the pre-transplant score in a single center. **Methods**: We evaluated a historic cohort of patients with chronic liver diseases, who underwent primary OLT between August 1991 and December 2005. The pre-transplant MELD score was stratified according into < 15, 16-24, and ≥ 25 categories. ROC curve was used to determine the ability of MELD score for predicting 3-month mortality after OLT. Survival curves (Kaplan-Meier method) were compared with the log-rank test. Cox proportional hazard model was used to estimate the risk of dying during the follow-up period. The Institutional Review Board of the institution approved

this protocol. **Results**: In the period 436 patients underwent OLT but 22 lacked information for MELD calculation. We studied 414 patients (266 males) with a mean age of 52.0±10.8 years. The mean MELD score at transplant was 16.11 (±5.0). The mainly indication for OLT was hepatitis C (64.0%). The AUC for 3-month mortality was 0.59 (0.51-0.68). Post-OLT survival at 3, 6, and 12-months was lower for MELD score ≥ 25. Afterwards, there was no difference (Table). The likelihood of dying within 3, 6 or 12-months was 4.2, 3.6 and 3.1 times higher in patients with MELD score ≥*25* than patients with score ≤ 15, respectively.

Conclusion: The predictive value of the pre-OLT MELD score for 3-months post-liver transplantation mortality was very low. However, high MELD scores (≥25) affect survival in the first year after the OLT.

Survival at different time intervals after OLT according the pretransplant MELD

		Patient survival after OLT (%)			
Variables	N	3-month	6-month	12-month	All follow up
MELD score at OLT					
<15	175	88.0	85.7	83.4	74.9
15-24	221	87.0	85.0	81.0	72.4
≥25	18	61.0	61.0	61.0	61.0
P value (log rank)		<0.001	0.005	0.02	0.16
P value (Tarone-Ware)		<0.001	0.004	0.04	0.08

Abstract# 259 Poster Board #-Session: P61-II

THE MODEL FOR END-STAGE LIVER DISEASE (MELD) ON POSOPERATIVE DAY 5: A PREDICTOR OF MORTALITY AND RETRANSPLANTATION. Camila P. de Vasconcelos, Thomson M. Palma, Vinicius M. R. Silva, Carlos A. Cavalcante, Alexandre B. Cavalcanti, Sergio Mies. [1]*Liver Unit, Albert Einstein Hospital, Sao Paulo, SP, Brazil.*

Introduction: The model for end-stage liver disease (MELD) was developed to predict short-term mortality in patients with cirrhosis and TIPS. As happened in the United States in 2002, it has recently become the standard tool for allocation of patients for liver transplantation in Brazil. Supposedly the preoperative MELD score does not predict post transplant mortality or graft survival. Post transplant MELD at day 5 has never been tested as a prediction instrument for patient mortality and graft survival.

Objective: The aim of this study is to investigate if post transplant MELD at day 5 is associated with increase of mortality or retransplantation.

Patients and methods: We retrospectively analyzed pre and post transplant MELD (day 1 to 10) from all liver transplant recipients at our center. Based on MELD score calculated on day 5 post transplant, recipients were stratified as low risk (≤ 20), medium risk (21-30), and high risk (≥31). The impact of MELD on postoperative day 5 in mortality and retransplantation was analyzed.

Results: Between January 2002 and December 2005, 319 patients were submitted to an orthotopic liver transplantation (OLT) in our center. From this total 186 were from deceased donor, 118 from right lobe living donor and 15 domino liver transplants.

The average age is 33 ± 11.31. Patients with post transplant MELD on day 5 ≤ 20 had an overall 1 year mortality of 16.7%, compared to 27.4 e 53.6% for MELD 21-30 and ≥ 31 respectively (p<0,001). Concerning retransplantation, the rates was 8.4% for low risk MELD, 10% for medium risk and 43.8% for high risk (p=0,016).

Conclusion: This results suggest that the post transplant MELD score on day 5 is an accurate predictor of patient mortality and re-transplantation.

Abstract# 260 Poster Board #-Session: P62-II

DONOR VARIABLES PREDICT CLINICAL AND VIRAL OUTCOME FOLLOWING ORTHOTOPIC LIVER TRANSPLANTATION IN PATIENTS WITH HEPATITIS C (HCV) INFECTION. Geoff W. McCaughan, Jade Jamais, Martin James, David Joseph, Debbie Verran, James Gallagher, Michael Crawford, David Koorey, Simone Strasser, Nick Shackel. [1]*Australian Liver Transplant Unit, RPAH, Sydney, Australia.*

Background: Outcomes for HCV associated liver disease following liver transplantation remain suboptimal.The Aims of this study were to examine donor clinical variables that might be predictive of recipient outcome (survival, graft failure and initial poor graft function (IPGF)) and peak viral load. Methods We prospectively collected and subsequently correlated donor variables with outcome in 118 HCV liver transplant recipients between 1997-2005. Results After median follow-up of 32.4 months, mortality was 26.3% (HCV-related 10.2%, non-HCV related 16.1%). Graft failure (re-transplantation or death) occurred in 28.8% and IPGF in 31.4%. Univariate analysis identified the following donor variables significantly associated with (a) increased mortality- age >50 years (p=0.02) and cardiac arrest (p=0.04), (b) graft survival- age >50 (p=0.049), ALT level (p=0.002) and steatosis (p=0.01) and (c) IPGF; age >50 (p=0.017) and ALT level (p=0.003). In a multivariate analysis, increased mortality was associated with age >50 (p=0.027; HR 2.36), (b)Increased HCV-related deaths was associated with donor cardiac arrest (p=0.001, HR 49.74) and (c) Injcreased IPGF was associated with age >50 (p=0.018, HR 2.47), ICU stay >7 days (p=0.047, HR 2.10) and ALT level (p=0.001, HR 5.32). Increased HCV viral load >107IU/ml was associated with duration of ICU stay (p=0.05), multiple vasopressors (p=0.05) and cardiac arrest (p=0.043). In Summary several key donor factors were associated with either increased overall mortalty,increased HCV related graft loss or IPGF in HCV patients undergoing liver transplantation In Conclusion Donor hepatic injury is important in predicting later HCV post transplantation outcomes and should be considered in organ allocation for HCV infected recipients.

Abstract# 261 Poster Board #-Session: P63-II

EVALUATION OF QUALITY OF LIFE IN LIVER TRANSPLANT PATIENTS AND CIRRHOTIC CANDIDATES IN THE WAITING LIST IN PORTO ALEGRE, BRAZIL. Carla A. Taroncher[1], Ana Luiza M. Gleisner[1], Maria Lucia Zanotelli[1], Guido P. C. Cantisani[1], Ajácio B. M. Brandão[1], Marcelo P. A. Fleck[2], Claudio Augusto Marroni[1]. [1]*Grupo de Transplante Hepático Adulto, Complexo Hospitalar Santa Casa, Porto Alegre, Rio Grande do Sul, Brazil;* [2]*Departamento de Psiquiatria e Medicina Legal do Rio Grande do Sul, Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil.*

Background: Cirrhosis is a chronic disease that affects diffusely the liver, resulting in signs and symptoms known to affect the patient's health-related quality of life (HRQOL). Liver transplantation (OLT) is widely accepted as treatment for end-stage liver disease. As clinical outcomes of liver transplantation progress, the potential improvement in the overall functional status as well as in the HRQOL after transplant becomes increasingly important. The aim of this study was to compare the HRQOL between transplanted patients and cirrhotic candidates in the waiting list

Methods: Quality of life was assessed in two ways: WHOQOL-bref and SF-36 questionnaires. Patients were also evaluated for the presence of depressive symptoms through the Beck Depression Inventory (BDI).

Results: Out of 213 patients evaluated, 112 were candidates in the waiting list while the remaining 101 were transplanted patients. The patients on the waiting list had worse scores in 5 domains of the SF-36 and in all domains of the WHOQOL bref (p<0.05). Besides that, the transplant candidates had more depressive symptoms, with a significantly higher mean BDI score than among transplanted patients (13.3 vs 9.43, p<0.002). Moreover, the BDI scores were highly correlated with several domains of both SF-36 and WHOQOL-bref.

Conclusions: OLT improves most, but not all, HRQOL domains. The improvement in HRQOL is highly associated with a reduction in the depressive symptoms. While the presence of these depressive symptoms may affect the patient's perception of their quality of life, it is possible that the actual improvement in the HRQOL results in a decreased prevalence of depressive symptoms in this population.

Abstract# 262 Poster Board #-Session: P64-II

THE OUTCOME OF LIVER TRANSPLANT USING MARGINAL GRAFTS. Huda M. Noujaim[1], Marcelo P. de Miranda[1], Cristiane M. F. Ribeiro[1], Regina Santos[1], Tercio Genzini[1]. [1]*Hepato, Hospital Beneficencia Portuguesa, São Paulo, Brazil.*

INTRODUCTION: The use marginal donors have been an option to expand the cadaveric donor pool. Until Jul/06 in our country, liver transplant (LTx) patients wait in a chronological list, resulting a long waiting time around 2-3yrs and high mortality (30%). The solution found by our team was to use donors anti-HBc+, anti-HCV+, Chagas+ serology; and livers passed on by other teams due to steatosis or long ischemic time and transplant them into patients with liver tumor or in critical clinical condition due to chronic liver disease.

AIMS: to analyze the outcome of LTx using marginal grafts and compare them with other LTx using not marginal donors

METHODS: Between Mar/97 and Mar/06 we performed 196 cadaveric LTx, 86 of which from marginal donors; out of these, 41% anti-HBc+(n-35), 3.5% anti-HCV+(n-3), 5.9% Chagas+ (n-5), 32% discharged by others times (n-28) and 16.5% other reasons. Donors and recipients demographics aspects, waiting on list, LTx indications, cold ischemic time, hospital stay and survival curves were analyzed. The last 3years liver biopsies were performed after reperfusion. The results significant when $p<0.05$.

RESULTS: There are significant difference between 2 groups comparing donors' age and weight, cold ischemic time and transplant indications. In the marginal group, 3 had seroconversion to HBsAg and 1 had acute Chagas disease. All were successfully treated. The results are presented in the table below.

CONCLUSION: The excellent patient survival observed using marginal livers (anti-HBc+, anti-HCV+, Chagas+ serology, steatotic livers or long ischemic time) justifies their use in patients in critical clinical conditions due to chronic liver disease or hepatic tumors.

	NOT MARGINAL (n=99)	MARGINAL (n=86)	p
DONORS - Age(yrs)	37±16	42±14	0.02
Weight(kg)	69±14	73±12	0.03
Na+ (mEq/ml)	154±15	151±15	0.07
RECIPIENTS - Age (yrs)	48±15	51±11.3	0.9
Weight (kg)	70±19	70±14.3	0.9
WAITING ON LIST (days)	498±450	439±403	0.3
LTXx INDICATIONS- Chronic liver disease	77 (73,3%)	53 (58.2%)	<0.001
Tumor	7 (6.7%)	29 (31.9%)	
Urgent (PNF, HAT, FHF)	21 (20%)	9 (9.9%)	
COLD ISCHAEMIC TIME (min)	499±174	602±181	0.02
HOSPITAL STAY (days)	24±43	25±39	0.9
LIVER BIOPSY after REPERFUSION	(N=28)	(N=52)	0.7
Steatosis	11 (39.3%)	26 (50%)	
Reacional / Normal	11 (39.3%)	16 (30.8%)	
PATIENT SURVIVAL (3, 6,12 mths)	84%, 82%, 80%	84%,83%,78%	0.9

Abstract# 263 Poster Board #-Session: P65-II

EXPERIENCE OF INDETERMINATE CHRONIC HEPATITIS AFTER LIVER TRANSPLANTATION. Federica Miculan[2], Mylene Sebagh[2], Stephen Hrusovsky[2], Eric Ballot[2], Anne-Marie Roque-Afonso[2], Hossein Fahramand[2], Catherine Guettier[2], Denis Castaing[1], Didier Samuel[2], Jean-Charles Duclos-Vallee[2]. *[1]Centre Hepato-Biliaire, AP-HP Hopital Paul Brousse, Villejuif, France; [2]Unite 785, Inserm Universite Paris Sud 11, Villejuif, France.*

Indeterminate chronic hepatitis (ICH) may occur after liver transplantation. In the aim of a better understanding of this complication, we studied retrospectively patients who presented an indeterminate chronic hepatitis on the liver graft.

Patients and Methods: Between January 1999 and January 2005 among 499 patients who underwent LT, we identified 14 patients (2%) with a median age 43.6 yrs (range 33-63) with the diagnosis of ICH on the liver graft. We excluded patients who have been transplanted for AIH (n=4) and for HCV cirrhosis. Biochemical and immunological data (gammaglobulin, ANA, smooth muscle antibodies (Ab)) were collected. The type and the degree of portal, lobular and perivenular inflammatory infiltrate were reviewed. Portal fibrosis and necroinflammatory activity were graded according METAVIR score. Other lesions as ductopenia, bile duct changes, steatosis, vascular lesions and acute or chronic rejection were also reported.

Results: The diagnosis of ICH was performed with a median delay of 70 months (range 6-192) after LT for fulminant hepatitis (n=4), primary biliary cirrhosis (n=3), primary sclerosing cholangitis (n=1), familial amyloid neuropathy (n=2), arterial thrombosis (n=1), indeterminate cirrhosis (n=1), B-D cirrhosis (n=1) and Wilson disease (n=1). In nine patients (64%) no abnormalities of the liver tests were noted at the time of the diagnosis. Significative titers of AutoAb were detected in 6/14 (43%) patients. Fibrosis score was F4 (n=1), F2 (n=8), F1 (n=5) and Inflammatory activity score A3 (n=1), A2 (n=3) and A1 (n=10). In 6 patients, an increase of the immunosuppressive therapy was performed and in 5 patients, a biochemical and/or an histological response was obtained. In two patients, the diagnosis of autoimmune hepatitis could be made retrospectively. Except in one patient who was infected by HCV during the post LT period, we did not observed graft loss.

Conclusions: Chronic hepatitis occurred in 2% of the cases in our series. In most cases, the histological lesions are mild and the course of the disease is not severe. Most of the patients respond to an increase of steroid therapy and this fact argues for an autoimmune or an alloimmune process.

Abstract# 264 Poster Board #-Session: P66-II

LIVER TRANSPLANT SECONDARY NON-FUNCTION: DEFINING A DELAYED CHOLESTATIC GRAFT FAILURE. Greg J. McKenna[1], Edmund Sanchez[1], Srinath Chinnakotla[1], Henry Randall[1], Richard Ruiz[1], Nicholas Onaca[1], Dmitriy Nikitin[1], Tariq Khan[1], Marlon Levy[1], Robert Goldstein[1], Goran Klintmalm[1]. *[1]Transplant, Baylor Regional Transplant Institute, Dallas, TX, USA.*

INTRODUCTION

Distinct from primary non-function (PNF), with its failing synthetic function and hemodynamic instability, there exists in OLT patients a cholestatic graft failure with adequate synthetic function and no other etiology to explain failure (absence of vascular/bile duct pathology, ACR or disease recurrence). This failure has not been described elsewhere and we aim to define this cholestatic graft failure as secondary non-function

MATERIALS AND METHODS

2580 OLT recipients from 12/1984-12/2006 were retrospectively reviewed identifying a cohort of graft failure patients on post-op day 5-42. Inclusion criteria required both patent hepatic vessels and normal bile ducts by radiological imaging, biopsies showing no ACR or recurrent disease on biopsy, and no sepsis or PNF

RESULTS

12 pts (7M, 5F) fulfilled criteria. Recipient characteristics: mean age 48.1y, mean BMI 27.3, 50% HCV patients. Donor characteristics: mean donor age 51.7y, mean donor BMI 24.9, only 1 graft with steatosis (<20%). Positive crossmatch occured in 3/8 grafts (4 unavailable) and 2/12 donors had positive cultures. Operative parameters: mean WIT/CIT of 0:50/8:22, mean operative PRBC/FFP use of 10.9U/14.1U, and mean intra-op portal/hepatic artery flows of 1.40L/0.39L

Median post-op LFTs are shown in Table 1. All patients had normalizing transaminases and synthetic function, with markedly and progressively increasing T-Bil at graft failure. Mean Cr was 2.8 at graft failure and 7/12 patients required HD

Mean graft survival was 25.4d (Range 12-42d), 75% were retransplanted and 1-yr patient survival was 50%. All post-OLT biopsies demonstrated significant cholestasis

CONCLUSIONS

We define secondary non-function as a syndrome of cholestatic graft failure in the absence of vascular/biliary pathology, absence of ACR or recurrent disease,and with normalized synthetic function. Renal insufficiency commonly develops. No extraordinary recipient, donor or operative parameters predispose to this failure. Graft survival time exceeds typical PNF, and patient survival is only 50% at 1 year despite most being retransplanted.

Table 1: Median Post- OLT Liver Function Tests and Cr

	AST	ALT	PT	T-Bil	Cr
Day 2	1461	1427	17.0	12.7	1.5
Day 7	129	313	14.5	20.6	2.0
Day 14	77	98	13.3	23.2	1.9
Graft Failure Day	86	100	13.7	29.8	2.7

Abstract# 265 Poster Board #-Session: P67-II

LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA BEYOND MILAN CRITERIA. Kyung-Suk Suh[1], Eung-Ho Cho[1], Hae Won Lee[1], Woo Young Shin[1], Jai Young Cho[1], Nam-Joon Yi[1], Won Kim[2], Jung-Hwan Yoon[2], Kuhn Uk Lee[1]. *[1]Department of Surgery, Seoul National University College of Medicine, Seoul, Republic of Korea; [2]Department of Internal Medicine, Seoul National University College of Medicine, Seoul, Republic of Korea.*

Background Milan criteria have been accepted worldwide as identifying candidates with good prognoses and low recurrence rates. We analyzed survival after liver transplantation and investigated good prognostic factors in patients with HCC exceeding Milan criteria.

Method Between November 1997 and December 2005, 104 cases of liver transplantation for patients with HCC were performed at Seoul National University Hospital, Seoul, Korea. Among the patients, 24 patients exceeded Milan criteria at the time of operation. We analyzed the survival of these 24 patients after transplantation, and investigated the influencing factors for survival of them. Male to female ratio was 18/6, mean age of the patients was 53 years, and mean F/U period was 28.4months (9~84 months). Underlying liver disease were hepatitis-B in all patients. Portal vein invasion was confirmed in five patients out of the 24 patients, preoperatively.

Result Three year overall survival rates were 89.8% in patients within Milan criteria and 46.9% in patients beyond Milan criteria (0.0002). Three-year survival of the patients exceed Milan criteria rises to 65.4% when preoperative portal vein invasion was absent (n=19). Good prognostic factors for survival were preoperative alpha-fetoprotein less than 400ng/ml, absence of microvascular invasion, and Edmonson-Steiner's histological grade 1 and 2.
Conclusion If vascular invasion is absent in preoperative radiological study and preoperative AFP less than 400ng/ml, we can consider liver transplantation for HCC patients beyond Milan criteria in carefully selected cases.

Abstract# 266 Poster Board #-Session: P68-II

TRANSPLANT FOR PATIENTS OUTSIDE THE MILAN CRITERIA CAN YIELD GOOD RESULTS. Javier Chapochnick[1], Alger Aquino[1], Takahiro Murakami[1], Ahmed Fahmy[1], Devon John[1], Thomas Diflo[1], Glyn Morgan[1], Lewis Teperman[1]. *[1]Transplant Center, New York University School of Medicine, New York, NY, USA.*
Introduction: Liver transplantation is accepted as one of the curative treatments for patients with the diagnosis of hepatocarcinoma. The Milan criteria have remained the standard inclusion criteria for over a decade. Nevertheless, not much is known regarding the results of liver transplantation in patients with tumors outside of the Milan criteria.
Aim: The aim of this study is to report the experience of our program in patients with the diagnosis of hepatocarcinoma since the start of the MELD system, February 2003, through November 2006. We compared the results of patients that met and didn't meet the Milan criteria.
Method & **Results:** A retrospective review of our database was performed from February 2003 to November 2006. Our program transplanted 102 patients with the diagnosis of hepatocarcinoma. This group included 80 male patients (78%) and 22 female patients (22%), ages ranged between 37 and 74 (mean 57). The Meld score of the patients ranged from 9 to 40 (mean 28). Six of the patients received a graft from a living donor the rest received a deceased donor graft. The 1-year survival for the group was 91%. Thirty three percent of the patients were found to be outside of the Milan criteria or have vascular invasion at explant pathology. The 1-year survival of this extended subgroup was 79%. Patients surviving greater than 1 year were compared with patients who expired in less than 1 year. No difference was observed in the surgical technique, immunosuppression treatment, MELD score, adjuvant therapy or etiology of liver disease. Tumor pathology and vascular invasion characteristics were reviewed.
Conclusion: Our results suggest that even if the Milan criteria is a predictor of good outcome some patients with tumors outside of the Milan criteria can benefit from liver transplantation and have an acceptable 1 year survival. More study is needed to help define this subgroup of patients.

Abstract# 267 Poster Board #-Session: P69-II

ALCOHOLIC CIRRHOSIS AS A RISK FACTOR FOR THE DEVELOPMENT OF BILIARY COMPLICATION IN LIVER TRANSPLANTATION. C. Quintini[1], A. Cocieru[1], F. Aucejo[1], K. Hirose[1], K. Hashimoto[1], S. Nakagawa[1], T. Diago Uso[1], B. Eghtesad[1], C. Winans[1], D. Vogt[1], D. Kelly[1], J. Fung[1], C. Miller[1]. *[1]Surgery-Liver Transplant Program, Cleveland Clinic Foundation, Cleveland, OH, USA.*
INTRODUCTION. Previous studies have suggested a higher rate of biliary complications in patients who undergo orthotopic liver transplantation (OLTx) for alcoholic cirrhosis. These patients often exhibit more severe changes in portal venous hemodynamics than patients with other forms of ESLD and this may account for the imbalanced intrahepatic arterial flow, wich is crucial for the biliary tree perfusion. The goal of this study was to retrospectively analyze risk factors for the development of biliary complications.
MATERIALS AND METHODS. We reviewed the records of 281 patients who underwent OLTx at our institution between January 2001 and January 2005. Multiple parameters, including patient and donor characteristics, intra and post-operative data and the surgical technique used for the biliary reconstruction were analyzed. Biliary complications were characterized as either leak vs. stricture and early vs. late (<3 months vs. >3 months post-OLTx).
RESULTS. 67 out of 281 (24%) patients developed a biliary complication. Cox proportional hazards stepwise regression was used to determine risk factors for biliary complications. Patients with a diagnosis of alcoholic cirrhosis had a relative risk of biliary complication 2.4 times that of patients with other diagnoses (p=0.003). Patient and graft survival in patients transplanted for non alcoholic end-stage liver disease (ESLD) were comparable to those transplanted for alcoholic cirrhosis.
CONCLUSIONS. Although alcoholic ESLD represent a good indication for liver transplantation, particular attention to these patients should be paid in regard to the possibility of developing a biliary complication. The pathophysiology of alcoholic disease together with more advanced portal hypertension which is distinctive for alcoholic ESLD may account for the higher incidence of biliary complications found in our study population.

Abstract# 268 Poster Board #-Session: P70-II

CLINICAL SITUATION OF VHC (+) LIVER TRANSPLANT PATIENTS AFTER 10-YEAR OF SURVIVAL. Itxarone Bilbao[1], Cristina Dopazo[1], Ernesto Castro[1], Gonzalo Sapisochin[1], Alfredo Escartin[1], Luis Castells[2], Jose L. Lazaro[1], Inigo Lopez[1], Joaquin Balsells[1]. *[1]Liver Surgery and Transplantation, Hospital Vall d'Hebron, Barcelona, Spain; [2]Hepatology, Hospital Vall d'Hebron, Barcelona, Spain.*
Objectives: To analyze the clinical situation of HCV(+) liver transplant patients with a survival of 10 years and to compare them with HCV(+) patients that have not survived this period.
Materials and Methods: From 1988 to 1996, 116 HCV (+) patients had a liver transplant with ≥10-year follow-up. Of these, 53 are alive and 63 are dead. The average age was 57 years.The immunosuppressive induction was 81% CyA, and 19% FK. Both groups have been compared regarding demographic characteristics of recipient, donor and surgery, and short and long term complications. Causes of mortality in the group with <10 years survival have been also analyzed.
Results: The main causes of mortality were: relapse of VHC 22% and HCC 14%, medical causes 18% and sepsis-infection 10%. Concerning recipient characteristics (univariant analyses), patient with short survival had higher incidence of pre-LT renal failure and DM. There were no differences in donors or surgery. In the group with long term survival, steroids were removed in greater percentage (100% vs. 65%). Patients with ≥10 years survival showed lower incidence of rejection(41% vs 45%), infection (37% vs 54%) and renal failure (33% vs 43%), at one year post-LT. Alive VHC (+) patients 10 years after LT showed: 45% chronic renal failure, 83% arterial hypertension, 28% IDDM, 17% dyslipidemia, 68% VHC relapse in the graft.
Conclusion: In HCV (+) patients, HCC indication for LT, pre-LT renal failure and diabetes are risk factors of lower survival on the long term. To achieve long survival after LT is essential to apply early agressive immunosuppressive regimens that avoid rejection and the use of steroids, but late inmunosupression drugs avoiding CNI as much as possible.

Abstract# 269 Poster Board #-Session: P71-II

PREGNANCY AND DELIVERY IN LIVER GRAFT RECIPIENTS. Zoulika Jabiry-Zieniewicz[1], Katarzyna Bobrowska[1], Miroslaw Wielgos[1], Pawel Kaminski[1], Krzysztof Zieniewicz[2], Marek Krawczyk[2]. *[1]I Department of Obstetrisc and Gynecology, Medical University of Warsaw, Warsaw, Poland; [2]Department of General, Transplant and Liver Surgery, Medical University of Warsaw, Warsaw, Poland.*
Objectives. End-stage liver failure is associated with severely disturbed sex hormones metabolism and reproductive function. Within one year after liver transplantation 97% of female graft recipients of reproductive age recover menstrual cycle and have the chance to conceive and give birth to a child. The aim of the study was to assess pregnancy course and outcomes in liver graft recipients with the respect to the safety for both the mother and the fetus.
Material and methods. We retrospectively analyzed data of 20 liver transplanted women, aged from 23 to 38 years, who delivered babies in I[st] Department of Obstetric and Gynecology, The Medical University of Warsaw. In one woman two successful pregnancies were noted after grafting. The period from grafting varied from three months to six years. Nine patients received tacrolimus and one woman was treated with cyclosporine. Throug levels of immunosuppressive agents were monitored and individual dosage was adjusted.
Results. The mean gestation age at delivery was 36,3 weeks. All neonates were delivered in good state and no congenital abnormalities were observed. Premature labor and intrahepatic cholestasis were most often observed complications. Four spontaneous vaginal deliveries and sixteen caesarean sections were noted in the group. All caesarean sections were performed for obstetrical indications. No case of graft rejection was observed.

Conclusion. High-risk pregnancies in liver transplanted women are generally associated with good outcomes, although an increased rate of preterm labor and intrahepatic cholestasis is observed. Pregnancy does not seem to impair graft function in patients receiving immunosuppressive therapy.

Abstract# 270 Poster Board #-Session: P72-II

RESPIRATORY FUNCTION IN CIRRHOTIC PATIENTS WHO UNDERWENT ORTHOTOPIC LIVER TRANSPLANTATION (OLT) EMPHASYS IN INTRAPULMONARY SHUNTS. Jose S. Moreira[1], Gisele Bassani[1], Claudio A. Marroni[2], Ajacio B. M. Brandao[2], Eduardo Garcia[1], Maria L. Zanotelli[3], Guido Cantisani[3]. *[1]Department of Pneumology, Complexo Hospitalar Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil; [2]Internal Medicine - Hepatology, FFFCMPA, Porto Alegre, Rio Grande do Sul, Brazil; [3]Grupo de Transplante Hepatico de Adultos, Complexo Hospitalar Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil.*

Introduction: Pulmonary capacities and flow are usually in the normal range in cirrhotic patients, unless associated conditions such as pulmonary diseases or large ascitis are present. The reduction of functional capacity, hypoxemia, increase in the alveolo-arterial gradient and the presence of intrapulmonary shunts are common findings of cirrhosis. The effects of OLT over these changes has not yet been well stablished.

Objectives: Study the changes in respiratory function in those who underwent OLT, emphasizing the intrapulmonary shunts.

Patients and Methods: fifty-one cirrhotic patients without pulmonary or cardiac disease who under went OLT. Evaluation of respiratory function, including mesuarement of FEV1, FVC, CO diffusion, resting arterial blood gás (ABG) in ambient air as well as with oxygen 100% besides Doppler ultrasonography to search for intrapulmonary shunts.

Results: Flows and volumes did not vary from its normal range after OLT, being mean FVC: 85% and FEV1: 93 %. The CO diffusion and the mean PaO2 were significantly improved after OLT. It was also verified an important reduction of intrapulmonary shunts.

Conclusions: The pulmonary capacities and flows were not influenced by OLT. On the other hand, significant improvment of CO diffusion and PaO2 levels as well as the reduction of intrapulmonary shunts suggest that OLT could be na important therapeutic strategy for patients who develop hepatopulmonary syndrome.

Abstract# 271 Poster Board #-Session: P73-II

AUTOANTIBODIES AFTER PEDIATRIC LIVER TRANSPLANTATION. Gilda Porta[1], Irene K. Miura[1], Vera L. Baggio[1], Renata S. Pugliese[1], Tereza Guimaraes[1], Eduardo Carone[1], Joao Seda Neto[1], Alcides A. Salzedas Netto[1], Vincenzo Pugliese[1], Andre Godoy[1], Paulo Chapchap[1]. *[1]Liver Transplant Unit, Hospital do Cancer/Hospital Sirio Libanes, Sao Paulo, Brazil.*

Post-transplant autoimmune hepatitis has been reported in adults and children, and must be considered as a cause of graft dysfunction after liver transplantation. The detection of non organ specific autoantibodies may separate de-novo autoimmune hepatitis from acute cellular rejection or other causes of graft injury. Several reports showed high frequency of autoantibodies after pediatric liver transplantation (LTx) and nearly 5% of de novo autoimmune hepatitis. The aim of this study was to verify the prevalence of autoantibodies in children submitted to liver transplant, and to correlate its presence with biochemical markers of liver injury. From October/1995 to September/2006 103 children submitted to Ltx were screened for the following non organ specific autoantibodies: antinuclear antibodies (ANA), smooth muscle antibodies (SMA), liver kidney microsomal antibodies (LKM), antimitochondrial antibodies (AMA) after the first post-transplant year. 55 patients were male and the median age at the time of transplant was 1.6 years (range 0.3 to 18). The majority of the patients (53%) had biliary atresia and five patients had autoimmune disease. The basic immunosuppression consisted steroids and tacrolimus. 11 (10.6%) children (5F:5M) showed the presence of at least one autoantibodies, 5 ANA positive (title >1/80) and 5 SMA positive (title $\geq$ 1/20). The underlying disorder did not influence the presence of autoantibodies post-transplantation. There was no statistically significant difference in liver function tests (LFTs) and on the presence of hipergammaglobulinemia if we compare patients with positive autoantibodies with those without the markers. In the present study the prevalence of non organ specific autoantibodies after liver transplantation was low. The underlying mechanisms leading to the presence of autoantibodies is not known and further studies, including follow-up of these patients are needed to evaluate its long term consequences.

Abstract# 272 Poster Board #-Session: P74-II

METHYLENE BLUE AS A BRIDGE TO RECOVERY FROM LIVER TRANSPLANTATION: CASE REPORT. Joyce Roma, A. Carolina Galvão, Ivan Zyngier, Zulane Veiga, Denise Leite, Jefferson Alves, Rodrigo Amil, Marcelo Enne, Joao Pereira, Cassia Guedes, Elizabeth Balbi, Lucio Pacheco. *[1]Liver Transplantation Unit, Hospital Geral de Bonsucesso, Rio de Janeiro, Brazil.*

Liver transplantation (LT) is the only therapy for hepatopulmonary syndrome (HPS). Improvement in gas exchange occurs in more than 85% of patients. Time to normalize hypoxemia after LT is variable and may exceed 1 year. Methylene blue (MB) is an agent that blocks stimulation of soluble guanylate cyclase by nitric oxide (NO). It has been safely used to treat many clinical situations leading to induced vasodilatation, and could be a low risk treatment option for post-operative(PO) LT recovery in HPS.

Case: A 15 year-old girl with cirrhosis from autoimmune hepatitis and HPS was evaluated for LT. She was on supplemental O2 in the previous year. Physical examination showed an anicteric patient with digital clubbing, peripheric cyanosis, vitiliginous lesions and there were no hepatic failure signs, ascitis or hepatomegaly. Chest auscultation and cardiac exam were normal. Arterial blood gas measurements on room air, in sitting position: pH 7,45; pC02 23,3mmHg; p02 43,6mmHg; HC0316mmol/L; Sat02 81,2%. Chest X- ray and pulmonary function test: normal. The per-operative was uneventful, except by great difficulty to promote adequate gas exchange. There were no blood transfusion during surgery. PO course in the intensive care unit was marked essentially by worsening on her oxygenation pattern, with severe hypoxemia and weaning failure. The hypoxemia was unresponsive to conventional therapy (pressure control, high peep and low tidal volumes). The mental status was preserved. After 2 crashed attempts of extubation on the 28th PO day, intravenous administration of MB was started, 3mg/Kg, over a 15' period. Table 1 shows arterial blood gas pre and post MB. The endotracheal tube was removed on the first day after MB when sat02 was stable (85-92%). However, after weaning from the ventilator, she developed mild hypoxemia that required O2 supplementation.

Conclusion: Intravenous MB can improve hypoxemia in patients with HPS and is a safe option in LT. Although limited to 1 patient, our observation suggests that the PO complications and mortality can decrease with MB.

	PreMB	10' MB	40' MB	2hMB	4hMB	1st dayMB	Extubation
pO2	34,9	38,6	34,8	35,5	39,2	39,8	48,4
FiO2	0,7	0,65	0,65	0,65	0,45	0,5	2l/minO2
SatO2(%)	71	86	86	73	82,9	72,4	85,7
P/F	49,8	53,5	53,5	54,6	87,1	79,6	

Abstract# 273 Poster Board #-Session: P75-II

LIVER TRANSPLANTATION FOR END-STAGE CHRONIC LIVER DISEASE. TOWARD ZERO HOSPITAL MORTALITY. R. Santoro[1], G. M. Ettorre[1], G. Vennarecci[1], P. Lepiane[1], F. Carboni[1], M. Antonini[2], G. Tacconi[2], M. Maritti[2], L. Tessitore[2], L. Miglioresi[1], E. Santoro[1]. *[1]Department of Digestive Surgery and Liver Transplantation, Regina Elena Cancer Institute, Rome, Italy; [2]Department of Anestesiology, Regina Elena Cancer Institute, Rome, Italy.*

BACKGROUND: The standard diagnostic indications for OLT are postviral, alcoholic, cholestatic or cryptogenetic end-stage cirrhosis, associated or not with HCC. The aim is to analyse the surgical outcome of the first 100 consecutive patients undergoing LT for standard indications at the Regina Elena Cancer Institute of Rome since 2002. METHODS: 90M/10F, median age 52 years (range 31-67), suffering from HCV (58), HBV (19), HCV+HBV (9), alcoholic (8), cryptogenetic (4) or cholestatic (2) cirrhosis. HCC was associated in 39 cases. Expanded donor criteria were used to accept the liver donor, and marginal donors were used in 36 cases. Donor median age was 55 years (range 12-82). Grafts were preserved using double infusion from both aorta and portal vein, and the liver graft was removed en bloc with the pancreas and retroperinoneum, in order to reduce the risk of procurement-associated injuries of the hepatic artery. Recipient incision was started as the harvesting team was back at the hospital. RESULTS: Piggy-back technique was feasible in all cases. Venovenous bypass was used in one case. Major donor arterial variation requiring arterial reconstruction were found in 14 cases. Median cold ischemic time was 390 min (range 250-700). Forty-two patients did not received intraoperative blood transfusions (42%). In-hospital mortality was 2%, because of hemorrhagic shock (1 pt) and respiratory failure (1 pt). Major morbidity rate was 19%. Three patients (3%) underwent re-LT for primary non-function (PNF), because of severe steatosis (2 pts) or acute Budd-Chiari (1 pt), and recovered. Re-operation rate was 6%, because of bleeding (5 pts) and suspected hepatic artery thrombosis (1 pt). In six

patients, persistent ascites and renal failure resolved within 2 months after LT. One patient had thrombosis of the right hepatic artery and recovered. Median hospital stay was 18 days (range 9-60). In this population, 1-, 2- and 3-years survival were 92%, 88% and 85% respectively. CONCLUSIONS: This series shows that LT for end-stage liver disease can be performed with low morbidity and mortality rate. Appropriate harvesting and transplanting technique and peri-operative management will allow in the future to perform OLT without hospital death.

Abstract# 274 Poster Board #-Session: P76-II

PARAMETERS OBTAINED BY HEPATOBILIARY SCINTIGRAPHY HAVE SIGNIFICANT CORRELATION WITH BIOCHEMICAL FACTORS EARLY AFTER LIVER TRANSPLANTATION. Shinji Yamamoto[1], Rimma Danielsson[2], Hassan A. Kansoul[1], Irina Savicheva[2], Peter Aspelin[2], Henrik Gjertsen[1], Bo-Göran Ericzon[1]. *[1]Division of Transplantation Surgery, Department of Clinical Science, Intervention and Technology, Karolinska Institute, Stockholm, Sweden; [2]Division of Radiology, Department of Clinical Science, Intervention and Technology, karolinska institute, Stockholm, Sweden.*

Purpose: Multiple factors affect the outcome of liver transplantation (LTx), and initial quality and function of the liver grafts is essential for the early and late clinical course of patients. Laboratory biochemical tests are informative of the early postoperative liver function and hepatobiliary scintigraphy is another option to dynamically evaluate liver function. Our aim is to examine the correlation between the result of early postoperative hepatobiliary scintigraphy and pre- and postoperative biochemical parameters in LTx patients.

Material and Methods: Six parameters of hepatobiliary scintigraphy using 99m-Tc-Mebrofenin; 1. Half-time of the activity of elimination of Mebrofenin from the blood (CB-half time). 2. Total clearance of Mebrofenin from the blood due to all possible routes (CB-clearance). 3. Half times of the activity to liver uptake (CL-half time). 4. Clearance of Mebrofenin from the blood due to liver uptake (CL-clearance). 5. Time to maximal uptake in liver (CL-time to max). 6.The hepatic extraction fraction (HEF), and 6 biochemical data; peak values of aspartate aminotransferase (ASAT) and of alanine aminotransferase (ALAT), preoperative total bilirubin, total bilirubin, alkaline phosphatase and lactate dehydrogenase on the third day after LTx,were statistically analyzed in 108 LTx patients. Analysis between patients with preoperative normal liver function, Familial amyloid polyneuropathy (FAP) patients, and patients with end stage liver disease (non-FAP) patients was also performed.

Results: Total bilirubin postoperative day 3 was significantly correlated with all 6 scintigraphic parameters. Postoperative peak ASAT and ALAT had correlation with CB-clearance and HEF. The analysis between patients with FAP and non-FAP revealed no significant difference of scintigraphic data between the two groups.

Conclusion: The significant correlation between early postoperative scintigraphic results and biochemical parameters were demonstrated. Hepatobiliary scintigraphy is therefore a valuable diagnostic method to evaluate initial liver quality and function.

Abstract# 275 Poster Board #-Session: P77-II

LIVER UNIT: 1000 TRANSPLANTS. Sergio Mies[1], Thomson M. Palma[1], Thiago Beduschi[1], Vinicius M. R. Silva[1], Ana Olga N. G. F. Mies[1], Ana Sueli Zan[1], Bianca Della-Guardia[1], Carlos E. S. Baia[1], Eloisa H. Quintela[1], Leonardo R. Ferraz[1], Marcio D. Almeida[1], Margareth P. Lallee[1], Osvaldo I. Pereira[1]. *[1]Liver Unit, Albert Einstein Hospital, Sao Paulo, SP, Brazil.*

Introduction: Liver Unit is the oldest liver transplant team in Brazil. This group has the historical importance of been the first to accomplish a successful liver transplant program in Latin America, on September 1st, 1985, and was also the first center to perform living-donor liver transplantation on the world, in July 21st, 1989.

Objective: Briefly describe outcome of 1000 transplants.

Method: Data was collected from patient's hospital files. Kaplan-Meir methods were used to estimate patient survival.

Results: Between 1985 and 2001 the Liver Unit performed 530 transplants at University of São Paulo's Hospital. 487 (91.9%) were deceased donor, 25 (4.7%) were living-donor and 18 (3.4%) were domino transplant. The indication for liver transplantation was viral cirrhosis in 38% of the patients, followed by cholestatic liver disease in 12%, alcoholic cirrhosis in 9%, familial amyloid polyneuropathy in 7%, acute liver failure in 5% and 19% of other causes. Retransplantation was responsible for 9.2% of the indications. 1-year and 3-years patient overall survival was respectively roughly 74% and 66%.

Between January 2nd, 2002 and December 1st, 2006 the Liver Unit performed 446 transplants at Albert Einstein Hospital. 289 (64.8%) were deceased donor, 140 (31.4%) living-donor and 17 (3.8%) domino transplants. The patients were 285 (63.2%) males, with a median age of 50.4 years. Median model for end-stage liver disease score was 16 (range 6-40). The most common indication for transplant was viral cirrhosis in 154 cases (34.5%), followed by hepatocellular carcinoma in 94 (21.1%). The median hospitalization time was 16 days (range 10-275 days). Retransplantation was indicated for 50 patients (11.2%) and the main reason was arterial thrombosis (50%). 1-year and 3-years patient overall survival was respectively 78.8% and 74.8%.

Conclusions: After 20 years, Liver Unit reaches a remarkable number of 976 liver transplants, confirming its place of the leading team in South America.

Abstract# 276 Poster Board #-Session: P78-II

IS HIGH-DOSE APROTININ SAFE AND NECESSARY FOR PATIENTS UNDERGOING ORTHOTOPIC LIVER TRANSPLANTATION? Mitsuru Nakatsuka, Daniel Maluf, Adrian Cotterell. *[1]Anesthesiology, VCU Health System, MCV Campus, Richmond, VA, USA; [2]Division of Transplant Surgery, VCU Health System, MCV Campus, Richmond, VA, USA; [3]Division of Transplant Surgery, VCU Health System, MCV Campus, Richmond, VA, USA.*

Use of high dose aprotinin has been claimed to be safe and effective in all patients undergoing orthotopic liver transplantation(OLT),by reducing blood loss and maintaining better hemodynamic stability.However,thromboembolic complications during OLT with use of aprotinin have been reported.We had 3 cases of catastrophic intracardiac thrombotic events during OLT only with high doses of aprotinin and aminocaproic acid.We question whether high dose aprotinin is safe and necessary.Over 1000 cases of liver transplantation done in our institution have been reviewed.We initiated use of high dose antifibrinolytic drugs,mainly aprotinin,in 1997.Within 6 months of starting use of these agents,we had 3 cases of sudden hemodynamic collapse due to massive intracardiac thrombus formation,leading to operative deaths. No 1 with aprotinin(loading dose of 2 million KIU,infusion dose of 500,000 KIU/Hr) with sudden onset of cardiovascular collapse due to massive intracardiac thrombus during veno-venous bypass.No 2 with aprotinin(1 million KIU,250.000 KIU/Hr) with profound hypotension with huge intracardiac thrombus shortly after reperfusion,detected by TEE.No 3 with high dose of aminocaproic acid.We terminated practice of high dose aprotinin.We adopted small dose of aprotinin(200.000KIU,150.000KIU/Hr) in 1997.Since then we have not encountered a single episode of cardiovascular collapse with small dose.However ,we have seen occasional pulmonary emboli with and without small dose aprotinin.Median blood requirement has been 2 to 6 RBC units.

Conclusion: High dose aprotinin may not be safe nor necessary and may be responsible for significant intracardiac thrombotic complications during OLT especially when veno-venous bypass is used.Small dose aprotinin may be safely used during OLT.We recommend routine use of TEE during OLT.

Abstract# 277 Poster Board #-Session: P79-II

IMPACT OF MELD SCORING ON LIVER TRANPLANTATION OUTCOMES. Joyce Roma, Ana Carolina Gonzalez, Ivan Zyngier, Zulane S. T. Veiga, Kelly C. G. Flausino, Maricarmem C. C. Pan, Cassia R. Guedes, Alexandre Cerqueira, Jefferson A. S. Alves, Rodrigo Amil, Marcelo Enne, João L. Pereira, Elizabeth Balbi, Lucio Pacheco-Moreira, Marcia Halpern, Denise Leite. *[1]Liver Transplantation Unit, Hospital Geral de Bonsucesso, Rio de Janeiro, Brazil.*

Introduction: The implementation of the model for end-stage liver disease (MELD) score has decreased mortality in liver transplantation (LT) waiting list in the United States, and was recently implemented in Brazil. We compared outcomes of LT in 8 patients prior and after MELD implementation in our transplant center. We considered that an elevated pool of patients and donor organ shortage could mean greater MELD scoring and worse outcomes during and after transplantation.

Patients and Methods: We conducted a retrospective study considering 16 patients submitted to liver transplantation between April and October 2006. Eight patients who underwent LT prior to implementation of MELD scoring system (Group 1) were compared to the 8 patients following its

implementation (Group2). Clinical and biochemical parameters were recorded. Outcomes were defined as MELD score, blood transfusion, operating room (OR) extubation, ICU stay, death (Table 1)
Results: Our study suggests that implementation of MELD score has increased morbidity and mortality in patients undergoing liver transplantation.
Conclusion: This finding should be analyzed in the context of a center with a high pool of patients waiting for a liver transplantation and donor organ shortage, leading to selection of high MELD scores patients. For those awaiting liver transplantation, the best policy for graft allocation might be dependent on the pool of patients and number of transplants the center is able to offer.This severe organ shortage scenario in a developing country leads local liver transplantation teams to propose a high limit value to MELD score, regarding high costs and worse outcomes.

Parameters analysed in Group 1 and 2

	MELD	Blood transfusion	OR extubation	ICU stay	Death
Group 1	13,75 +/- 4,33	0	62,5%	5,13 +/- 1,13	0
Group 2	17,75 +/- 11,9	87%(0,87+/-1,35)	37,5%	8,63 +/- 6,57	3

Abstract# 278 Poster Board #-Session: P80-II

FOURNIER´S GANGRENE AFTER LIVER TRANSPLANTATION. Eduardo Fernandes[1], A. Claudia Rozenfeld[1], Rodrigo Martinez[1], Joaquim Ribeiro-Filho[1]. *[1]Departamento de Cirurgia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil.*

Fournier´s gangrene is a gangrenous infection of the perineo-genital and abdominal area, with a normally abrupt, rapidly progressive course. Although this syndrome is rare after liver transplantation, several factors present in this condition such as malnutrition, chronic alcoholism and steroid use may predispose to it´s development. Here we report two cases of patients from our institution that developed the syndrome at different post-transplant times. As expected from the literature, our cases confirm the high mortality from the syndrome and the need to an agressive surgical and medical approach to treat the disease.

Abstract# 279 Poster Board #-Session: P81-II

SYSTEMIC HYPERKINETIC STATE: AN INDEPENDENT PREDICTIVE MARKER OF EARLY MORTALITY IN CIRRHOTIC PATIENTS NOT RECEIVING BETA-BLOCKERS. Claire Francoz[1], Richard Moreau[1], Rodolphe Sobesky[1], Catherine Paugam-Burtz[2], Didier Lebrec[1], Jacques Belghiti[1], Dominique Valla[1], Francois Durand[1]. *[1]Hepatology and Liver Transplant Unit, Hospital Beaujon, Clichy, France; [2]Anesthesiology and intensive care unit, Hospital Beaujon, Clichy, France.*

Introduction: Systemic hyperkinetic state which is characterized by increased cardiac output (CO), decreased mean arterial pressure (MAP) and decreased systemic vascular resistances (SVR) is frequent in cirrhotic patients. Hemodynamic changes are more pronounced in patients with advanced cirrhosis. However, the impact of the hyperkinetic syndrome on mortality has not been investigated. The aim of this study was to assess the influence of markers of systemic hyperkinetic state on waiting list mortality in cirrhotic candidates for LT.
Patients and methods: 203 cirrhotic patients listed for a first LT between 1995 and 2004 were studied. All these patients underwent right heart catheterization for measurements of systemic hemodynamics as part of evaluation workup. Etiology of cirrhosis was alcohol, HBV, HCV, biliary disease and miscellaneous causes in 53%, 13%, 25%, 4% and 5% of patients, respectively. Twenty percent of patients had HCC. 120 patients were receiving beta-blockers (group 1) whereas 74 (group 2) were not receiving beta blockers.
Results: 143 patients (70%) were transplanted and 20 were removed from the waiting list (7 due to improvement and 13 due to HCC progression). The remaining 40 (19%) patients died on waiting list, 4 ± 4 months after listing. Mean age, gender, the incidence of HCC, bilirubin, INR, creatinine, ascites, Child and MELD scores were comparable in 2 groups. Patients in group 1 had significantly larger oesophageal varices and more frequently a past history of variceal bleeding compared to group 2 patients (p=0.001 and p=0.004, respectively). Among group 2 patients, 16 (22%) died on waiting list. In this population, multivariate analysis showed that INR and decreased SVR were independent predictive factors of death on the waiting list with p values of 0.01 and 0.04, respectively. Conversely, in group 1 patients, none of the systemic hemodynamic markers were predictive of the outcome.
Conclusion: The results of this study suggest marked hyperdynamic state with decreased SVR represents an independent marker of poor prognosis in cirrhotic patients. However, the prognostic impact of hyperkinetic state is undetectable in patients receiving beta-blockers as a prophylaxis of variceal bleeding.

Abstract# 280 Poster Board #-Session: P82-II

INFECTIOUS SCREENING IN HIGH MELD PATIENTS IS THE KEY TO OPTIMIZE GRAFT-RECIPIENT MATCH IN LIVER TRANSPLANTATION. Vinicius Rocha-Santos, Estela R. R. Figueira, Telesforo Bacchella, Rodrigo T. C. Surjan, Edson Abdalla, Ailton Sepulveda, Mauricio F. A. Barros, Marcel C. C. Machado. *[1]Gastroenterology, University of Sao Paulo, Medical School, Sao Paulo, Brazil.*

MELD system is an evidence-based approach to organ allocation. However, previous studies had suggested that the change in MELD score is more predictive of 30-day mortality than any single MELD score for an individual patient. It requires a constant examination to verify delta-MELD variation as well as their possible etiologies. In a country with great shortage of deceased donors all efforts must be made to evaluate the real health condition of the recipients to optimize graft-recipient match.
Aim: To evaluate the cirrhotic patients with a single MELD above 25 and the respective delta-MELD regarding the real condition to undergo liver transplantation.
Material and Method: Between July and December 2006, 28 cirrhotic patients with MELD above to 25 were listed in our institution. Our policy after MELD implantation has been to hospitalize all these patients to perform an infectious and clinical screening. Fourteen patients (50%) presented hepatic encephalopathy, 3 (10.7%) had fever and 3 (10.7%) abdominal pain. The mean actual MELD was 30.6 (range, 25 to 41), mean serum creatinine level 2.3 (range, 0.75 to 5.87), mean total bilirrubine 14.15 (range 1.68 to 41.7) and mean INR 2.4 (range, 1.5 to 4.3). Delta-MELD in the previous 30 days ranged from 0 to 22 (mean 10.07).
Results: Of 28 patients, 24 (85.7%) had no medical condition to liver transplantation at admission. Twenty one (75%) had bacterial infection (14 spontaneous bacterial peritonitis, 2 erysipelas, 2 bronchopneumonia, 2 urinary tract infection and 1 cholangitis), 2 (7.1%) variceal bleeding and 1 (3.5%) progression of portal vein thrombosis. Fifteen of these patients (62.5 %) died and 9 (37.5%) had their liver function improved after medical treatment. Only 2 patients kept MELD score above 25. Six patients (21.4%) maintaining high MELD had condition to liver transplantation, 4 since admission and 2 after medical treatment. Four were transplanted and two are waiting for a graft.
Conclusion: Only 21.4% patients with MELD above 25 might be transplanted. A single MELD score may not be enough to determine who should undergo liver transplantation. The delta MELD evaluation with a rigorous infectious screening is very important to identify the best graft-recipient match.

Abstract# 281 Poster Board #-Session: P83-II

SOCIAL ASPECTS OF ADULTS LIVER TRANSPLANT CANDIDATES AT SANTA CASA OF SAO PAULO, BRAZIL. Norma A. Amaral[2], Andre I. David[1], Marcia Turolla[2], Bernadete P. Pacheco[2], Leila M. Bocchi[2], Adriana Z. Coppini[3], Luiz Arnaldo Szutan[1], Paulo C. Massarollo[1]. *[1]Surgery, Santa Casa de Sao Paulo, Sao Paulo, SP, Brazil; [2]Social Service, Santa Casa, Sao Paulo, SP, Brazil; [3]Clinical Medicine, Santa Casa, Sao Paulo, SP, Brazil.*

Background:
Liver transplant is a complex therapeutic procedure where the knowledge of the social and financial aspects of the patients are very important. In the other hand, the patients need to be able to understand and comply with the treatment. We usually don't have this social information and an analysis of the patients understanding, in the public hospitals, where we have universal access for all patients.
Aim:
Social analysis of liver transplant candidates evaluated at Santa Casa of São Paulo.
Methods:
Retrospective analysis of 58 social reports of adult patients, with at least 18 years old, listed to do liver transplant in the period of October 2001 through February 2005. We analyzed demographics, habitation conditions, financial situation, familial structure and degree of information about the treatment.

Results:
Total number of candidates was 58. Demographics: 43 males (74.1%), median age was 49 years and 33(56.9%) borned in São Paulo State, 4 (6.9%) analphabets and 26(44.8%) with incomplete primary school. Habitation conditions: 39 (67.2%) have their own home, 56 (96.6%) have concrete houses, with a mean of 2 bedrooms and with 3 people living there, including the patient and 43 (74.1%) with easy access to the hospital. Financial situation: 3 (5.2%) unemployed, 16 (27.6%) with unhealthy support, 6 (10.4%) working at home and 33 (56.9%) with labor activities, mean familial income of US$ 600.00 per month and US$ 180.00 per capita. Familial structure: 29 (50%) married, 50 (86.2%) with a stable relationship, 55 (94.8%) have caregivers. Information about the treatment: 50 (86.2%) with compliance and 53 (91.4%) have knowledge about the diagnostic and prognostic of the disease and the therapeutic.
Conclusion:
Liver transplant candidates at Santa Casa of São Paulo have adverse social-economic situation with a low financial income and a low scholar degree. They need social professional assistance and governmental support in order to understand and comply with the treatment.

Abstract# 282 Poster Board #-Session: P84-II

THE EFFECT OF PROSTAGLANDINE E1 AND N-ACETYLCYSTEINE IN THE PRESERVATION OF THE GRAFT DURING COLD ISCHEMY IN THE LIVER TRANPLANTATITION. Alessandro D. Louzada, Maria L. Zanotelli, Leonardo Winkelmann. *[1]Surgery, Hospital de Clinicas de Porto Alegre, Porto Alegre, RS, Brazil; [2]Surgery, Hospital de Clinicas de Porto Alegre, Porto Alegre, RS, Brazil; [3]Medicine Student, Hospital de Clinicas de Porto Alegre, Porto Alegre, RS, Brazil.*

To transplant an organ it is necessary to preserve the graft during the period of cold ischemia. The current preservation solutions are not able to oxygenate the tissue, which inevitably causes cell damage.
We intend to associate non-inflammatory, vessel dilating and non-oxidative substances to the preservation solution to try to improve the quality of the liver preservation during the cold ischemia.
We did the donor's hepatectomy in 36 Wistar mice divided in 3 groups of 12 mice. The animals' livers were perfused and preserved for 36 hours. In group 1, the control group, the solution of the University of Wisconsin (UW) was used. In group 2, the UW was used together with prostaglandin 1 (0,5mcg/ml) and in group 3 UW was used together with N-acetylcysteine (0,3mg/ml). Hepatic biopsies were made and samples of the preservation solution were collected in the preservation periods of 12, 24 and 36 hours.
The biochemical study of the preservation solution showed that the levels of transaminases increase as time goes by, but it occurred less when UW was added to N-acetylcysteine. The hystopathological analysis of the biopsies showed a smaller portal inflammatory injury when UW was added to prostaglandin E1.
Therefore, we understand that prostaglandin E1, which is considered a powerful non-inflammatory and vessel dilator, and N-acetylcysteine, which is an excellent non-oxidative substance, have a protective effect on the liver graft when associated with the preservation solution.

Abstract# 283 Poster Board #-Session: P85-II

LDLT FOR THE PATIENT WITH ACUTE HEPTIC FAILURE DURING CHEMOTHERAPY FOR HODGKINS DISEASE. Yoonjin Hwang, Jaemin Chun, Yangil Kim. *[1]surgery, Kyungpook National University Hospital, Daegu, Korea.*

Introduction) It was reported that OLT could be performed in the patients with preexisting malignancy provided that the malignancy was amenable to curative treatment before or at OLT. We report here a case of living donor liver transplantation(LDLT) for the patient with acute hepatic failure during chemotherapy for Hodgkin disease.
Case report) A 38-year-old male, hepatitis B carrier, was referred to our hospital in October 2004 for further evaluation of palpable mass on the right side of neck. The neck computerized tomography showed enlarged multiple lymph nodes along the right jugular chain and posterior cervical chain. Incisional biopsy demonstrated Hodgkin disease, mixed cellularity and he was staged as Hodgkin disease IB. He was given 3-cycles of adriamycin, bleomycin, vinblastin, and dacarbazine chemotherapy. During the 4th cycle, he complained of RUQ pain, and jaundice was developed. He was diagnosed as acute exacerbation on chronic hepatitis B and his clinical symptoms were gradually worsened. Two days prior to LDLT, he became confused and disoriented, and laboratory studies revealed an serum total bilirubin of 50.56mg/dL,creatinine of 3.21mg/dL ammonia of 148μmol/L and international normalized ratio was high at 4.83. He had a MELD score of 40. Whole body FDG-PET scans did not show increased uptake of FDG. We performed LDLT using extended right hemiliver graft on May 18th, 2005 and he is currently well and free of disease, 18 months after LDLT.
Conclusions) LDLT can be performed successfully in the selected patients with preexisting extrahepatic malignancies. Further evaluation is needed to define the inclusion criteria for LDLT in such patients.

Abstract# 284 Poster Board #-Session: P86-II

LIVER TRANSPLANTATION ON A DOWN´S SYNDROME SUBJECT. Eduardo Fernandes[1], Rodrigo Martinez[1], Ana Claudia Rozenfeld[1], Cesar Wakoff[1], Samanta Basto[1], Henrique Sergio Coelho[1], Joaquim Ribeiro-Filho[1]. *[1]Departamento de Cirurgia, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil.*

Down´s syndrome is worldwide a genetic disease causing major target organs disfunction, specially regarding blood related and cardiac diseases, many of them with clear transplantation indications. There are many concerns on the literature about ethical and technical aspects of transplantating these subjects, and almost all the reports are centered on cardiac and blood marrow transplants. Here we report the first case of liver transplantation on a Downs´s syndrome subject reported so far. On this report, a 34 years old female subject with C-hepatitis and liver disfunction was submited to orthotopic liver transplantation with no complications and short instay period. Our result shoud reinforce the view proposed by others that these patients should be transplanted and have an equal priority on waiting lists.

Abstract# 285 Poster Board #-Session: P87-II

LIVER RE-TRANSPLANTATION IN CHILDREN: A SINGLE CENTER EXPERIENCE. V. Corno[1], M. C. Dezza[1], A. Lucianetti[1], D. Codazzi[1], D. Pinelli[1], G. Maldini[1], M. Zambelli[1], M. Guizzetti[1], M. L. Melzi[1], G. Torre[1], M. Colledan[1]. *[1]Liver-Lung Transplantation Center, Ospedali Riuniti, Bergamo, Italy.*

Introduction: Liver re-transplantation (re-OLTx) is the treatment of choice for patients who develop irreversible graft failure after liver transplantation.
Methods: From October 1997 to September 2006 we performed 329 pediatric OLTx in 291 children. 256 children received a primary OLTx, 1 child who was previously transplanted at another Center, underwent to re-OLTx at our Center. In 35 children a re-OLTx was performed, in 3 of them a second re-OLTx was required. Indication for re-OLTx were hepatic artery thrombosis (HAT) 14 (40%), primary non function (PNF) 8 (23%), chronic rejection 7 (20%), portal vein thrombosis (PVT) 3 (8,5%) and HAT+PVT 3 (8,5%). We analyzed several factors that could have an impact on patient survival: primary vs re-OLTx, age > or < 1 year, recipient's weight < or > 6 kg, interval between primary OLTx and re-OLTX < 7 days, between 8 and 30 days or > 30 days; bilirubin > or < 13 mg/dl; creatinine > or < 1,3 mg/dl, INR > or > 1,8; type of graft whole vs split, ischemia time > or < 7 hours. **Results:** Overall, 1,3 and 5 years patient survival after primary OLTx was 92%, 90% and 88% whereas after re-OLTx was 59%, 59% and 53% (p = 0,001). No statistically significant differences were found in term of 1,3 and 5 years patient survival between the groups of age > or < 1 year, weight > or < 6 Kg, bilirubin > or < 13 mg/dl, INR > or < 1,8 and ischemia > or < 7 hours. Patient survival using a whole graft was 83% at 1, 3 and 5 years, whereas with a split graft was 49%, 49% and 42 % respectively (p = n.s.). In the group of children with creatinine < 1,3 mg/dl patient survival was 66% at 1 and 3 years and 57% at 5 years; in the group with creatinine > 1,3 mg/dl patient survival was 38% at 1,3 and 5 years (p = n.s.).Considering the interval between OLTx and re-OLTx, with an interval < 7 days patient survival was 42% at 1, 3 and 5 years; with an interval between 8 and 30 days 1,3 and 5 years patient survival was 73%, 73% and 49% respectively; with an interval > 30 days patient survival was 66% at 1,3 and 5 years (p=n.s.). **Conclusion:** Survival after pediatric liver re-OLTx is worse compared to survival after primary OLTx. Probably due to the sample size, none between the analyzed factors was found to be a strong predictor of survival after pediatric re-OLTx. We strongly advise a multicenter study to have a larger sample size to verify these results.

Abstract# 286 Poster Board #-Session: P88-II

ANALYSIS OF THE CC CHEMOKINE RECEPTOR 5Δ32 POLYMORPHISM IN PEDIATRIC LIVER TRANSPLANT RECIPIENTS. Louise Fischer-Maas[1], Reinhard Schneppenheim[2], Florian Oyen[2], Enke F. Grabhorn[1], Martin Burdelski[1], Rainer Ganschow[1]. *[1]Department of Pediatrics, Pediatric Hepatology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; [2]Department of Pediatric Hematology and Oncology, University Medical Center Hamburg-Eppendorf, Hamburg, Germany.*

Chronic graft rejection and damage of the biliary tree resulting in graft dysfunction is one of the major cause for re-transplantation following pediatric liver transplantation (OLT). Unknown immunological factors may contribute among others to this otherwise non-predictable phenomenon. It has been published in adult liver recipients that patients with CCR5Δ32 polymorphism are of higher risk to develop ischemic type biliary lesions (ITBL). It has been further shown that CCR5 blocking monoclonal antibodies prolong allograft survival in an acute heterotopic heart, lung, and kidney transplant models.

The aim of our present study was to assess if CCR5Δ32 polymorphisms have an impact on acute or chronic graft dysfunction in pediatric liver transplant recipients.

We analyzed a total of 147 pediatric liver transplant recipients at least two years following OLT. The incidence of acute graft rejection was 38.4%, whereas 20.9% of the rejection epsisodes were steroid-resistant. Chronic graft dysfunction occurred in 7.0% of the patients. There was no correlation between acute or chronic graft dysfunction and CCR5Δ32 polymorphism.

We conclude that in contrast to adults CCR5Δ32 polymorphisms appear to be not of diagnostic value to predict graft dysfunction in pediatric liver transplantation.

Abstract# 287 Poster Board #-Session: P89-II

SPLIT-LIVER TRANSPLANTATION IN A CHILD WITH LIVER FAILURE BASED ON CHRONIC GRAFT-VERSUS-HOST DISEASE AFTER ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION FROM THE SAME DONOR. Cornelia Englert[1], Martin Burdelski[1], Matthias Beckmann[1], Gritta Janka-Schaub[2], Rainer Ganschow[1]. *[1]Pediatric Hepatology, Pediatrics, Hamburg, Germany; [2]Pediatric Hematology and Oncology, Pediatrics, Hamburg, Germany.*

We report a case of a 6-year-old boy who developed chronic graft-versus-host-disease (GVHD) of the liver, the intestines and the skin following allogeneic hematopoietic stem cell transplantation.

The boy received allogeneic hematopoietic stem cell transplantation by the age of two years because of early recurrence of acute lypmphoblastic leukemia. The chimerism analysis showed complete chimerism. In the following year he developed GVHD despite adequate immunosuppressive therapy. Liver biopsy showed liver-GVHD resulting in liver cirrhosis by the age of five years.

Liver transplantation was performed with a split liver segment from the same unrelated donor as of the stem cells. Immunosuppressive therapy consisted of low dose steroids and low dose cyclosporine. The postoperative course was uneventful. Graft function was excellent and we performed protocol biopsies seven days and three weeks after transplantation which did not show any signs of rejection or GVHD.

To our knowledge this is the first report on a liver transplantation following allogeneic hematopoietic stem cell transplantation from the same unrelated donor.

In the latest liver biopsy three months after liver transplantation slight signs of GVHD could not be ruled out completely so that the low dose cyclosporine therapy is still continued.

Further biopsies will show if the immunosuppressive therapy can be discontinued.

Abstract# 288 Poster Board #-Session: P90-II

A PORTAL VEIN ARTERIALIZATION. AN UNUSUAL AND NON ANATOMICAL RECONSTRUCTION. A CASE REPORT. Alexandre Cerqueira, Marcelo Enne, Pacheco Lucio, Rodrigo Amil, Jefferson Alves, Guiseppe Santalucia, José Manoel Martinho. *[1]Transplant Unit, Bonsucesso General Hospital, Rio de Janeiro, Brazil.*

A 2 years-old boy (11Kg), had undergone elective liver transplantation for Biliary Atresia 8 days ago, with left lateral segment from a living donor. During the surgery the portal vein was atresic with 4mm but was not thrombosed and was used near the splenomesenteric junction for revascularization with good inflow. Before the biliary anstomosis as routine US Doppler showed no blood flow into the portal vein and normal arterial flow.

The anastomosis was remade with a portal flow about 16 cm/s at the Doppler evaluation. After the biliary anastomosis a new Doppler evaluation showed again no blood flow. After that, a cadaveric iliac vein graft was used between the superior mesenteric vein and the donor portal vein. The initial Doppler showed a flow about 19 cm/s, but after 20 minutes a new Doppler showed no portal vein flow again. As a last resource the patient was heparinized and a portal vein arterialization was done by interposing a segment of cadaveric iliac artery between the recipient aorta and portal vein. At this moment he is awake with good mental status, and ASAT and ALAT at 15 and 18, but with 15.000 platelets Albumin 2,1 INR 2,1. EDA showed no varices.

Abstract# 289 Poster Board #-Session: P91-II

SALVAGE OF HEPATIC ARTERY OCCLUSIONS IN ADULT TO ADULT LIVING DONOR LIVER TRANSPLANTATION USING GASTRIC VESSELS. Tsan-Shiun Lin, Shridhar G. Iyer, Chih-Chi Wang, Yuan-Cheng Chiang, Shih-Ho Wang, Yueh-Wei Liu, Chin-Hsiang Yang, Chee-Chien Yong, Allen M. Concejero, Chao-Long Chen. *[1]Liver Transplantation Program, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Kaohsiung, Taiwan.*

Background: Alternatives to hepatic artery are needed in liver transplantation when the native recipient artery cannot be used. We describe the indications, technique and the long term results of our experience with use of right gastroepiploeic (RGEA) and left gastric artery (LGA) as alternative hepatic artery inflow in adult to adult living donor liver transplantation (LDLT).

Methods: From January 2000 to June 2006, 131 patients underwent adult to adult LDLT at the Chang Gung Memorial Hospital. Seven patients required salvage of the graft due to hepatic arterial complication, with a hepatic artery alternative. The demographic characteristics, the arterial complication, the salvage strategy were studied.

Results: All patients had right lobe liver grafts. 4 patients required intraoperative salvage due to intimal dissection of the recipient vessel and 3 patients had salvage at a reopearation. RGEA was used in 5 patients and LGA in two patients. 4 patients had no further complication on long term follow up. One patient had biliary stricture requiring intervention; two patients had bile leaks one of which resolved spontaneously without sequelae. One patient, with two graft arteries had graft loss due to bile leak, sepsis following re-operation for hepatic artery occlusion.

Conclusion: this report shows that the RGEA and LGA can be successfully used for hepatic arterial revascularization with good long term results in LDLT. The method has minimal added morbidity to the recipient and has advantage of single anastomosis.

Abstract# 290 Poster Board #-Session: P92-II

CHARACTERIZATION OF THE "SMALL-FOR-SIZE" SYNDROME IN AN EXPERIMENTAL MODEL OF HEPATIC TRANSPLANT. Constantino Fondevila, Amelia Hessheimer, David Calatayud, Carlos Florez, Santiago Servin, Esther Mans, Jose M. Romero, Cesar Ginesta, Alberto Martinez, Pilar Taura, Juan C. Garcia-Valdecasas. *[1]Surgery, Hospital Clinic, University of Barcelona, Barcelona, Spain.*

[Introduction. The "small-for-size" (SFS) syndrome, which may occur after extensive hepatectomy or partial liver transplant, consists in cholestasis, coagulopathy, and aspartate aminotransferase (AST) elevation. Our aim was to produce a porcine model of SFS liver transplant and measure the hemodynamic alterations leading to the appearance of the syndrome.

Materials and Methods. Thirty four male pigs were used: 17 donors weighing 15-20 kg and 17 recipients weighing 30-35 kg. Seventy percent partial hepatectomy was performed in the donors, followed by cold perfusion and liver harvest. Grafts were implanted in the recipients using our group's standard technique, in which the anhepatic phase was kept less than 20 min in order to avoid having to use venovenous bypass. Hemodynamic parameters were measured and hepatic tissue sampled intraoperatively and at euthanasia, and blood was sampled regularly during five days of follow-up.
Results. The average graft weight was 195±42 g, which represented 22±3 % of the standard liver volume and 0.58±0.15 % of total the body weight of the recipients. Median recipient survival was 48±12 h. The pigs were divided into three groups based on survival: (I) death by 24 h (n=6), (II) death 24-50 h (n=6), and (III) survivors (n=5). There were no significant differences in cold ischemic times among the groups (302±44, 326±31, and 336±35 min respectively). Upon reperfusion, the average portal flow and portal resistance were higher in group II compared with group III (resistance 1707 vs 875, p=0.01). Postoperatively, serum bilirubin measurements (3.1 vs 2.4 mg/dL at 24 h, 2.2 vs 4.8 mg/dL at 48 h, $p<0.05$) and AST (2231 vs 916 U/L at 48 h, $p<0.05$) were significantly higher and prothrombin time significantly lower (26 vs 69% at 48 h, p=0.01) in group II with respect to the survivors. Histological evaluation revealed focal endothelial damage accompanied by prominent sinusoidal congestion and parenchymal hemorrhage. The grade of the lesion correlated with the degree of portal hyperperfusion and was more notable in group 2.
Conclusions. Excessive portal venous flow and resistance are key factors that lead to the development of the SFS syndrome and accurately predict the early postoperative outcome and survival in this porcine model of SFS transplant.

Abstract# 291 Poster Board #-Session: P93-II

COMPUTED TOMOGRAPHY (CT) AND INTRAOPERATIVE FLOW MEASUREMENTS (IFM) IN THE MANAGEMENT OF PORTOSYSTEMIC SHUNTS (PS) DURING LIVER TRANSPLANTATION (LTX). F. Aucejo[1], S. Nakagawa[1], K. Hashimoto[1], K. Hirose[1], C. Quintini[1], D. Kelly[1], B. Eghtesad[1], J. Fung[1], C. Miller[1]. *[1]General Surgery, Cleveland Clinic, Cleveland, OH, USA.*
Background: PS formation is common but often underappreciated. If large and unrecognized these PSs can jeopardize portal vein (PV) flow via a steal phenomenon. PS utilization as graft inflow or ligation are recommended. We report our experience with patients undergoing LTX with large PS, and describe the importance of CT and IFM in mangement.
Methods: From 1/1/06 to 11/30/06, 108 adults underwent cadaveric LTX. All patients had CT scans during evaluation. 6 of 108 had large PS shunts; 2/6 had concomitant PV thrombosis. 5/6 were spleno-renal shunts (SRS) 4 of which were spontaneous; 1 PS was from the inferior mesenteric vein to the IVC. Etiology of liver disease was hepatitis C (n=2), alcoholic cirrhosis (n=2), primary biliary cirrhosis (n=1), and nonalcoholic steatohepatitis (n=1). All 6 patients had severe encephalopathy and absence of ascites due to the large PS. IFM of the PV were recorded using transit time ultrasound flowmeter (MediStim VeriQ system, Oslo, Norway, and HT207, Transonic Systems Inc.,NY).
Results: 5/6 patients underwent inflow modification during LTX to assure PV flow rates > 1000 cc/min. These included 3 PS ligation and 2 reno-portal bypasses. 1 of these 5 patients (#3) developed a post-operative PV thrombosis (PVT) successfully treated with thrombectomy and PV replacement. One patient (#6) without primary inflow modification developed PVT on POD 7 which was salvaged with PV thrombectomy and shunt ligation.
Conclusions: Large PS shunts are associated with PV flow impairment and PV thrombosis. CT scan is excellent for characterization of these shunts. PV flows should be >1000 cc/min. To assure good flow, hemodynamically significant shunts should be ligated or used as primary inflow in cases of PVT.

Results

	Venous Inflow cc/min	Venous Inflow Modification	Post Modification Flow cc/min	Outcome
Patient#1	1543	Left renal vein to PV	1543	Alive. Patent Graft Inflow
Patient#2	1200	Left renal vein to PV	1200	Alive. Patent Graft Inflow
Patient#3	1000	IMV ligation	2000	Alive. Patent Graft Inflow
Patient#4	750	SRS ligation	1100	Alive. Patent Graft Inflow
Patient#5	800	SRS ligation	1500	Alive. Patent Graft Inflow
Patient#6	720	#1 none #2 SRS ligation	1200	Alive. Patent Graft Inflow

Abstract# 292 Poster Board #-Session: P94-II

ARTERIAL RECONSTRUCTION IN LIVING DONOR LIVER TRANSPLANTATION: ANALYSIS OF 100 CONSECUTIVE CASES WITH 1 ARTERIAL THROMBOSIS. Deniz Balci[1], Burcin C. Taner[1], Izzet Memi[1], Murat Dayangac[1], Baris Akin[1], Zahide Kurt[1], Cihan Duran[2], Huseyin Sen[3], Sanjay S. Negi[1], Omer H. Ayanoglu[3], Yildiray Yuzer[1], Refik Killi[2], Yaman Tokat[1], Levent Yalcin[1]. *[1]General Surgery and Organ Transplantation, Istanbul Science University, Istanbul, Turkey; [2]Radiology, Istanbul Science University, Istanbul, Turkey; [3]Anesthesiology, Istanbul Science University, Istanbul, Turkey.*
Arterial reconstruction in liver transplantation is one of the most important steps that failure would result in a considerable patient morbidity and mortality. Here, we report our experience with hepatic artery reconstruction in living donor liver transplantation (LDLT).
Between July 2004–December 2006 100 consecutive LDLTs (68 male, 32 female) with median age 50 (range 14-72) performed at our institution. There were 88 right lobe, 11 left lobe, and 1 dual left lobe grafts. All anastomoses were performed by a single experienced microsurgeon under operating microscope with 8-0 nylon sutures and were evaluated intraoperatively with Doppler ultrasonography (DUSG) by a single experienced radiologist. Anastomoses were evaluated with resistive index, acceleration time and pre/post anastomotic peak systolic velocity. If the results of these criteria with DUSG were not in the normal range a reanastomosis was performed. Follow-up protocol involved control DUSG at days 1, 3, 7, 30 and then according to clinical and laboratory progress.
There were 105 reconstructions including 1 dual left lobe transplantation with 3 arterial reconstructions and 3 patients with double arterial reconstructions. The reconstructions were 82 RHA-RHA (78%), 11 RHA-LHA (10.5%), 9 LHA-LHA (8.6%), 3 LHA-RHA (2.9%) in donor artery to recipient artery, respectively. The median operation time was 26 minutes (range 15-65 mins.). There were 8 cases in which reanastomoses were performed after unsatisfactory intraoperative DUSG evaluation. There was only one case that developed hepatic artery thrombosis on day 21 in a patient with Protein C deficiency despite anticoagulation.
Successful hepatic artery reconstructions can be performed safely in LDLT by an experienced surgeon under operative microscopy. Combining the experience of the surgeon with intraoperative correction of the clinical or radiologically unsatisfactory anastomosis yields excellent arterial patency rates.

Abstract# 293 Poster Board #-Session: P95-II

INCIDENCE AND RISK FACTORS ASSOCIATED WITH EARLY HEPATIC ARTERY THROMBOSIS IN PATIENTS UNDERGOING ORTHOTOPIC LIVER TRANSPLANTATION: A MULTIVARIABLE ANALYSIS. Giuseppe Fusai[1], Parveen Dhaliwal[1], Caroline A. Sabin[2], Nancy Rolando[1], David Patch[1], Keith Rolles[1], Andrew K. Burroughs[1], Brian R. Davidson[1]. *[1]Liver Transplantation & Hepatobiliary Unit, Royal Free Hospital, London, United Kingdom; [2]Primary Care & Population Sciences, Royal Free Hospital & University College Medical School, London, United Kingdom.*
Hepatic artery thrombosis (HAT) is a dramatic complication which is reported in up to 10% of patients undergoing orthotopic liver transplantation (OLT). The consequences are dramatic and inevitably cause graft loss. Knowledge and correction of the predisposing factors might reduce the incidence of early HAT.
The database included 914 consecutive patients undergoing OLT between 1988 and 2005 in a single institution. Early HAT was diagnosed if occurred within the first 30 days postoperatively. Donor and recipient arterial anatomy and the number of arterial anastomoses were documented. Grafts were reperfused after portal vein anastomosis was completed and before arterial anastomosis was performed. Aetiology of liver disease, graft number, donor and recipient blood group, CMV status, intraoperative use of blood products, cold ischaemia and reperfusion time (measured as the time elapsed between reperfusion and completion of arterial anastomosis) were also recorded.
The incidence of early HAT was 4.6%. Graft number, abnormal arterial anatomy, number of arterial anastomoses, arterial bench work, reperfusion time and number of units of blood received intraoperatively were significantly associated with early HAT in univariate analysis ($p<0.05$). These variables were included in a multiple regression model which suggested that the need for bench arterial reconstruction is associated with a 4-fold risk of early HAT [$p<0.0001$, Risk Hazard 3.55 (95% CI 1.89-6.66)], whereas each additional

10 minutes of reperfusion (until completion of arterial anastomosis) correlates with a 27% increase in the risk of early HAT [p<0.04, Risk Hazard 1.27 (95% CI 1.02-1.60).
Early HAT is primarily associated with surgical risk factors. Selective anticoagulation and strict surveillance protocols with arterial Doppler for patients at risk might be beneficial.

Abstract# 294 Poster Board #-Session: P96-II

THREE CASES OF LIVING DONOR LIVER TRANSPLANTATION IN PATIENTS WITH BUDD-CHIARI SYNDROME. Gyu-seong Choi[1], Jae Berm Park[1], Doo Jin Kim[1], Choon Hyuck David Kwon[1], Sung Joo Kim[1], Suk-Koo Lee[1], Jae-Won Joh[1], Yun Mi Lee[1], Bok Nyeo Kim[1]. *[1]Department of Surgery, Samsung Medical Center, Sunkyunkwan University, Seoul, Korea.*

Budd-Chiari syndrome(BCS) is a rare disease and the therapeutic strategies depend on the fuctional status of liver. Liver transplantations can be considered in case of hepatic failure or malignancy. Recently 3 cases of living donor liver transplantation(LDLT) in patients with BCS were done in our center and the different surgical techniques were applied focusing on the venous drainage. (Case 1) 40-year-old female patient with HCC were peformed with LDLT for curative surgery. In operative field, hypertrophied caudate lobe and well-developed azygous vein were found. Retrohepatic IVC was obliterated about 2.5cm length at near the orifice of hepatic vein. Obliterated IVC segment was resected and interposed with cryopreserved IVC graft. Right liver from the donor was anastomed. Right hepatic vein was drained to interposed IVC graft. She discharged at post operative 21st day with no problem.
(Casa2) 45-year-old male patient suffered hematemesis due to liver cirrhosis and LDLT was performed. The Liver was cirrhotic but not shrunken. The IVC was patent but hepatic vein was obstructed partially with web-like membrane. The liver was removed including obstructed right hepatic vein. Right liver from donor was anastomosed to recipient. Right hepatic vein was anastomosed to orifice of original right hepatic vein as end-to-end fashion.
(Case3) 50-year-old male patient had a HCC in S7. Eight years ago, he was diagnosed to BCS and liver cirrhosis and then mesoatrial shunt from superior mesenteric artery to atrium was performed with PTFE graft as a portosystemic shunt due to variceal bleeding. In operative field, the IVC about 15 cm were totally obstructed with calcified thrombus from below atrium to above renal vein. Azogous veins and other collateral vessels were well developed. Cirrhotic liver and retrohepatic IVC were removed. Right liver from donor was anastomosed to recipient. PTFE graft of mesoatrial shunt was cut at near site of superior mesenteric vein and right hepatic vein of donor site was anastomosed to the PTFE graft of mesoatrial shunt.
(Conclusion) LDLT for BCS could be accepted as a safe therapeutic modality. Various surgical technique could be applied by the site of venous obstrucion.

Abstract# 295 Poster Board #-Session: P97-II

IMPACT OF ISCHEMIC PRECONDITIONING IN GRAFT FUNCTION AND INFLAMMATORY MEDIATORS IN ORTHOTOPIC LIVER TRANSPLANTATION. H. Zapata[1], L. Munoz[1], P. Cordero[1], M. Escobedo[1], B. Garduno[1], E. Perez[1], M. Hernandez[1], L. Torres[1], M. Cepeda[1], M. De Luna[1], A. Mercado[1], B. Garza[1], I. De Osio[1], E. Caballero[1], M. Rios[1], J. Rosello[2]. *[1]Coordinacion de Trasplantes, Unidad de Hígado, Depto de Anestesias, Depto de Patologia, Hospital Universitario UANL, Monterrey, Mexico; [2]Depto de Patologia Experimental, IIBB, Barcelona, Spain.*

Ishemic preconditioning (IP) has been proposed to improve initial graft function in OLT. Aim was to determine if IP in OLT improves graft function and to study inflammatory mediators (IM) implicated in ischemic-reperfusion (IR) injury as well as the liver biopsies before procurement and post-reperfusion (PR). **Material and Methods** 6 without IP (woIP), and 5 with IP (wIP) 7 males, mean age was 45.1 years. Child-Pugh B(5, 45.5%) and C(6, 54.5%) MELD 19.2. IP was performed for 10 minutes followed by 10 min reperfusion before procurement. IM: myelperoxidase (MPO), p-selectin (PS), leucotrien B4 (LTB4), ICAM were measured in 6 patients (3 woIP, 3 wIP) in basal and PR phases and liver biopsies in eleven patients. **Results** Two patients died (both woIP) one of a ruptured pseudoaneurism of hepatic artery 10 days post-OLT and one had a cardiac arrest 5 min PR of which he recovered, but died 24 hs after. No cases of primary non function graft were seen. Only one patient in the wIP presented transient graft disfunction (AST 3391 IU/mL) 24 hs postop. and diminished to 443 IU/mL at 72 hs. IM in patients are shown in the table. Only one liver biopsy in the IP group showed 50% steatosis before procurement. Liver biopsies in patients woIP exhibited more often cytoplasmic vacuoles, severe necrosis and focal nuclear picnosis. All 6 patients wIP showed neutrophil infiltration (grade 1-3), as opposed to 3/5 in patients woIP (grade 1-2) in the liver biopsy PR. **Conclusions** Only one patient wIP presented transient graft disfunction. Liver biopsies exhibited cytoplasmic vacuoles, severe necrosis and nuclear picnosis more often in the group woIP, on the other hand, neutrophil infiltration was more common in liver biopsies wIP. However, effects of IP in IM were: prevent important MPO and PS elevation; and a decrease of ICAM, these effects may help to diminish IR graft injury. A larger population should be included before drawing definite conclusions on IP effects in OLT.

MPO ng/mL		LTB4 pg/mL		ICAM ng/mL		p-selectin ng/mL	
woIP	wIP	woIP	wIP	woIP	wIP	woIP	wIP
Basal/ 1.3	9.5	6.1	6.1	56.3	112.7	12.2	11.5
PR/ 11.8	17.8	6.0	5.8	78.0	85.6	16.1	10.1

Abstract# 296 Poster Board #-Session: P99-II

INTRA OPERATIVE HEMODYNAMIC ALTERATIONS IN THE PIGGYBACK LIVER TRANSPLANTATION. Marilia I. Leonardi[1], Adilson R. Cardoso[2], Cristina Caruy[2], Ilka F. Boin[1], Luiz S. Leonardi[1]. *[1]Surgery, State University of Campinas Medical School, Campinas, SP, Brazil; [2]Anesthesiology, State University of Campinas Medical School, Campinas, SP, Brazil.*

The study aims to evaluate the intra operative hemodynamics of patients submitted to orthotopic liver transplantation (OLT) with inferior vena cava (IVC) preservation, with different types of caval reconstruction applied.
Patients and Methods: A total of 238 patients were included in the study. The mean age of patients was 43.2 years and 67% of patients were transplanted due to viral hepatitis. Patients were grouped according to the type of IVC reconstruction:
- group PB3 (117 patients): piggyback technnique with end-to-end anastomosis including recipient 3 hepatic veins;
- group PB2 (101 patients): piggyback technique with end-to-end anastomosis including the recipient central and left hepatic veins;
- group PBL (20 patients): piggyback technique with cavoplasty with side-by-side or end-by-side anastomosis. Temporary partial ou total IVC clamping was necessary in every patient in the PBL group during caval reconstruction.
On the other hand, transient IVC clamping was required selectively in groups PB3 and PB2. Hemodynamic measures were MAP (mean arterial pressure), PAMP (pulmonary artery mean pressure), PCP (pulmonary capilar pressure), CVP (central venous pressure) and CO (cardiac output). Records were obtained at set times: t1 (beginning of laparotomy); t2 (anepatic phase); t3 (5 minutes after reperfusion); t4 (15 minutes after reperfusion); t5 (end of surgical procedure). Results are expressed as mean values. Groups were compared by the unifactorial variance analysis with LSD. Level of statistical significance was p<0.05. **Results: MAP:** MAP was markedly lower in group PB2 at t4 (p< 0.001) and at t5 (p=0.02). **PAMP:** Group PB2 and PB3 showed higher values of PAMP at t2 (p=0.025). However at t3 to t5, PAMP values were considerably higher in group PBL (p=0.008). **PCP, CVP and CO:** There were no differences among groups.
Discussion: The MAP curves demonstrate that hemodynamic stability could be garanteed in every group throughout the procedure. The elevatiuon of PAMP after reperfusion in group PBL might be understood as a consequence of the action of vasoactive substances in pulmonary microcirculation. The lower values of CO in group PBL, despite no statistical difference was established, reflects IVC clamping. The ability of cirrhotic patients to deal with fluid overload is translated as the maintenance of PCP and CVP values.

Abstract# 297 Poster Board #-Session: P100-II

BACK-TABLE RECONSTRUCTION OF REPLACED RIGHT HEPATIC ARTERY IN WHOLE LIVER TRANSPLANTATION: RETROSPECTIVE COMPARATIVE STUDY AND OUTCOME IN 75 CASES. Belhassen Seket[1], Mustapha Adham[1], Amr Abdelaal[1], Philippe Vanhems[2], Olivier Boillot[1]. *[1]Liver Transplant Unit, Department of surgery, Pavillon D3, Hôpital Edouard Herriot, Lyon, France; [2]Department of Epidemiology and Hygiene, Hôpital Edouard Herriot, Lyon, France.*

Aim of the study: We describe our method of back-table reconstruction of replaced right hepatic artery and we report the results in 75 cases compared to patients transplanted with grafts that did not require arterial reconstruction. **Patients and methods:** A total of 612 whole liver transplants were studied retrospectively. Patients' data were reviewed for the presence of arterial reconstruction and postoperative complications (early mortality, arterial and biliary complications and graft loss). Two groups of whole liver grafts were examined: a first group (group 1) concerned grafts that did not require reconstruction prior to transplantation (n = 525) and a second group corresponding to grafts with arterial variations requiring back-table reconstruction. A replaced right hepatic artery arising from the superior mesenteric artery was the anomaly most frequently requiring reconstruction. Our preferred method of reconstruction of this arterial variation was by using the gastroduodenal artery stump which was performed in 75 cases (group 2). **Results:** The analysis of the data concerning the postoperative course showed no significant difference in the early mortality (8.1% in group 1 versus 8% in group 2) and in the incidence of the whole arterial complications (3.6% in group 1 versus 6.6% in group 2, $p = 0.16$). Hepatic arterial thrombosis occurred in two cases in the group 2 (2.6%) and in four cases in group 1 (0.7%, p = 0.16). There was no significant statistical difference in terms of whole and ischemic biliary complications and retransplantation rates. Finally, the study of the graft survival curves within 3 months and within the whole follow-up period after liver transplantation revealed also no significant difference between the two groups. **Conclusion:** The arterial complications and the risk of graft loss were not enhanced by the back-table procedure of reconstruction of replaced right hepatic arteries using the gastroduodenal artery stump. It proved to be is a safe and physiologic technique. Hepatic artery thrombosis was very low in our two groups especially in the group 1 (0.7%). This low rate is due the competence achieved by our team especially in the field of partial and paediatric liver transplantations.

Abstract# 298 Poster Board #-Session: P101-II

INTERPOSITION OF SUPERIOR MESENTERIC ARTERY GRAFT ALLOWS SAFE SIMULTANEOUS ARTERIAL AND PORTAL REVASCULARIZATION IN RIGHT-SIDED SPLIT-LIVER TRANSPLANTATION. Paulo C. B. Massarollo[1], Rafael A. A. Pécora[1], Alcides Salzedas-Netto[1], Carlos E. S. Baía[3], Margareth P. Lallée[3], Olival Lucena[2], Paulo S. V. Melo[2], Claúdio M. Lacerda[2], Sérgio Mies[3]. *[1]Liver Transplant Service, Santa Casa de São Paulo, São Paulo, Brazil; [2]Hospital Universitário Oswaldo Cruz, Universidade Estadual de Pernambuco, Recife, Brazil; [3]Liver Unit, Hospital Israelita Albert Einstein, São Paulo, Brazil.*

BACKGROUND. In Brazil, split liver transplantation (SLT) is usually carried out *ex-situ* for logistical reasons. This technique may be associated with significant blood loss after graft reperfusion. In these settings, simultaneous arterial and portal revascularization (SAPR) has some potential advantages: 1) the arterial anastomosis is performed under better technical conditions, in a surgical field without hemorrhage, before graft reperfusion; 2) hemostasis of the hepatic cut-surface may be performed more carefully when there is no subsequent vessels to be reconstructed; 3) in case of hemodynamic instability, the dual blood supply may reduce graft ischemic damage. Most Brazilian transplant centers performing SLT maintain the celiac trunk in continuity with the left graft. Thus, the applicability of SAPR for the right-sided graft is limited by the shorter and smaller arteries for arterial reconstruction which implies prolongation of the implantation time and risk of excessive warm ischemia. AIM. To assess the effectiveness of the superior mesenteric artery interpositional graft in providing SAPR in right-sided SLT. METHODS. Cadaveric superior mesenteric artery was used to reconstruct 6 right-sided (5 right trisegments and 1 right lobe) *ex-situ* split-liver grafts from 24th January, 2003 to 31st August, 2006. RESULTS. SAPR was used in all but one case. Mean warm ischemia was 59.7 ± 16.5 minutes (range 30-79). Mean blood transfusion requirements was 1.5 ± 1.5 units of packed red blood cells (range 0-4). Hepatic artery thrombosis did not occur in any patient. Five patients are alive with good graft function. One patient died at 5th postoperative day due to pulmonary sepsis. CONCLUSION. The use of superior mesenteric artery interpositional graft allows safe simultaneous arterial and portal revascularization in right-sided *ex-situ* SLT.

Abstract# 299 Poster Board #-Session: P102-II

RISK FACTORS FOR THROMBOSIS OF AORTIC CONDUITS AFTER CADAVERIC LIVER TRANSPLANTATION. Umberto Maggi, Ernesto Melada, Paolo Reggiani, Paolo Bertoli, Giorgio Rossi. *[1]Centro Trapianti Fegato, Fondazione Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena, Milano, Italy.*

AIM

Sometimes, an aortic conduit during liver transplantation (LT) is mandatory due to pre and/or intraoperative reasons.

However, aortic conduits thrombosis (ACT) after liver transplantation is a life threatening complication.

Our aim was to identify donor (age, whole or reduced graft), recipient (age, serum creatinine, bilirubin, AST, ALT, Albumine, International Normalized Ratio -INR -, MELD score, UNOS status, Platelets, previous LT, D/R sex identity or not), and intraoperative (perfusion solution, ischemia time) factors possibly related to early or late thrombosis of aortic conduits.

PATIENTS AND METHODS In recent years, that is since January 1995 through December 2006 366 LT were performed in our Center in 327 adults including 62 LT (17%) with aortic conduits. Various parameters, as stated before, were analyzed with appropriate tests (t-test, chi squared test). P-Value <= .05 was considered statistically significant.

RESULTS

8 grafts (12,9%) in 6 patients underwent an ACT after a mean time of 215 +- 241 days (range 6-612) from LT. 4 of them underwent retransplantation, 2 of them had thrombosis recurrence and patients died ,whereas 2 other grafts are actually well functioning without surgery. So 4 out of those 6 patients are alive. 9 (2,9%) out of 304 grafts without conduits underwent a hepatic artery thrombosis.

2 years graft survival for grafts with ACT is 10% whereas 1, 5, 10 years graft survival for grafts with patent conduits is 81, 74 and 74.

Risk factors that positively related with statistical significance with ACT were higher donor's age, and recipient's high serum albuminemia at transplantation.

CONCLUSION

Early and late ACT is a very serious complication that severely impairs graft outcome after liver transplantation. Aortic conduits during transplantation of older grafts with high value of serum albumine at transplantation have a higher risk of thrombosis and need strict surveillance.

Abstract# 300 Poster Board #-Session: P103-II

FEASIBILITY OF VENA CAVA PRESERVATION DURING LIVER TRANSPLANTATION FOR POLYCYSTIC LIVER DISEASE. Wellington Andraus, Daniele Sommacale, Fédérica Dondéro, Alain Sauvanet, François Durand, Claire Francoz, Olivier Farges, Guido Liddo, Barbara Alkofer, Jacques Belghiti. *[1]HPB Surgery and Liver Transplantation, Beaujon Hospital, Clichy, France.*

Liver Transplantation (LT) for Polycystic Liver disease (PLD) is indicated in case of massive hepatomegaly. Total hepatectomy with caval-preservation during LT for PLD is technically difficult because the liver often surrounds the inferior vena cava (IVC). The increasing use of partial grafts inspired our group to preserve the IVC. We report our experience of LT for PLD with the purpose to preserve the IVC in all cases.

From 1992 to 2006, 20 patients underwent LT for PLD. There were 3 men and 17 women (mean age 51 years). Sixteen patients underwent LT associated with renal transplant. Previous treatments for PLD were performed in eight cases, including cysts fenestration in four and hepatic resection in four. In order to facilitate the IVC approach, the LT procedure included extensive cyst fenestrations and portocaval anastomosis in all cases; in two cases a partial hepatectomy was used for better control of IVC. Full grafts were used in 17 cases and partial grafts in 3, including 2 split grafts and one living donor.

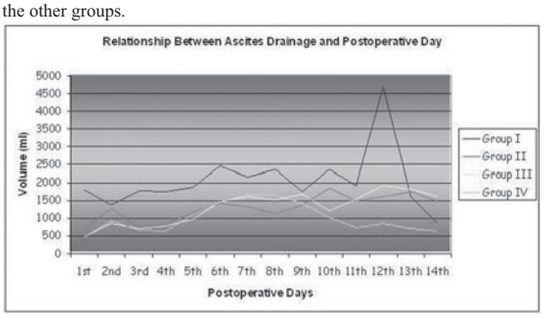
IVC preservation was possible in 18 patients (90%), including the 3 cases of partial graft transplantation. Failure to preserve the IVC occurred in 2 cases, one case of difficult dissection due to a previous liver resection and one case of intraoperative death from massive bleeding due to IVC injury. Total hepatectomy time ranged from 130 min to 420 min with a mean blood loss of 3364 ml and a blood transfusion rate of 8.9 U. Total IVC clamping during hepatectomy was required in 7 cases (35%), including 5 cases with

poor hemodynamic tolerance. Veno-venous bypass was used in four cases: in these patients the IVC preservation was always possible and the IVC clamping was also well tolerated. Total hepatectomy duration and blood loss were significantly higher in patients who had undergone previous liver resection respectively: 327±76.2 min vs 243±55.2 min (P=0.036) and 8000±2743cc vs 1050±1891cc (P=0.013). Postoperative mortality was of 15.8% (3 patients), all from septic complications (pulmonary, colonic perforation and multiorgan failure).
IVC preservation was feasible in 90% of LT for PLD and could be facilitated by veno-venous bypass, extensive cyst fenestrations and partial liver resection. IVC preservation should be expected to be more difficult in case of previous hepatectomy.

Abstract# 301 Poster Board #-Session: P104-II

UNI-VARIABLE ANALYSIS OF ASCITE DRAINAGE AND GRAFT SIZE IN RIGHT LOBE LIVING-DONOR LIVER TRANSPLANTATION. Thomson M. Palma[1], Thiago Beduschi[1], Vinicius M. R. Silva[1], Ana Olga N. G. F. Mies[1], Ana Suely Zan[1], Bianca Della-Guardia[1], Carlos E. S. Baia[1], Eloisa H. Quintela[1], Leonardo R. Ferraz[1], Camila P. Vasconcelos[1], Marcio D. de Almeida[1], Margareth P. Lallee[1], Osvaldo I. Pereira[1], Sergio Mies[1]. *[1]Liver Unit, Albert Einstein Hospital, São Paulo, SP, Brazil.*

Introduction: One of the first factors described to have significant relationship with recipients outcome after living-donor liver transplantation (LDLT) was graft size. From this observation aroused an important parameter that was later called graft to recipient weight ratio (GRWR). This parameter has widely been studied and researches demonstrate that GRWR<0.8% is commonly associated with graft dysfunction. Dysfunction has many clinical manifestations which will depend on severity of onset. Coagulopathy, cholestasis, encephalopathy and ascites are common clinical complications related to the utilization of small grafts and are many times called small-for-size syndrome (SSFS).
Objective: Analyze GRWR and ascites drainage after right lobe living-donor liver transplantation.
Methods: From January, 2002 to December, 2005, 119 patients were submitted to LDLT. They were divided into four groups stratified by their GRWR. Group I: GRWR<0.8%; Group II: GRWR 0.8-1.0%; Group III: GRWR 1.0-1.2% and Group IV> 1.2% and compared with ascites drainage until the 14th postoperative day (PO).
Results: Five (4.2%) patients were classified in group I and had mean ascites drainage of 2,052 ml/day. Group II had 26 (21.8%) patients with mean drainage of 1,291 ml/day. Group III had 37 (31.2%) patients with mean drainage of 1,291 ml/day and group IV had 51 (42.8%) patients with mean ascites drainage of 996 ml/day.
Conclusion: This brief analysis clearly shows that GRWR<0.8% courses with a considerable increase of mean ascites drainage when compared to the other groups.



Abstract# 302 Poster Board #-Session: P105-II

LIVER TRANSPLANTATION WITH INFERIOR VENA CAVA PRESERVATION VERSUS STANDARD TECHNIQUE: RESULTS OF A COHORT PROSPECTIVE STUDY. Marcelo B. Rezende[1], Rogério C. Afonso[1], Hidalgo Renato[1], Meira-Filho P. Sergio[1], Fernando L. Pandullo[1], Luis E. Pinto Fonseca[1], Ben-Hur Ferraz-Neto[1]. *[1]Liver Transplantation Unit, Albert Einstein Jewish Hospital, Sao Paulo, SP, Brazil.*

Background: Liver transplantation with preservation of the recipient vena cava, the piggy-back technique (PT), has been proposed as an alternative to the standard method of liver transplantation (ST) in order to preserve caval flow during the anhepatic phase and avoid the need for a venovenous bypass (VVB).
At our center, we changed our practice in January 2005 from ST of orthotopic liver transplantation without use of VVB to PT as a routine when there was no contra-indication.
The purpose was to analyze a single center's experience with the two different practices, ST without VVB versus PT.
Methods:
From March 2003 to November 2006, 124 consecutive adults liver transplantations were performed in our group. Ten retransplants (8,06%) was exclude. In these 114 primary liver transplants, 30 (26,31%) had ST without VVB (Group I) and in 84 (73,68%) we use a PT (Group II). The etiology of liver disease, Child-Pugh and MELD score, age, sex, renal function and percentage of patients with previous upper abdominal surgery were similar between the two groups.
Results:
The hepatecomy time was 116,10 min and 133,83 min for group I and II, respectively. The average operative time was 357,77 min group I and 387,67 min for group II. There was no significant difference between the two groups in terms of cold ischemic time (547,97 min and 577,23 min for group I and II, respectively and warm ischemic time (59,9 min with the ST vs 58,5 min with the PT). Red blood cell units transfused was also similar, with a mean of 2 units in group I (range 0-13) and 2,5 units in group II (range 0-44). Median post-operative stays in the intensive care unit and in the hospital were 4 and 12 days, respectively, for group I and 3 and 13 days, respectively, for group II. The mean serum creatinine in the first seven days pos-operative was similar in the two groups (1,71 mg/dl group I and 1,64 mg/dl group II). The maximum AST in patients undergoing to ST was 2302,50 (range 227-12667) and 2128 (range 225-18808) in PT group. The one year patient survival rates were 75,86 %, respectively, for group I, and 77,27 % for group II.
Conclusions:
The results of this study show that both techniques are comparable. The piggy-back is actually our technique of choice in OLT and can be performed in the majority of adult patients.

Abstract# 303 Poster Board #-Session: P106-II

POSTREPERFUSION SYNDROME AND PREDICTOR FACTORS FOR SURVIVAL AFTER LIVER TRANSPLANTATION. Ilka F. S. F. Boin[1], Yuri L. Botteon, Raquel Stucchi[3], Adilson R. Cardoso[2], Cristina Caruy[2], Marilia I. Leonardi[1], Luiz S. Leonardi[1]. *[1]Unit of Liver Transplantation, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil; [2]Anesthesiology, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil; [3]Infectology, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil.*

Introduction: Postrepefusion syndrome (PRS) is an important cause of hemodynamic deterioration during orthotopic liver transplantation (OLT)
Aim: To verify the prevalence of reperfusion syndrome (PRS) correlated to liver donor and receptor data.
Method: This is a cohort transversal study, with a retrospective analysis, carried out using a prospective data base. We analyzed 196 patients submitted to a liver transplantation from January 1994 to December 2005. We excluded retransplantations, acute hepatic failure, children and reduced organs. We performed descriptive analysis of recipients' variables for death, Child-Pugh classification, MELD, obesity, cell-saver, BMI, presence of reperfusion syndrome (median arterial pressure 30% less after 15 minutes of reperfusion compared to initial); age, warm and cold ischemia time, ICU time, hemotransfusion requirements. Donor variables such as age, sex, active infection, sodium, ICU time, presence of steatosis, or whether the donor had expanded criteria, were analyzed. Multivaried logistic regression analyses to obtain predictive factors for reperfusion syndrome were used. Kaplan-Meier and Cox regression were used for survival analysis.

Results: 20.5% of the patients had reperfusion syndrome. Actuarial survival was 71.2% of the total patients and there was no difference between those with or without PRS. The patients with greater risk of PRS were those with longer warm ischemia time (with each extra minute the risk doubled; odds ratio=1.98) and for each BMI unit the risk increased 8% (odds ratio=1.08). After Cox regression we observed that age donor >50 years old had great risk factor (odds ratio=3.9) and each unit red blood cell (RBC)decreased the survival rate 10% (odds ratio:1.1)
Conclusion: In this study the prevalence of PRS was low and the survival rate was the same for those with or without PRS. The predictive factors for PRS were warm ischemia time and BMI. The precictive factors for survival were RBC and age donor.

Abstract# 304 Poster Board #-Session: P107-II

A MODEL FOR ASSESSMENT OF HYPERTROPHIC CAUDATE LOBE IN PIGGYBACK TECHNIQUE. Vinicius Rocha-Santos, Estela R. R. Figueira, Flavio H. Galvao, Telesforo Bacchella, Marcel C. C. Machado. [1]*Gastroenterology, University of Sao Paulo, School of Medicine, Sao Paulo, Brazil.*

Caudate lobe dissection in piggyback technique is usually performed downward to upward and from the right to the left side. In this well-established technique, small veins from caudate lobe and segment VI and VII are tied and sectioned before right hepatic vein or common trunk hepatic vein. Nevertheless, hypertrophic caudate lobe is a major concern in liver transplantation piggyback technique, impairing vena cava dissection and leading to a difficult and time-consuming hepatectomy. In addition dissection of retrohepatic small veins may require total vena cava clamping, which may result in substantial hemodynamic instability.
Aim: In the present report we described a modified technique concerning to hypertrophic caudate lobe dissection during total hepatectomy in liver transplantation by piggyback technique.
Methods: Hilar structures were dissected and sectioned preserving portal vein.
Hepatic ligaments were divided. After division of right triangular ligament, right lobe was liberated from diaphragm. Small veins which drain segments VI and VII were tied and sectioned providing sufficient space to encircle easily right hepatic vein after dissection of the Couinaud space between right and middle hepatic veins. Retrohepatic dissection was interrupted at the moment we found out some degree of technical difficulties. Then dissection of the left cranial part of the caudate lobe was finished and common trunk of the middle and left hepatic veins was also encircled. After that, portal vein was clamped and sectioned, followed by right hepatic vein and common trunk section. After that, the dissection of retrohepatic space was easily completed by sectioning small veins and soft tissue realizing caudate lobe and completing total hepatectomy.
Conclusion: This modified technique is a safe and feasible procedure that may help the total hepatectomy in cases of hypertrophic caudate lobe in piggyback liver transplantation, increasing the armamentarium of the liver transplantation teams.

Abstract# 305 Poster Board #-Session: P108-II

NECROTIZING FASCIITIS BY *ASPERGILLUS* INFECTION AFTER LIVER TRANSPLANTATION. Dong Lak Choi[1], Young Seok Han[1], Mi Kyung Kim[1]. [1]*Department of Surgery and Transplantation Center, Daegu Catholic Medical Center, Daegu, Republic of Korea.*

Necrotizing fasciitis is a rapidly spreading subcutaneous infection. It can occur in patients after solid organ transplantation. But, Surgical wound infections caused by *Aspergillus* species are very unusual. We report on patient who developed necrotizing fasciitis by *Aspergillus* infection. Pre-transplantation condition was very poor due to encephalopathy by hepatitis B related liver cirrhosis, immobility for several months, and pressure sore on coccyx and buttocks. Wound infection was developed in third postoperative week. Physical findings were different from necrotizing fasciitis by bacterial infection. Diagnosis was confirmed by wound biopsy and culture that performed 2 days before death. Patient had a fulminant course and died within 1 week from onset, despite of aggressive surgical debridement, withdrawal of immunosuppression and antifungal therapy. Therefore, necrotizing fasciitis with atypical findings has to be recognized as a potential complication and *Aspergillus* must be added to the list of potential pathogens of surgical wounds, especially in the setting of liver transplantation.

Abstract# 306 Poster Board #-Session: P109-II

LIVER RETRANSPLANTION USING PIGGYBACK TECHNIQUE IN A PATIENT PREVIOUSLY TRANSPLANTED BY STANDARD TECHNIQUE. Gustavo R. Coelho[1], Bronner P. A. Goncalves[1], Marcos Aurelio P. Barros[1], Paulo Everton G. Costa[1], Ivelise Regina C. Brasil[1], Gleydson Cesar O. Borges[1], Jose T. Valenca Junior[1], Katia F. Vasconcelos[1], Joao Batista M. Vasconcelos[1], Jose Huygens P. Garcia[1]. [1]*Centro de Transplante de Figado do Ceara, Federal University of Ceara, Fortaleza, Ceara, Brazil.*

Orthotropic liver retransplantation is the treatment of choice for patients with irreversible graft damage after hepatic artery thrombosis, primary non-function, late biliary complications, chronic rejection and technical problems. The aim of this study is to report the first case of retransplantation using the piggyback technique in a patient previously transplanted by the standard technique. A 50-year-old man had been the recipient of liver allograft, because of a liver disease due to cryptogenic cirrhosis. The standard technique was performed , without venous bypass. The late postoperative, hepatic artery thrombosis was diagnosed, complicated by biliary tree necrosis , jaundice , itch and elevated levels of creatinine. Five months after the first transplant, the patient was retransplanted . Piggyback technique was used. Considering the successful outcome of our patient, we believe that the piggyback technique can be performed even for the retransplantation of patients that were previously transplanted by the standard technique.

Abstract# 307 Poster Board #-Session: P110-II

AVOIDANCE OF SKIN MACERATION FOR PREVENTION OF BED SORE DURING LIVER TRANSPLANTATION. EunBok Lee[1], MiKyung Kim[1], HyangWoo Lee[1], EunHee Sim[1], EunSun Yang[1], Hyun-A. Lee[1], So-Jin Seok[1], Hae-Im Jeong[1], Shin Hwang[1], Deok-Bog Moon[1], SungGyu Lee[1]. [1]*Division of Hepatobiliary Surgery & Liver Transplantation, Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea.*

(Purpose) Long operation time, copious irrigation and ascites spillage during operation might cause skin irritation or pressure sore in liver transplantation, especially living donor liver transplantation. The coccygeal area is vulnerable to compression during operation, leading to bed sore afterwards. Our preliminary study implicated that avoidance of maceration seemed to be effective for prevention of bed sore. **(Material and Method)** From July 2006 to September 2006, the occurrence of pressure sore in liver transplantation recipients was prospectively analyzed according to add-on water-proof protection. To prevent pressure sore, operation table was piled up by sponge of 7 cm in thickness, water-proof vinyl, warm blanket, wide gel-pad underlying the whole body, sheet, and gel-pad underlying buttocks serially. These measures were used for control group. For study group, water-proof film was attached to the coccygeal area. **(Results)** The incidence of bed sore was 27.8% in control group (5 of 18), whereas 5.6% in study group (1 of 18) (p=0.087). When confining to the control group, patient body weight was not correlated with the incidence of pressure sore (63.2+/-5.1 Kg vs. 65.2+/-10.9 Kg, p=0.738). Compression pressure to the coccygeal area was also not associated with pressure sore (p=0.673). **(Conclusion)** This study suggests that avoidance of skin maceration through attachment of water-proof film coupled with multi-layer padding is effective for prevention of pressure sore during long operation time for liver transplantation.

Abstract# 308 Poster Board #-Session: P111-II

CMV PNEUMONIA AND LIVER REJECTION IN COMBINED LIVER – KIDNEY TRANSPLANTATION: A CASE REPORT. Jose C. Chaman[1], Pedro M. Padilla[1], Carlos F. Rondon[1], Eduardo G. Anchante[1], Felix A. Carrasco[1]. [1]*Liver Transplant Service, G.Almenara National Hospital, ESSALUD, Lima, Peru.*

Objective: Report the severe manifestations of CMV disease in the setting of Liver –Kidney transplantation.
Patient and Methods: 53 y/o man with Chronic hepatitis C (HCV) cirrhosis and resected 2 cm of hepatocelular carcinoma , CTP score C 12, MELD 24, diagnosed 2 years before his transplant, with previous history of multiple transfusions for haemolysis related to hereditary spherocitosis and splenecthmy in the childhood. He developed ESRD related to HCV glomerulopathy (Cl creat 22%). During the waiting list he had multiple admissions for SBP, variceal bleeding,encephalopathy and dialysis support. He received a whole liver and kidney compatible ABO group from the same 23 y/o donor woman,

piggy back technique, CMV D+/R+. Immunosupression: Basiliximab (20 mg IV days 0 and 4) + 500 mg metilprednisolone in OR to tappered 20 mg prednisone and tacrolimus levels 10-12 ng/ml. In the next days progressively renal function was recovered without dyalisis support and good function of the liver and kidneys grafts. He was dicharged at day 20.

At day PO 40 he was readmitted for diarrhoea, fever and pain in the abdomen and perirectal space. We perform a pp65 antigen, US, CT scan, upper endoscopy and colonoscopy with negative results. After a week he developed mild bilateral infiltrate and progressively hypoxemia without cough and severe malaise. Then he underwent to CT scan, bronchoscopy, BAL and pp65 antigen with normal results. So video- toracoscopy and lung biopsy was done with CMV inclusion and positive peroxidase stain were detected. We started empirically 1 week before pathology findings ganciclovir IV with progressively good response. At the same time liver function tests and creatinin level were increasing, with ventilatory failure and dialysis in ICU support. Then liver and kidney biopsy were done with findings related to moderate cellular rejection and normal histology for the kidney graft. We started metilprednisolone 500 mg IV twice and MMF with a good response. Actually he is doing well without dialysis in outpatient clinic follow up.

Conclusion: CMV pneumonia and Liver Rejection in Combined Liver - Kidney Transplantation is an entity associated to severe illness, lose of the graft, with variable reversibility especially of the kidney function with high morbid-mortality and long staying usually from weeks to months.

Abstract# 309 Poster Board #-Session: P112-II

THE ROLE OF BILIARY RECONSTRUCTION TECHNIQUE AND LIVER ANATOMY IN BILIARY MORBIDITY AFTER ADULT LIVING DONOR LIVER TRANSPLANTATION.

Alessandro Giacomoni[1], Andrea Lauterio[1], Abdallah Slim[1], Iacopo Mangoni[1], Bogdan Dorobantu[1], Luciano De Carlis[1]. *[1]Liver Transplant and Hepato-Biliary Surgery, Niguarda Hospital, Milan, Italy.*

Introduction: biliary complications still remain the Achilles' heel of the adult living donor liver transplantation (ALDLT) with a reported negative incidence between 22% and 64%.

Patients and methods: from March 2001 to November 2006 we performed 29 ALDLT grafting segments V-VIII without the middle hepatic vein. Biliary anatomy was investigated using intraoperative cholangiography alone in the first 5 cases and MR cholangiography with Gd-BOPTA in the remaining 24 cases. In 15 cases we found a single right biliary duct (51.7%) and 14 times there were multiple biliary ducts (48.3%). We performed single biliary anastomosis in 20 times (68.9%) and double anastomosis in the remaining 9 (31.1%) cases. Whenever possible our first choice was to perform a direct anastomosis between the right hepatic duct of the graft and the common or the right hepatic duct of the recipient. When two ducts were present and in proximity to one another we performed a single anastomosis including both orifices possibly joined by a ducto-plasty. All biliary anastomoses were performed with a running suture line using 6-0 polydioxanone. Twenty-three times we drained the biliary system with a T tube while 3 times with a silastic catheter.

Results: with a mean follow-up of 828 days (8-2025 days), patient and graft survivals are 86.2% and 75.8% respectively. Four recipients (13.85%) died and 3 (10.35%) were retransplanted with whole liver.

Twelve patients (41.3%) developed 15 biliary complications (51.7%): 4 biliary leak from the cutting surface, 4 anastomotic leak, 6 late anastomotic stricture and 1 early kinking of the choledochus. Three of these patients developed two consecutive and different biliary complications.

At univariate and multivariate analysis multiple biliary ducts showed an higher risk of biliary complications (p=0.047; p=0.027). The number of anastomoses and ducto-plasty increase the risk of biliary complications (p=0.064) but without statistic significance.

Conclusion: biliary complications affected our series of ALDLT with a high percentage but none of the grafts transplanted was lost due to biliary problems. MR cholangiography seems to be a reliable instrument to investigate biliary anatomy.Multiple biliary ducts are strongly related with a high risk of complication as well as multiple biliary anastomoses and ducto-plasty.

Abstract# 310 Poster Board #-Session: P113-II

IMPACT OF PRE-TRANSPLANT SERUM HEPATITIS C VIRUS (HCV)-RNA NEGATIVITY ON POST-TRANSPLANT OUTCOME IN PATIENTS WITH HCV-RELATED CIRRHOSIS: A STUDY INCLUDING INTRA HEPATIC HCV-RNA STUDY.

Rodolphe Sobesky[1], Sarah Maylin[2], Claire Francoz[1], Rami Moucari[1,2], Michele Martinot[2], Patrick Marcellin[1,2], Valerie Paradis[3], Jacques Belghiti[4], Dominique Valla[1], Francois Durand[1]. *[1]Hepatologie, Hopital Beaujon, Clichy, France; [2]INSERM U773/ CRB3, Hopital Beaujon, Clichy, France; [3]Anatomie Pathologique, Hopital Beaujon, Clichy, France; [4]Chirurgie Digestive, Hopital Beaujon, Clichy, France.*

Background/aim: HCV-related cirrhosis, with or without hepatocellular carcinoma (HCC), is one of the most common indications for liver transplantation (LT). Almost all patients are HCV-RNA positive prior to LT and have post-LT recurrence, with a negative outcome on long term survival. The aim of this study was to investigate post-LT outcome in patients with HCV-related cirrhosis who became HCV-RNA negative prior to LT.

Methods: Fifty eight consecutive HCV positive cirrhotic patients transplanted from 2001 to 2005 and who survived one year or more after LT were included. These patients were 54 males and 4 females, 50 ± 7 years old. Thirty seven of 58 patients had HCC. Fifty two were HCV-RNA positive before LT while 6 where negative either spontaneously (n=1) or as a result of antiviral therapy (n=5). All patients had protocol biopsy one year post-LT. Liver fibrosis was assessed according to METAVIR score and fibrosis progression index (FPI= fibrosis score/time interval [years]) was calculated. In addition to serum HCV-RNA determination, liver tissue HCV-RNA was assessed on one year post-LT biopsy samples.

Results: None of the 6 patients who were serum HCV-RNA negative before LT returned to positive serum HCV-RNA status after LT. None of these 6 patients had detectable liver tissue HCV-RNA one year after LT. All 52 patients who were HCV-RNA positive prior to LT returned to serum HCV positive status after LT and all had liver graft lesions consistent with recurrent chronic hepatitis one year post-LT. FPI was significantly lower in HCV-RNA negative patients prior to LT (0.33) compared HCV-RNA positive patients prior to LT (0.98, $p<0.001$).

Conclusions: This study suggests that patients with HCV-related cirrhosis who receive antiviral therapy and become HCV-RNA negative prior to LT do not have post LT HCV recurrence. The absence of HCV recurrence is associated with a significant decrease in one year liver graft fibrosis. This study supports pre-LT antiviral therapy in candidates with compensated HCV-related cirrhosis as well as those with scheduled living donor LT.

Abstract# 311 Poster Board #-Session: P114-II

FIBROSIS PROGRESSION IN HCV POSITIVE LIVER TRANSPLANT RECIPIENTS TREATED OR UNTREATED WITH INTERFERON-α.

Pavel Trunecka[1], Eva Honsova[2], David Hackajlo[3], Sona Frankova[1], Sona Reznakova[1], Jan Sperl[1], Milos Adamec[4], Vera Lanska[3], Julius Spicak[1], Stefan Vitko[5]. *[1]Dept. of Hepatogastroenterology, Institute for Clinical and Experimental Medicine (IKEM), Prague, Czech Republic; [2]Dept. of Transplantation Pathology, IKEM, Prague, Czech Republic; [3]Dept. of Biostatistics, IKEM, Prague, Czech Republic; [4]Dept. of Transplantation Surgery, IKEM, Prague, Czech Republic; [5]Transplant Center, IKEM, Prague, Czech Republic.*

Introduction: Hepatitis C recurrence is one of the greatest problems of current liver transplantation (LTx). The goal of our retrospective study was to assess the rate of fibrosis progression and how it was inpacted by antiviral treatment.

Material and methods: Seventy-two HCV positive LTx recipients (56 M, and 16 F, mean age at Tx 49.5 years), who received transplant at our institution between 1995 and 2006, and who had at least 2 liver biopsies, were analyzed. Total of 328 biopsies were revisited by experienced hepatopathologist, and the fibrosis was staged according to Ishak (0-6). Mean follow up from LTx was 3.8 (0-11) years. Forty-two patients were treated by different Interferon-α based protocols (1- 3 courses) for 347 (mean) days, 31 remained untreated. Time to progression to stage 5 or 6 fibrosis (incomplete or complete cirrhosis) was calculated according to Kaplan-Meyer method, and the event free curves were compared between treated and untreated groups (χ^2 method). Eight of those treated achieved SVR. Direct fibrosis progression rate (degree per year) was calculated according to Sobesky [(1)], and the rate was compared between those who achieved SVR, and those who failed the treatment (t-test).

Results: Seven-years actuarial risk of developing fibrosis stage 5 or 6 was 41,1 ± 9.4% for total of 72 patients. Risk of developing stage 5 or 6 fibrosis 5-years after LTx was not different between those treated (24.1± 9,6%) and untreated (25.8±8,6%). The direct fibrosis progression rate for those who failed antiviral treatment was 1.13, and 0.28 for those who achieved SVR ($p<0.02$). The direct fibrosis progression rate in total of 72 patients was 1.38.

Conclusion: The fibrosis after LTx for HCV is progressive leading to incomplete or complete cirrhosis in up to 41% of transplanted grafts in 7 years. For those, who did not achieve SVR during the Interferon-α based treatment, the progression rate is comparable to those who were untreated.

(1) Sobesky R et al. Gastroenterology 1999, 116:378

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Abstract# 312 Poster Board #-Session: P115-II

COMPARATIVE STUDY OF LIVING DONOR LIVER TRANSPLANTATION FOR DECOMPENSATED HEPATITIS B AND C LIVER CIRRHOSIS WITH OR WITHOUT HEPATOCELLULAR CARCINOMA.

Shridhar Iyer[1], Chao-Long Chen[2], Chih-Chi Wang[3], Shih-Ho Wang[4], Yueh-Wei Liu[5], Chee-Chien Yong[6], Chin-Hsiang Yang[7], Allan Concejero[8], Amornetta Jordan[9], Bruno Jawan[10], Yu-Fan Cheng[11], Hock-Liu Eng[12]. *[1]Liver Transplantation Program, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.*

Introduction There are conflicting reports of survival in patients with hepatitis C (HCV) related cirrhosis versus other indications for liver transplantation. Living donor liver transplantation (LDLT) has been reported to have a negative influence on HCV patients. The aims of this study are 1. Compare outcomes of LDLT in hepatitis B (HBV) and C (HCV) liver cirrhosis. 2. To examine factors influencing survival. 3 Assess influence of co-existing hepatocellular carcinoma (HCC)

Patients and Methods From January 1999-November 2005, 115 adult to adult living donor liver transplantation were performed. 75 patients who underwent LDLT for HBV(55) and HCV (20) liver cirrhosis were included in the study. The inclusion criteria were Childs B/C with one or more cirrhosis related complications. Patients with Childs A cirrhosis and LDLT primarily for HCC were excluded.

Results The mean age in HBV and HCVgroups were 47.5 and 54.5 years ($p=0.001$) and HCV group had more females. 27 patients had HCC (16 in HBV and 11 in HCV, $p=0.04$). There were no differences in disease severity, comorbid conditions, graft to recipient weight ratio (GRWR), perioperative parameters, blood loss, blood transfusions. The complication rate was similar in both groups but the rejection episodes were higher in HCV (9/20) compared to HBV group (12/55)($p=0.048$). The 5-year acturial survival was 94% in HBV and 75% in HCV ($p=0.02$, log rank test). There was only one recurrence of HCC in HBV. The mean survival for HBV patients with and without HCC was 72 months (95% CI 69 to 76) and 66 months (95% CI 55 to 77 months) ($p=0.16$). In HCV patients with and without HCC the mean survival was 57 months (95% CI 45 to 70) and 38 months (95% CI 28 to 48) ($p=0.29$). On multivariate analysis including recipient age, disease etiology, HCC, MELD score, Childs status, rejection episodes, the factors for mortality were HCV (Hazard ratio 5.9, 95%CI 1.16-30.8, $p=0.03$) and blood transfusion (in litres) (Hazard ratio 1.38; 95%CI 1.1-1.7, $p=0.004$).

Conclusions HCV patients have worse prognosis compared to HBV in LDLT patients. Presence of HCC within Milan criteria does not influence mid term survival. Increasing transfusions progressively worsens survival in cirrhotic patients.

Abstract# 313 Poster Board #-Session: P116-II

PERSISTENCE OF VRE INFECTION IN LIVER TRANSPLANT RECIPIENTS TREATED WITH DAPTOMYCIN.

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Background: Daptomycin has been used in some pts with VRE after liver transplant to avoid adverse effects from linezolid (cytopenias), and quinupristin-dalfopristin (myalgias, hepatotoxicity). We have noted a number of pts who failed to clear VRE with daptomycin but did clear after switching to linezolid.

Methods: Chart review of pts with VRE infection (16) after liver transplant at a single center in a 10.5 month period. Culture and susceptibility data were recorded.

Results: 11 pts with VRE bacteremia and/or intra-abdominal infection received daptomycin initially; 5/11 (45%) cleared VRE but 6 (55%) did not; 5 were switched to linezolid and 4 then cleared VRE. Laparotomies and drainage were performed more often in pts on daptomycin (7 in 3 pts vs.1 in 1 pt on linezolid). None had endocarditis. Daptomycin was given as 6 mg/kg/d or 6 mg/kg q 48h in dialysis pts. With persistent positive VRE cultures, the MIC of daptomycin remained in susceptible range (1-2 mcg/ml) in 4/5, but in one pt the MIC rose from 4 to 8. Daptomycin durations ranged from 2-47 days (median:14 days) prior to linezolid. One multiply allergic pt with VSE liver abscess received daptomycin for 7 months with improvement but no resolution. Re-aspiration of the abscess yielded VSE with a daptomycin MIC of 8 (originally 4). Serum daptomycin levels were unavailable, so it is unclear if the volume of distribution (e.g. ICU pts) might have affected efficacy.

Conclusions: Over half of pts treated with daptomycin for VRE bacteremia or intra-abdominal infection did not clear cultures. Although persistence of a deep focus, repeated surgical drainage, may have affected time to clearance, 4/5 (80%) of pts switched from daptomycin to linezolid did clear VRE. Lack of efficacy was not explained by a rising daptomycin MIC except in 1 VRE and 1 VSE pt in whom the MIC rose to 8, showing declining susceptibility. Whether higher doses of daptomycin would have been more effective is unknown. Further studies are necessary to determine the drug(s) of choice for VRE infection in liver transplantation.

Abstract# 314 Poster Board #-Session: P117-II

INFECTIONS CAUSED BY GRAM-POSITIVE BACTERIA IN LIVER TRANSPLANT RECIPIENTS: PRESENT SITUATION AND CHALLENGES.

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Background: Data from the National Hospital Discharge Survey from 1995 to 1999 showed that individuals with cirrhosis were 2.6 times more likely to be septic, 3.5 times more likely to have Gram-positive infections, and 2.8 times more likely to have Gram-negative infections while hospitalized, when compared to patients without a diagnosis of cirrhosis

The prevalence of Gram-positive bacteria as a cause of sepsis has been increasing. The pathogenesis of Gram-positive sepsis clearly differ from endotoxin-induced septic shock. We postulated a hypothesis that Gram-positive bacterial sepsis is the biggest early microbiological challenge to liver transplant recipients.

Material and methods: We conducted an observational, prospective study on liver transplant recipients at University of Pittsburgh Medical Center. Between June 15, 2006 and November 15, 2006 we followed blood culture results in patients presenting with sepsis-like clinical symptoms. 85 consecutive liver transplant recipients were followed over the period of 1 month post-transplant. The time span of one month was selected to minimize the influence of immunosuppression and opportunistic pathogens on the etiology of septicemia. 19 patients (22.3%) developed bacterial blood infections during the first 30 days after the transplant. 15 patients (17.6%) had a Gram-positive bacteriemia (6 MSSA - methicillin-sensitive Staphylococcus aureus; 5 MRSA -methicillin-resistant Staphylococcus aureus; 4 VRE - vancomycin-resistant Enterococcus fecium). Only 4 patients (4.7 %) had a Gram-negative sepsis.

Discussion: There are several possible reasons for the increased susceptibility of liver failure patients to Gram-positive septicemia: a) empiric antimicrobial regimens designed primarily against Gram-negative pathogens have selected out resistant Gram-positives; b) increasing use of long-term intravascular catheters; c) changing epidemiology of Gram-positive pathogens; d) the spread of antibiotic resistance among Gram-positive organisms (e.g., MRSA, penicillin-resistant Streptococcus pneumoniae, VRE; and e) the lack of an intact host immune response in patients with cirrhosis.

Conclusion: Gram-positive sepsis is an important microbiological threat to liver transplant patients. Better prophylactic and empiric antimicrobial protection, especially after liver transplantation, may decrease morbidity and mortality in these patients.

Abstract# 315 Poster Board #-Session: P118-II

ASSESSMENT OF PREEMPTIVE THERAPY FOR CYTOMEGALOVIRUS IN LIVER TRANSPLANTATION.

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Background:Cytomegalovirus (CMV) is one of the most common and serious opportunistic infections in patients undergoing liver transplantation (LT) and has been associated to a high risk of rejection.A protocolized preemptive strategy in IgG positive CMV recipients has been suggested as effective in preventing CMV disease.

Objective: To assess the efficacy of a preemptive strategy for CMV in our liver transplant patients.

Methods:A retrospective analysis of medical records of all patients that underwent LT at our center (1998-2006) was performed.Since the preemptive strategy for CMV (consisting in a weekly antigenemia pp65 monitoring the first 3 months and then monthly) was adopted in March 2004 patients were separated in 2 groups:Control group (CG) that included those patients transplanted before that date and subjected to an irregular and infrequent CMV antigenemia pp65 monitoring and Preemptive group (PG) composed of patients transplanted after March 2004.Demographic,clinical characteristics and laboratory data were recorded.CMV infection was defined by the presence of a positive CMV antigenemia.CMV disease was defined by the presence of CMV syndrome and/or tissue-invasive CMV.

Results:A total of 37 patients were included.The CG included 16 patients (43,2 %);age 49 ± 10 years;68,8% males;MELD 20 ± 7. The PG included 21 patients (56,8 %); age 50 ± 14 years;62,0 % males; MELD 18 ± 8.CMV infection was present in 3 patients (18,8 %) of CG and in 14 (66,6 %) of PG (p <0,004). One patient (4,8 %) of CG developed CMV disease while none in PG (p <0,37).There were no differences between both groups with respect to acute rejection and mortality.Nevertheless,a trend to a higher prevalence of chronic rejection was seen in CG: 4/16; 25 % compared to PG: 1/21; 4,8 % (p <0,07).

Conclusions: Adoption of a protocolized frequent follow-up of antigenemia pp65 CMV determined higher detection rates of CMV infection and earlier antiviral treatment probably avoiding the development of CMV disease. However, no impact on mortality was noted in this small series.The higher prevalence of chronic rejection in the group without protocolized follow-up suggests that CMV is a risk factor for post-transplant chronic rejection.Larger and prospective studies are needed to confirm this association.

Abstract# 316 Poster Board #-Session: P119-II

EFFICACY AND SAFETY OF VALGANCICLOVIR IN THE TREATMENT OF CYTOMEGALOVIRUS INFECTION IN LIVER TRANSPLANTATION.

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Introduction: Cytomegalovirus (CMV) is a continuing cause of morbidity in liver transplant recipients, whether by direct injury to the graft or its implication in episodes of rejection or coinfection. Ganciclovir (GCV) is the treatment of choice for managing CMV infection, but requires intravenous (IV) administration, a fact conditioning its long-term use. Valganciclovir (VGCV), which has an oral bioavailability of 60%, has proved useful for prophylaxis of CMV infection in high-risk solid organ transplantation. But data on both safety and efficacy of VGC for preemptive therapy (PE) of CMV infection in liver transplantation is scarce.

Objective: To compare the evolution of CMV infection among two treatment groups: oral valganciclovir vs intravenous ganciclovir.

Methods: Since July 2003 to June 2006 data from 173 adult liver transplant recipients was prospectively compiled in the online RESITRA (Spanish Network for Study of Infection in Transplantation) database. A total of 40 episodes of CMV infection that required treatment were detected. A comparative study was performed between recipients receiving oral valganciclovir (900 mg/12 h) against those receiving IV GCV (5 mg/kg/12 h) as preemptive therapy.

Results: Valganciclovir was the first-line treatment in 15 out of 40 (37.5%) episodes (14 as preemptive therapy and one as therapy for a colitis). In two (5%) episodes VGCV was administered sequentially following IV ganciclovir. In 23 episodes (22 PE and one hepatitis) IV GCV was the first-line treatment. There were no significant differences with regard to median duration of PE in both groups (14 days). Resolution of antigenemia was achieved in 12 out of 14 cases (85.7%) in VGCV group and 100% (22/22) in ganciclovir group (p=0.13). Valganciclovir was switched to GCV based on clinical decision in one episode and due to a lack of response in antigenemia test in another. Two patients (one in each group) showed a relapse of the antigenemia test within the first month after preemptive therapy. There were no cases of treatment withdrawal due to toxicity in any episode.

Conclusion: Valganciclovir is safe and useful for preemptive therapy of CMV infection in liver transplantation.

Abstract# 317 Poster Board #-Session: P120-II

THE EFFECT OF CALCINEURIN INHIBITOR USAGE ON HEPATIC FIBROSIS PROGRESSION IN HCV-POSITIVE LIVER TRANSPLANT RECIPIENTS: A TWO-CENTRE STUDY.

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Background: Worldwide hepatitis C infection (HCV) associated liver disease is the most common indication for liver transplantation (OLT). Recurrence of HCV post-OLT is almost universal and shows an accelerated course in recent years. Newer immunosuppressive regimens have been proposed as a cause, including switching from the calcineurin inhibitor Cyclosporin A (CsA) to Tacrolimus (Tacro). In vitro, CsA has been shown to have suppressive activity against HCV and, in vivo, may have an advantage over Tacro in patients undergoing interferon based anti-viral therapy post OLT. Here we report a retrospective study in two transplantation centres, investigating the impact of CsA or Tacro on HCV-related liver fibrosis post OLT.

Methods: Sixty-three patients underwent OLT for HCV-related disease (38 Rotterdam, 25 Newcastle). Twenty (33%) patients received CsA, 41 (67%) received Tacro and data was missing on two. All received steroids during the 3-12 months post OLT. Liver biopsy was performed on clinical indication and two pathologists blinded to the therapy graded liver fibrosis using the Ishak score.

Results: Thirty-seven (61%) patients underwent liver biopsy (61% Rotterdam, 61% Newcastle) with a median time to biopsy of 18 months (range 3-82). Those treated with CsA had a lower mean fibrosis Ishak score (1.7) than those treated with Tacro (3.1), but this did not reach statistical significance. The incidence of modest to severe fibrosis (Ishak score ≥3), however, was significantly higher in those on a Tacro-based regimen (see Table) and included four patients with cirrhosis within 36 months of OLT. Furthermore, the time to significant fibrosis (Ishak score ≥2) was shorter with Tacro (mean 19 months versus 29 for CsA).

Conclusion: This retrospective two-centre study of HCV-related liver disease post-OLT demonstrates that CsA-based immunosuppression is associated with delayed development of hepatic fibrosis when compared to Tacro-based regimens. This finding will need to be confirmed in further larger prospective studies with a drug-to drug comparison.

Fibrosis score (Ishak)	CsA, n =15	Tacro, n = 22
0-3	14	13
4-6	1	9*

*p=0.028, Fisher's exact test

Abstract# 318 Poster Board #-Session: P121-II

SAFETY OF RECURRENT HEPATITIS C TREATMENT AFTER LIVER TRANSPLANTATION WITH USE OF ADJUVANTS.

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Our aim was to evaluate clinical safety and tolerability of hepatitis C treatment after liver transplantation (LT) using growth factors as adjuvants. **Methods**: We evaluated 13 patients with recurrent hepatitis C, 11 men, median age of 54 years. Two patients had grade 4 of fibrosis, 3 had grade 3, 7 had grade 2 and 1 had grade 1. All of them were under treatment with peg-interferon

alpha 2b (10 with 0.75mcg/kg/wk for 2 weeks, and after 1.5mcg/kg; the other 3 began with full dose) plus ribavirin 1g/day for at least 1 month or have withdrawal treatment due to side effects. Hemoglobin (Hb), neutrophils and platelets before and during treatment were analyzed. Erythropoietin was used when Hb levels were under 8mg/dl or it had fallen at least 3 mg/dl from entry levels. G-CSF was initiated for neutrophil counts < 800/mm³. **Results**: One patient died from sepsis after one week of treatment. Of the 12 patients that used drugs for at least one month, all of them has experienced anemia at one month of treatment. The use of erythropoietin was necessary in all of them; 8 used 30.000UI/wk, 2 used 40.000UI/wk and other 2 used 10.000IU and 24.000IU each. In all of these cases Hb levels reached the previous ones and ribavirin dosage reduction was necessary in 3 patients. It wasn't necessary drug interruption. The use of G-CSF to neutropenia was needed in 11 of 12 patients (91.6%). No patient experienced interferon interruption due to this side effect. At the beginning of treatment levels of platelets varied from 40.000 to 157.000 (median 131.000). Reduction of platelets was universally seen and in two situations, 24.000 and 34.000 platelets (in this case with relevant bleeding, and permanent treatment withdrawal). One episode of infection has led to temporary drug usage stop. No cases of rejection were detected and serotonin reuptake drugs were employed in one patient. **Conclusion**: Treatment of hepatitis C in the transplanted patient is a clinical challenge, which always requires the use of growth factors to assist the management of cytopenias. Among them, thrombocytopenia seems to be the most threatening one, since no specific treatment is available.

Abstract# 319 Poster Board #-Session: P122-II

COMPLICATED CRIPTOCOCCAL MENINGITIS OF EARLY PRESENTANTION AFTER LIVER TRANSPLANTATION: CASE SERIES. Agnaldo S. Lima[1], Luiz F. Veloso[1], André L. R. Seabra[1], Wanessa T. Clemente[1]. *[1]Instituto Alfa de Gastroenterologia, Hospital das Clínicas da UFMG, Belo Horizonte, MG, Brazil.*

The aim of this study is to present two cases of cryptococcal meningitis of early onset after liver transplantation in a 12-year experience of 400 transplants (incidence of 0.75%; a third case of late presentation won´t be reported). This is a rare complication after solid organ transplants, mostly diagnosed about 28 months after surgery. *Cryptococcus neoformans*, a world-spread fungus found abundantly in bird-feces contaminated soils causes this opportunistic infection. Commonly it begins in the respiratory tract and from there it spreads to the central nervous system. Meningitis is the most common clinical outcome. The first patient received a cadaveric graft for HCV cirrhosis and was delivered from hospital 10 days later. After three weeks, fever, weakness and headache began. Chest X-rays showed lobar pneumonia and pleural effusion. *C. neoformans* was detected in the cephalorrhachidian fluid, blood cultures and pleural effusion and histology. Thoracotomy and thoracic drainage were necessary. The second patient presented a hepatocellular carcinoma in a cirrhotic HCV liver and received a living-donor right lobe graft. Nine days after surgery he started with pulmonary noises and expectoration, followed by headache in the 10th, weakness in the 12th and back pain in the 15th day. Brain CT scan revealed hydrocephaly. In both cases, the cephalorrhachidian and ascitic fluids were positive for fungus and its cultures isolated *C. neoformans*. In the second patient, liver biopsy presented micro granulomas. Treatment started with amphotericin B in a total dosis of 2.2 and 1.5 g respectively, followed by oral fluconazole for six months (200 mg daily). Clinical follow-up continues, reaching an eight-year and a thirty-month period at this time. The medical reports show an incidence of 0.51% (it is the third more common fungical infection) and mortality of 50% despite of early treatment. Headache, mental disturbs and hepatic failure signalize poor prognosis. Although immunosuppression is ought to be the main cause, environmental factors may play a considerable part, specially because it is observed that the area where the transplant recipient lives relates to variations in its prevalence. Avoidance of birds and its feces should be encouraged.

Abstract# 320 Poster Board #-Session: P123-II

PERPLEXED CAUSES OF POST-LIVING-RELATED-LIVER-TRANSPLANT HEPATIC FAILURE IN A HBV POSITIVE RECIPIENT: HBV BREAKTHROUGH WITH YMDD MUTATION, HSV REACTIVATION OR PORTAL VEIN STENOSIS? Cheng-Maw Ho[1], Rey-Heng Hu[2], Juin-Ling Wang[3], Sung-Ting Chen[4], Hui-Ji Su[4], Ming-Chih Ho[2], Yao-Ming Wu[2], Po-Huang Lee[2]. *[1]Surgery, National Taiwan University Hospital YunLin Branch, YunLin, Taiwan; [2]Surgery, National Taiwan University Hospital, Taipei, Taiwan; [3]Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan; [4]Pathology, National Taiwan University Hospital, Taipei, Taiwan.*

The reasons of hepatic failure status post liver transplantion (LT) are diverse. A 48-year-old man, a HBV carrier with previously HSV exposure, underwent living-related LT and had progressive hyperbilirubinemia and hepatic failure 2 months after surgery [Figure1]. Abdominal CT showed portal vein stenosis. A venous stent was placed but the condition kept deteriorated. Serum HBV YMDD mutation was detected with PCR. Lamivudin and adenovir were administrated but the liver function still did not improve a lot. Two sequential liver biopsies were performed and only the second one, performed on postop 5 months, revealed diagnostic findings of submassive hepatocyte necrosis with Cowdry type I intranuclear inclusion body [Figure2], which was confirmed to be HSV type I infection by immunohistochemistry. Retrospective special stain of the first specimen, done on postop 2 months, was negative. HSV reactivation was diagnosed. The titer of HSV antibody, however, decreased from preop 1:64 (+) to 1:16(+) on postop two months. Intravenous acyclovir (250mg/6h) was administered and the liver function slowly recovered [Figure 1]. There were no clinical signs of oral or genital reactivation of HSV, fever, leucopenia, and thrombocytopenia. Surviving from HSV induced submassive hepatic necrosis in a liver recipient is rare. Early diagnosis was vital but difficult. Reevaluation and therapeutic decisions should not be delayed in clinically undetermined situations.

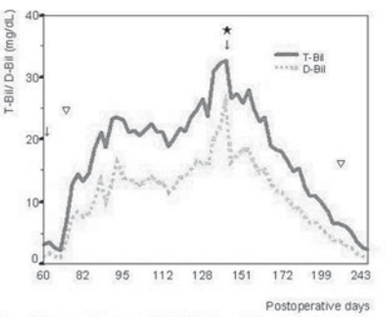

Figure 1 Sequential changes of total bilirubin, and direct bilirubin after liver transplantation
Liver biopsy (↓), Liver volume CT reconstruction (▽), acyclovir instituted (★)

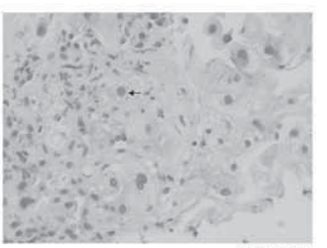

Figure 2 Liver biopsy performed 5 months after liver transplantation
The liver shows submassive necrosis with frequent Cowdry type I intranuclear inclusions (arrow) in hepatocytes.

Abstract# 321 Poster Board #-Session: P124-II

MODULATION OF INFLAMMATORY RESPONSE ON HEPATIC ISCHEMIA-REPERFUSION INJURY IN RATS: EFFECTS OF A HIGH-FAT DIET WITH PUFAS-OMEGA-3.

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Hepatic ischemia-reperfusion (I/R) injury is a complication of liver resection surgery and transplantation. This injury is a result of an acute inflammatory response characterized by the induction of a cascade of proinflammatory mediators. Previous studies have demonstrated that a high-fat diet enriched with polyunsaturated fatty acids (PUFA-ω-3) has a protective effect on the liver, causing only mild liver steatosis.

Aim: To evaluate the effect of a high-fat diet enriched with PUFAs (fish oil) on modulation of inflammatory response on hepatic ischemia-reperfusion injury in rats.

Methods: Wistar male rats were divided in 2 groups: Group I (n=10): rats with fatty liver induced by high-fat enriched with PUFAs-ω-3 for 4 weeks and Group II (n=10): received standard diet. They underwent partial liver ischemia performed by clamping the pedicle from medium and left anterior lateral liver segments during an hour. After 2 hours of reperfusion serum levels of tumor necrosis factor-α (TNF-α), interleukin-6 (IL-6) and interleukin-10 (IL-10) were determined. Hepatic mitochondrial oxidation and phosphorylation and serum aminotransferases (AST, ALT) were also analyzed.

Results: A significant reduction was observed in levels of TNF-α (0 *vs* 124 ± 35 pg/ml), IL-6 (55 ± 12 *vs* 116 ± 12 pg/ml), and IL-10 (15 ± 9 *vs* 87 ± 11 pg/ml) in the group with a high-fat enriched with PUFAs-ω-3 diet in relation of group II, with a standard diet ($p<0.05$). The PUFAs-ω-3 enriched diet group had also significant reduction of liver mitochondria dysfunction and lower levels of aminotransferases (AST: 405 ± 100 U/L *vs* 1578 ± 128 U/l; ALT: 617 ± 200 U/l *vs* 1662 ± 150 U/l) ($p<0.05$).

Conclusion: These findings suggest that a high-fat diet enriched with polyunsaturated fat (ω-3) may have a protective effect on hepatic ischemia-reperfusion injury probably by reducing inflammatory response in the liver.

Abstract# 322 Poster Board #-Session: P125-II

METABOLITES OF ARACHIDONIC ACID AS EARLY MARKER OF LIVER GRAFT INJURY.

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Arachidonic acid (AA) and its metabolites (eicosanoides) represent powerful lipid mediators, inducing and suppressing the inflammatory reaction in response to disturbances.Liver injury in cadaver prior to harvesting may induce response in AA cascade.**The aim** of this study was to assess the relation between AA,20-hydroxyeicosatetraenoic acid (20-HETE),15-hydroxyeicosatetraenoic acid (15-HETE) blood concentration and the grade of liver injury represented by early graft function.**Patients and methods**.Prospective studies involved recent series of 20 consecutive liver transplants performed in our institution.Blood samples for AA,15-HETE and 20-HETE were taken from hepatic and peripheral vein in the donor prior to harvesting.The second series of samples were received from the recipient blood at the start of the Tx,in an anhepatic fase,during the revascularization of the liver,30 min and 60 min following reperfusion.**Results.**We have found significant positive correlation of 15-HETE (R=0,94 p<0.00001),and of 20-HETE (**R**=0,56 p<0,02) concentrations in the donor blood with the early graft function measured as serum AST level at day 1,2 and 3.Similar correlation was found between ALT level in the recipient (day1-3) and AA (R=0,49 p<0,05), 20-HETE (**R**=0,58 p<0,01),15-HETE (R=0,57 p<0,01) in the donor. Similarly concentration of 15-and 20-HETE in the recipient blood samples from hepatic vein at reperfusion as well as from peripheral vein at 30 min and 60 min following reperfusion were correlated with AST and ALT level at day 1 to 3.

	15-HETE-reperf.	15-HETE 30min	15-HETE 60min	20-HETE-reperf.	20-HETE 30min	2-HETE 60min.
AST-2nd day	R=0.93 p<0,00000	R=0.94 p<0,0000	R=0.51 p<0.03	R=0.55 p<0,02	R=0.35 NS	R=0.45 NS
ALT-2nd day	R=0.57 p<0.01	R=o.59 p<0.01	R=0.54 p<0.02	R=0.58 p<0.01	R=0.42 NS	R=0.45 p<0.07

Conclusion.AA and eicosanoides concentration in the donor and recipient correlate with the early graft function after transplantation of the cadaveric liver.

Abstract# 323 Poster Board #-Session: P126-II

A SIMPLIFIED MODEL OF ARTERIALIZED LIVER TRANSPLANTATION IN RAT WITH ADHESIVE SUTURELESS ANASTOMOSIS.

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Arterialized orthotopic liver transplantation in the rat is the best model to study immunological and pathophysiological reaction of this procedure; however, it requires an exhaustive training of microsurgery to reach satisfactory success performance. The author describes a simplified model of liver transplantation in rats using a new technique of adhesive sutureless anastomosis. **Surgical technique:** In donor, the graft is removed preserving suprahepatic vena cava, portal vein, infrahepatic vena cava, bile duct and celiac trunk and perfused with cold lactated Ringer solution. On the back-table cuffs were inserted into infrahepatic, suprahepatic portal vein and celiac trunck using 14 - 16G teflon catheter. The margin of vein and celiac trunk was introduced into a polyethylene cuff and everted, covering the outer wall. The everted edge was fixed to the base of the cuff by three equidistant stitches. In the recipient, after total hepatectomy the graft is orthotopically implanted and the anastomosis are performed according to the new sutureless anastomosis. Briefly, the cuff apparatus was introduced into recipient's vessel border and an encircling 6-0 ligature was applied to attach both margins to the cuff. The recipient vessel segment below the ligature was moved proximally and everted, exposing both intimae. The intimae were dried by Q-tips and adhesive is carefully spread on intimae and around entire anastomosis surface. The proximal everted segment was moved distally, sealing the borders. Ligatures used to fix the apparatus were sectioned and the cuff was disconnected from the anastomosis and released from the vein. The clamps were removed and reperfusion was closely observed. The following sequence of anastomosis was observed: suprahepatic vena cava, portal vein, infrahepatic vena cava, arterial and bile duct anastomosis. Bile duct anastomosis is performed with stent insertion. Graft arterialization is obtained by anastomosis between celiac trunk and righ renal artery, after right nefrectomy. The anhepatic phase is the critical period and and this simplified technique is an excellent way to shorten this time. Recipient's operation period varies between 40-60 min. **Conclusion:** This arterialized sutureless model of orthotopic liver transplantation in rat is feasible, allow cuff removal from anastomosis and may be of value in the study of the immunological and physiological reactions after liver transplantation.

Abstract# 324 Poster Board #-Session: P127-II

EVALUATION OF LIVER GRAFTS DURING TRANSPLANTATION USING AUTOFLUORESCENCE SPECTROSCOPY.

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Aim: The graft is an important determinant of a successful liver transplant. At present, methods available for the evaluation of the potential grafts, such as biopsies, are time consuming and invasive. Autofluorescence laser spectroscopy has great diagnostic potential which is being explored in areas such as dermatology and oncology. This study analyses the use of autofluorescence in the evaluation of liver grafts in transplantation.

Method: A Doubled Nd:YAG laser coupled to an optical fiber with excitation at 532nm was used in this study. The fiber set has 7 individual fibers disposed in a hexagonal shape. The central fiber delivers the laser beam (about 5mW) while the six adjacent ones are used to collect the fluorescence light

into a monochromator which provides the spectrum. Spectra are collected from specific points of the liver starting during the harvesting procedure, before perfusion with the storage solution, after perfusion and again after transportation just before implantation, after reperfusion and one hour after arterial perfusion of the graft. Along with the fluorescence, biochemical tests and biopsy specimens were also obtained for analysis.
Results: The spectra obtained show an increase in the fluorescence around 630nm on perfusion with the storage medium. On reperfusion, the fluorescence starts to decrease while a notable band appears at 700nm which correlates with the recirculation of blood in the graft. This may represent the accumulation of metabolites during the ischemic phase, which are gradually washed away as represented by the return of the fluorescence spectra to baseline values. One hour after arterial perfusion, the band at 630nm also returns to original values.
Conclusions: The results show that liver autofluorescence reflects the changes undergone by the graft with the possibility of providing this information in real-time and non-invasively.

Abstract# 325 Poster Board #-Session: P128-II

EFFECT OF N-ACETYLCYSTEINE ON INTRA-OPERATIVE CU,ZN-SOD VALUES IN LIVER TRANSPLANT RECIPIENTS. Carmen Olmedo[1], Pablo Bueno[1], Ana Comino[1], Laila Hassan[1], Francisco Santiago[3], Karim Muffak[2], Daniel Garrote[2], Jesus Villar[2], Jose-Antonio Ferron[2]. *[1]Experimental Surgery Research Unit, Virgen de las Nieves University Hospital, Granada, Spain; [2]General and Digestive Department, Virgen de las Nieves University Hospital, Granada, Spain; [3]Anesthesiology Department, Virgen de las Nieves University Hospital, Granada, Spain.*
PURPOSE: The excess of reactive oxygen species during liver transplantation is controlled by several antioxidant enzymes such as superoxide dismutase (SOD) which occurs in three isoforms containing manganese (Mn) iron (Fe) or copper plus zinc (Cu,Zn) as prosthetic metals. We evaluate the intra-operative Cu,Zn-SOD values during liver transplantation.
METHODS: The study was developed in 26 recipients of liver transplantation. Written informed consent was obtained from the patients' relatives, and the study protocol was approved by the local Clinical Research (Ethics) Committee. Ten liver transplant recipients received a placebo compound and the others sixteen received 100 mg/Kg weight of N-acetylcysteine (NAC) at the beginning of anhepatic phase. Blood samples containing EDTA as anticoagulant were obtained as follows: I-1 (after induction of anesthesia), I-2 (15 min of anhepatic phase), I-3 (5 min before reperfusion), I-4 (10 min after reperfusion), I-5 (20 min after reperfusion), I-6 (60 min after reperfusion) and I-7 (1h after transplantation). SOD enzyme activity was estimated by the ferricytochrome c method and the isoforms were differentiated using potassium cyanide (KCN) and H_2O_2 as inhibitors: Cu,Zn-SODs are inhibited by KCN and H_2O_2; Fe-SODs are resistant to KCN but inhibited by H_2O_2; and Mn-SODs are resistant to both inhibitors.
RESULTS: Total SOD activity was represented by Cu,Zn-SOD (66%) and Mn-SOD (33%), whereas Fe-SOD was not detected. Cu,Zn-SOD values were lowest at I6 in placebo group than in NAC treated-group.
CONCLUSION: NAC contributes to recovering Cu,Zn-SOD values during liver transplantation.

Abstract# 326 Poster Board #-Session: P129-II

COMPARISON OF HEPATIC ARTERY AND PORTAL VEIN HEMODYNAMICS IN PATIENTS WITH CHRONIC BUDD-CHIARI SYNDROME (CBCS) AND HEALTHY INDIVIDUALS: EFFECT OF PARTIAL AND COMPLETE OCCLUSION OF HEPATIC VEINS, PORTAL FLOW INVERSION AND PORTAL THROMBOSIS. Ailton Sepulveda, Jr.[1], Andre C. Oliveira[1], Rodrigo C. Surjan[1], Antonio S. Marcelino[2], Maria C. Chammas[2], Giovanni G. Cerri[2], Telesforo Bacchella[1], Marcel C. Machado[1]. *[1]Liver Transplant Service, University of São Paulo, São Paulo, Brazil; [2]Institute of Radiology, University of São Paulo, São Paulo, Brazil.*
OBJECTIVES: To evaluate the hepatic artery (HA) and portal vein (PV) hemodynamic indexes with Doppler Sonography in patients CBCS and in healthy individuals.
METHODS: Doppler Sonography was performed in 24 patients with CBCS. The control group was composed by 45 candidates for liver donation in living donor liver transplantation. The following parameters were evaluated: HA resistive and pulsatility indexes, HA and PV velocities and flow direction in the PV.
RESULTS: The PV velocity was significantly lower in CBCS than in healthy individuals (p=0,018). The pulsatility index (PI) of the HA (0,96 +/- 0,32) in CBCS with portal thrombosis or flow inversion is lower than in CBCS without portal thrombosis (1,43 +/- 0,44) (p = 0,057) but the peak systolic velocity and resistive index were similar in both groups.
CONCLUSION: Hepatic arterial resistance decreases in CBCS, particularly when there is associated PV thrombosis and flow inversion. To support this finding, we found that the PI of the HA is lower in patients with CBCS than in controls, although this result was not significant in our study group. We believe that variations in the degree of occlusion of the hepatic veins, different draining routes and degrees of intrinsic flow regulation may explain these findings.

Abstract# 327 Poster Board #-Session: P130-II

INTRA-HEPATIC COLLATERALS AND HEMODYNAMIC CHANGES IN CHRONIC BUDD CHIARI SYNDROME: DOPPLER AND ECHO ENHANCED SONOGRAPHY FINDINGS. Andre C. Oliveira[1], Antonio S. Marcelino[2], Rodrigo C. Surjan[1], Ailton Sepulveda, Jr.[1], Maria C. Chammas[2], Giovanni G. Cerri[2], Telesforo Bacchella[1], Marcel C. Machado[1]. *[1]Liver Transplant Service, University of São Paulo, São Paulo, Brazil; [2]Institute of Radiology, University of São Paulo, São Paulo, Brazil.*
The aim of this study is to Review the morphologic findings and the hemodynamic changes as intra-hepatic pathways in chronic Budd Chiari Syndrome (CBCS) by Doppler sonography and echo enhanced contrast agents. Although venography is the gold standard for BCS, sonography is an important imaging tool for diagnosis and follow-up. Echo enhanced contrast agents are available and have different applications on liver studies. Mechanisms of hemodynamic compensation include increase in arterial flow, redistribution of portal flow from areas where outflow is impaired toward areas where outflow is preserved, and development of small or large venous collaterals bypassing the obstructed veins. Chronic Budd-Chiari form is more difficult to diagnose because the clinical findings are variable, depending on the number of hepatic veins affected and the ability of the liver to develop collaterals. Echo enhanced contrast agents are a promising tool that may assist Doppler sonography on diagnosing Budd-Chiari syndrome and its complications.

Abstract# 328 Poster Board #-Session: P131-II

RESPIRATORY COMPLICATIONS AFTER PIGGYBACK LIVER TRANSPLANTATION. Marilia I. Leonardi[1], Ilka F. Boin[1], Luiz S. Leonardi[1]. *[1]Surgery, State University of Campinas Medical School, Campinas, SP, Brazil.*
The prevalence of respiratory complications in the early post operative period of orthotopic liver transplantation (OLT) is high and ranges from 20 to 98%. **Aim:** The aim of the study is to retrospectively verify whether the type of IVC reconstruction, requiring or not total caval clamping, influences the occurrence of respiratory complications during the first 30 post operative days of OLT.
Patients and Method: 275 patients were included in the study, irrespective of age or sex, all of them transplanted due to chronic liver insuficiency. These patients were selected among 315 transplants performed from 1991 to 2005. The mean age of patients was 43.2 years and the most frequent disease etiology was chronic viral hepatitis (67% of patients). Patients were grouped according to IVC reconstruction:
- group PB3: (117 patients) piggyback technique with caval end-to-end anastomosis including recipient 3 hepatic veins;
- group PB2: (101 patients) piggyback technique with caval end-to-end anastomosis including the recipient central and left hepatic veins;
- group PBL: (20 patients) piggyback technique with caval venoplasty and lateral anastomosis;
- group ST: 37 patients transplanted with the standard method (retro hepatic IVC resection) without venous bypass.
Intra-operative PAMP was recorded during OLT (t1: at the beginning of laparotomy, t2: anepatic phase, t3: 5 minutes after reperfusion, t4: 15 minutes after reperfusion, t5: at the end of OLT). Respiratory complications observed during the first 72 hours were registered.The Chi square test and unifatorial analysis of variance were employed, with significance level less than 5%.**Results:** Group PB2 and PB3 showed higher values of PAMP at t2 (p=0.025). However from t3 to t5, PAMP values were considerably higher in group PBL (p=0.008). PAMP in group ST was lower during the entire procedure.The prevalence of respiratory complications was 48%. There is tendency to a statistical significant difference in the prevalence of respiratory

complications in group PBL (p=0.054).**Discussion:** The increase of PAMP during OLT can be correlated with the higher prevalence of post operative respiratory complications in group PBL.

Abstract# 329 Poster Board #-Session: P132-II

FULMINANT HEPATIC FAILURE IN THE LARGEST TERTIARY HOSPITAL IN BRAZIL. Rodrigo C. T. Surjan[1], Telesforo Bacchella[1], Estela R. Figueira[1], Marcel A. Machado[1], Marcel C. C. Machado[1]. *[1]Liver Transplant Service, University of São Paulo Medical School, São Paulo, Brazil.*

From Jan/2002 to Nov/2006, 58 patients were admitted to the Clinics Hospital of the University of São Paulo (CHUSP) and diagnosed with Fulminant Hepatic Failure (FHF). According to previous studies, 79,3% (46/58) were woman, and average age was 37,1 years. The most common causes were criptogenic hepatitis (34,5%-20/58), drug hepatotoxicity (31%-18/58), viral hepatitis (20,7%-12/58) and auto-immune hepatitis (10,3%-6/58). No acetaminophen-induced hepatotoxicities were diagnosed and drug- induced FHF was most frequently related to anti-hypertensive agents. Distribution of cases was similar between the years. The mean interval between onset of jaundice and encephalopathy was 19 days. The time interval between admission and inscription for emergency liver transplantation (LTx) based on King´s Hospital and/or Clichy criteria was highly variable, with a mean duration of 1,8 days (0-19 days). Thirty five patients underwent liver transplantation from cadaveric donors (60,3% - 35/58). The average waiting time to transplant was 2,7 days (0-16), and 65,7% of the transplanted patients received a liver graft from an extended criteria donor according to Briceno criteria. The overall mortality associated to FHF was 70,7% (41/58). Patients that did not underwent LTx died. The 1-year actuarial survival of LTx recipients due to FHF was 53,8% (Kaplan Meier). Creatinine at admission tended to be an independent prognostic factor, although it did not reach statistical significance (p=0,08). The Model for End-stage Liver Disease (MELD) scale did reach statistical significance when comparing groups of patients that survived and did not survive after FHF diagnosis (p<0,01). Mean overall hospital length-of-stay was 18,5 days. Any patients received treatment with liver support systems.

CONCLUSION: Criptogenic hepatitis and drug induced hepatic failure comprehended a large number of patients. Viral hepatitis is also a major cause of FHF in Brazil. Delayed patient referral to liver transplant services, prolonged waiting time until LTx, the absence of a national organ sharing policy to emergency LTx and poor donor and graft characteristics in Brazil may be determinant factors to overall and post-transplant mortality. MELD is a prognostic factor to FHF, and creatitine showed a tendency towards statistical significance. In our service, every patient that did not receive a liver graft died while waiting for a LTx.

Abstract# 330 Poster Board #-Session: P133-II

LIVER TRANSPLANTATION IN 35 PATIENTS WITH FULMINANT HEPATIC FAILURE. T. Bacchella[1], E. Figueira[1], M. Barros[1], R. Cury[1], E. Abdala[1], P. Bonazzi[1], P. Medeiros[1], R. Surjan[1], R. Martino[1], F. Makdissi[1], V. Rocha-Santos[1], A. Oliveira[1], J. A. Rocha[1], J. P. Rocha[1], F. H. Galvao[1], E. L. R. Cancado[1], A. Q. Farias[1], H. Sette[1], M. A. C. Machado[1], F. J. Carrilho[1], M. C. C. Machado. *[1]Gastroenterology, University of Sao Paulo, School of Medicine, Sao Paulo, SP, Brazil.*

Fulminant hepatic failure (FHF) is associated with high mortality and liver transplantation (LTx) is the treatment of choice.

OBJECTIVE: The aim of this study is to present 35 cases of FHF submitted to LTx at our Service.

METHODS: Thirty five patients with FHF submitted to LTx, from Jan, 2002 until Nov, 2006, were analyzed. The LTx indication was made according to King's College or Clichy Criteria, and none of the patients had a pre-existing hepatic disease. All grafts were from deceased donors (DD). Survival rate was estimated by Kaplan-Meier method.

RESULTS: Patients median age was 37 years (range, 16-70). Twenty-nine (82.9%) were females and 6 (17.1%) males. The etiologies of FHF were: unknown 12 cases (34.3%); drug 10 (28.6%); HBV 7 (20%); AIH 5 (14.3%); and HAV 1 (2.9%). Patients were referred after a median period of 19 days (range, 5-60) from the onset of the symptoms. The median waiting time to transplantation was 2 days (range, 0-16). According to Briceno Score, 23 (65.7%) hepatic grafts were from extended criteria donors (ECD). Hepatic retransplantation was done in 1 patient for graft disfunction. The overall 1-year graft and patient survival rate was 53.8% and the 3-year survival, 50%. Operative mortality was 8.6%, early postoperative mortality was 37.1%, and late mortality was 5.7%. The main causes of early mortality were: sepsis, bleeding, and multiorgan failure. The late mortality was related to immunosuppression non-compliance. The mean patient follow-up time was 16.4 months (range, 0-57). Others 27 patients with FHF died while waiting liver transplant or were referred too late.

CONCLUSION: Delay of referring patients with FHF, critical shortage of hepatic grafts from DD, and lack of a policy and organization for national organ procurement for urgency candidates, increase the waiting time worsening the clinical status of the patients. In the same way the use of grafts from ECD donors mainly in the sickest patients had an unfavorable impact in the early results after LTx. Nevertheless the high mortality index, LTx is the ultimate method of treatment of FHF, since all patients that had not been transplanted died waiting for a liver graft.

Abstract# 331 Poster Board #-Session: P134-II

HEART FAILURE AS A CAUSE OF SEVERE ACUTE HYPOXIC HEPATITIS: AN OFTEN UNKNOWN CONDITION. Sonia Ben Hamida[1], Philippe Ichai[2], Faouzi Saliba[1], Bruno Roche[1], Jean-Charles Duclos-Vallee[2], Denis Castaing[1], Didier Samuel[2]. *[1]Centre Hépato-Biliaire, AP-HP Hopital Paul Brousse, Villejuif, France; [2]Unite 785, Inserm Universite Paris Sud 11, Villejuif, France.*

Cardiac diseases are the main cause of hypoxic hepatitis. The mechanisms of hypoxia of the liver involve decreased hepatic blood flow due to left-sided heart failure (ischemia) and venous congestion secondary to right-sided heart failure.

Aim: To describe the clinical characteristics and outcome of patients with severe or fulminant hypoxic hepatis due to heart failure.

Patients : From 1995 to 2006, 327 patients were admitted to our liver intensive care unit for severe or fulminant acute hepatitis. 14 patients (4.3 %) (7 M, 7 F; mean age 57 years, range : 33-82) were subsequently found to have acute hypoxic hepatitis secondary to heart failure.

Results : On admission, 2 patients had cardiac arrhythmia, 8 patients had heart failure, and 4 had both arrhythmia and heart failure. Seven patients had no history of cardiac disease. Mean values of factor V, ALT, AST, creatinine and bilirubin levels were 19 (2-30) %, 2470 (771-8896) IU/L, 4095 (1691-16950) IU/L, 212 (138-450) µmol/L and 57 (21-139) µmol/L respectively. Nine patients required dobutamine and/or epinephrine and/or norepinephrine to maintain mean arterial blood pressure up to 70 mmHg and 4 patients received anti arrhythmia drugs. In 5 patients, hemodynamic measurements of mean arterial pulmonary pressure, central venous pressure, and cardiac index were 34 (28-35) mmHg, 16 (15-19) mmHg, and 2,2 (1,5-2,4) L/min. Echocardiography showed dilated cardiomypathy in 6 patients. Transjugular liver biopsy performed in 11 patients showed centrilobular liver cell necrosis in all cases. Hepatic function quickly improved once the cardiocirculatory function was restored. Two patients with severe hepatic encephalopathy, one of them on the waiting list for emergency liver transplantation, required albumin dialysis (MARS®) and subsequently improved. One patient died of septic shock. Mean length of stay in intensive care unit was 8 (2-19) days.

Conclusion : In patients hospitalized in liver intensive care unit with a diagnosis of severe or fulminant acute hepatitis of unknown origin, an unknown cardiac disease should be considered. Hypoxic hepatitis due to heart failure has a good prognosis after restoration of cardiocirculatory function.

Abstract# 332 Poster Board #-Session: P135-II

TWO-STAGE TOTAL HEPATECTOMY AND LIVER TRANSPLANTATION FOR FULMINANT HEPATIC FAILURE AND PRIMARY GRAFT DYSFUNCTION. Hyo Jun Lee, Sung Gyu Lee, Young Joo Lee, Kwang Min Park, Shin Hwang, Ki Hun Kim, Chul Soo Ahn, Deok-Bog Moon, Tae Yong Ha, Gi Won Song, Ki Myung Moon, Bum Soo Kim, Dong Hwan Jung, Jeong Ik Park, Je Ho Ryu. *[1]Surgery, Division of Hepato-Biliary Surgery and Liver transplantation, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Republic of Korea.*

(Backgrounds and aims) Hepatic necrosis due to fulminant hepatic failure or acute graft failure are well-known and accepted indications for urgent liver transplantation. Prerequisite is the allocation of a suitable donor organ. If no allograft is available in time, patients with " toxic liver syndrome" or exanguinating hemorrhage have been shown to benefit from advanced total hepatectomy. We describes the experience with a bridging procedure for a prolonged anhepatic period during clinical liver transplantation in case of fulminant hepatic failure and primary graft dysfunction. (Patients and methods) The graft was removed and a portocaval shunt was performed in

two patients. Retransplantation was possible, after an anhepatic period of 17, 61 hours, repectively. (Results) We identified 2 patients with fulminant hepatic failure and primary graft dysfunction after orthotopic liver transplantation who underwent a 2-stage hepatectomy and liver transplantation. First patient was young man and had fulminant hepatic failure with semicomatous state. Second patient was young woman with semicomatous state and had primary non function after orthotopic liver transplantation due to toxic hepatitis associated with drugs. Second patient underwent living donor liver retransplantation. In two cases, after hepatectomy, vasopressor requirements decreased. Hospital stay of first patient was 22days. First paitient was alive and well with adequate liver function at 2 months follow-up. Second patient continued to receive supportive care in intensive care unit. (Conclusions) Two-stage total hepatectomy with temporary portocaval shunt, and subsequent liver transplantation can be a life-saving approach in patients most likely to die of the sequelae of advanced liver or graft necrosis that cannot controlled by conventional treatment or immediate liver transplantation.

Plenary Session I

Abstract# 333

EFECT OF INTRAOPERATIVE HYPERGLYCEMIA DURING LIVER TRANSPLANTATION. Shawn J. Pelletier[1], John B. Ammori[1], Matthew Sigakis[2], Jeffrey D. Punch[1], Michael O'Reiley[2]. [1]*Surgery, Univ of Michigan, Ann Arbor, MI, USA;* [2]*Anesthesiology, Univ of Michigan, Ann Arbor, MI, USA.*

Intensive blood glucose management has been shown to decrease mortality and infections for intensive care patients. The effect of intraoperative (intraop) tight glucose control on outcomes following surgical procedures, including liver transplantation (OLT), has not been evaluated.

Methods: A retrospective review of all adult OLT recipients transplanted at an academic institution between Jan 1, 2004 and Jul 6, 2006 was performed. Donor and recipient demographics, intraop variables, and postoperative outcomes were collected. Intraop glucose measurements were performed by anesthesiology and treated by insulin bolus or continuous infusion as indicated. Patients with strict glycemic control (mean glucose < 150 mg/dl) were compared with those with less stringent control (mean glucose ≥ 150). Statistical analysis was performed using t-test for continuous variables and chi-square for categorical variables. Survival was evaluated using Kaplan-Meier curves with log rank test for significance.

Results: During the study period a total of 184 patients met criteria for analysis. Recipients with strict glycemic control (n=60) had a mean glucose of 135 mg/dl compared to 184 mg/dl in the poorly controlled group (n=124). Strict glycemic control was also associated with lower preoperative blood glucose values (98 vs. 127 mg/dl; $P < 0.01$) and intraop insulin administered (13.4 vs. 23.8 units; $P = 0.04$). Both groups were similar in donor characteristics (age, cause of death, and liver ischemic times) and recipient characteristics (sex, body mass index, coronary artery disease, diabetes, etiology of liver failure, renal function, use of steroids, and MELD score). Strict glycemic control was associated with younger age (47±2 vs 53±1 years; $P < 0.01$). Although the incidence of most postoperative complications (acute rejection, myocardial infarction, renal failure, hepatic artery thrombosis, biliary complications, and re-OLT) was similar between the two groups, poor glycemic control was associated with a significantly increased rate of infection (48% vs. 33%, $P=0.05$) and 1-year mortality (21.9% vs. 8.8%; $P = 0.05$).

Conclusion: Poor intraoperative glycemic control in OLT recipients was associated with an increased risk of post-operative infection and overall mortality. These data suggest that strict intraop glycemic control, possibly using insulin infusions, may improve outcomes following OLT.

Abstract# 334

LAPAROSCOPIC LIVING DONOR LEFT LOBE LIVER HARVESTING IN PEDIATRIC LIVER TRANSPLANTATION. INITIAL RESULTS. Amr Abdelaal, Ali Choukr, Mustafa Adham, Jerome Dumortier, Pierre Sagnard, Catherine Boucaud, Olivier Boillot. [1]*Liver Transplant Unit, Edouard Herriot Hospital, Lyon, France.*

Objective: Reporting our initial experience in laparoscopic left lobe harvesting in pediatric living donor liver transplantation (LDLT) with the analysis of perioperative donors' morbidities in an attempt to judge the feasibility of this technique.

Patients & Methods: From May 2005 to September 2006 we performed 5 pediatric LDLT using left lateral segment grafts harvested laparoscopically. Patients were 5 females with ESLD as a consequence of biliary atresia, 4 of them had undergone Kasai operation. The median age of the children was 12.2 months (range 9-18 months) and the median weight was 7.61 Kg (range 6.13 – 9.07 Kg). The donors were 3 mothers, one father and one grandmother with a median age of 33.4 years (range 25-46 years) and a median BMI of 22.6 (range 19-27).

Results: The donors' operations were completed laparoscopically in the 5 cases with no conversion to open technique. The median operative time was 402 minutes (range 353-520 minutes) with no major intra-operative events. The harvested left lateral segments were in a good anatomical and morphological conditions with absence of vascular or biliary anomalies except for 1 case with double bile ducts which necessitated double biliary anastomoses. None of the donors had postoperative surgical complications and the median hospital stay was 8 days (range 6-14 days). The median graft weight was 278 gm (average 210-340gm) and the median cold ischemia time was 124 minutes (90-200 minutes) with excellent graft recovery. However one child had 2 surgical revisions for secondary hemorrhage and anastomotic biliary fistula. All 5 recipients are currently alive with well functioning graft.

Conclusion: Laparoscopic left lateral segmentectomy harvesting in pediatric LDLT is feasible with excellent donors' outcome. The combination of extended experience in hepatic surgery especially living donor harvesting and advanced laparoscopic techniques is mandatory to initiate such a program. We expect that this technique will be considered as the Gold Standard Technique in paediatric LDLT in the coming few years.

Abstract# 335

IMPACT OF INFLOW OCCLUSION IN ADULT RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION. Murat Dayangac[1], Burcin Taner[1], Deniz Balci[1], Zahide Kurt[1], Baris Akin[1], Cihan Duran[1], Omer Ayanoglu[1], Yildiray Yuzer[1], Yaman Tokat[1]. [1]*Surgery, Florence Nightingale Hospital, Istanbul, Turkey.*

Intermittent Pringle maneuver (IPM) is an established technique to decrease blood loss during the transection of liver parenchyma. However, one important concern is that it may cause parenchymal ischemic injury in association with extended periods of clamping. Despite its well-documented benefits, almost all liver transplant centers are carrying out donor hepatectomy in living donor liver transplantation (LDLT) without applying inflow occlusion for fear of ischemia-induced graft damage. We have designed a prospective trial comparing IPM with no inflow occlusion in patients undergoing donor right hepatectomy for LDLT.

50 consecutive LDLT procedures using right lobe were randomly assigned into two groups between July 2004 and November 2006. In group 1, 26 donor operations were performed using IPM during parenchymal transection. The IPM involved using cycles of 15-20 minutes of inflow occlusion and 5 minutes of reperfusion. In group 2, 24 donor operations were performed with no inflow occlusion.

The two groups of donors were similar in terms of gender, age, and body mass index. The donor hepatectomy parameters including actual graft volume (810±113 gram vs. 856±150 gram), remnant liver percentage (35.0±4% vs. 36.1±3%), parenchymal transection time (86±33 min. vs. 83±36 min.), and blood loss during donor hepatectomy (360±138 ml vs. 343±268 ml) were all comparable. Blood transfusion was not required in any operation and the mean inflow occlusion period (Group 1) was 47 minutes. In Group 1, the mean postoperative maximum AST, ALT, and INR levels were significantly higher than in Group 2. The corresponding recipients of the donors in Group 1 also showed higher postoperative AST, ALT, bilirubin, and INR peak levels. However, neither donor death nor delayed graft function was observed and the mean hospital stays both for the donors and the recipients were comparable.

Prospective analysis of the effect of IPM on both graft quality and hepatic remnant function showed augmentation of ischemic injury in both donors and the recipients. However, there was no clinical consequence related to ischemia induced graft injury. Our current practice involves selective IPM only when necessary. Before accepting the IPM as a part of living donor hepatectomy, further prospective studies are necessary to examine the benefits for the donor and any potential deleterious effects on the graft.

Abstract# 336

MATCHED CASE-CONTROL ANALYSIS OF RECIPIENTS OF STANDARD LIVER DONORS AND THOSE FROM DONATION AFTER CARDIAC DEATH. Rodrigo M. Vianna, Richard S. Mangus, Ashesh P. Shah, Jonathan A. Fridell, Ivanessa Pardo, Martin Milgorm, Joseph Tector. *[1]Surgery, Clarian Tranaplant Center, Indiana University School of Medicine, Indianapolis, IN, USA.*

Objective

Recipients of livers from the donation after cardiac death (DCD) protocol have been shown to have worse graft and patient survival and increased incidence of biliary complications when compared to donation after brain death (DBD) donors. Previous studies have compared DCD to all DBD donors. This study presents the results from 30 DCD liver donors transplanted over 3 years time and compares results to a matched case-control comparison group taken from a contemporaneous cohort of non-extended criteria brain dead donors.

Methods

Data was extracted from the transplant center data registry, UNOS data, and from the original on-site donor data chart. Thirty percent of all donors met non-ECD criteria (standard donor) and were included as potential matches for the case-control study. Each DCD liver recipient was matched to three standard, DBD recipients as matched standard donor controls (MSDC) by: age +/- 10 years, primary diagnosis, donor age +/- 10 years, recipient MELD +/- 5, and cancer stage for those with HCC (n=6). Outcomes included graft and patient survival at 3-months, 1-year and 2-years; perioperative death; first 30-day post-transplant liver function; and, biliary complications.

Results

The DCD (n=30) and MSDC (n=90) groups differed only in mean MELD at transplant (15 vs 17, p=0.01) and mean warm ischemia time (25 vs 39 minutes, p<0.001). Survival and biliary results are shown in the table. AST and ALT were significantly higher for the DCD group at POD 1 but were equivalent by POD 7. Total bilirubin for the DCD group was equivalent at POD 1 but remained higher on POD 7, 14, and 30.

Table. Summmary of case-control study of post-liver transplant outcomes for donation after cardiac death (DCD) and matched standard donor controls (MSDC).

	Overall	DCD	MSDC	p-value
OVERALL	120	30	90	
Graft survival				
3-month	109/120 (90.8%)	27/30 (90.0%)	82/90 (91.1%)	NS
1-year	86/102 (84.3%)	15/19 (78.9%)	71/83 (85.5%)	NS
2-year	53/69 (76.8%)	3/4 (75.0%)	50/65 (76.9%)	NS
Graft loss in first 7 days	2/120 (1.7%)	1/30 (3.3%)	1/90 (1.1%)	NS
Need for imaging (ERCP/PTC)	68/120 (56.7%)	18/30 (60.0%)	50/90 (55.6%)	NS
Billiary leak requiring repair	4/120 (3.3%)	0/30 (0%)	4/90 (4.4%)	NS
Diffuse intrahepatic stricturing	9/120 (7.5%)	5/30 (16.7%)	4/90 (4.4%)	<0.05
Presence of choledocholithiasis	17/120 (14.2%)	8/30 (26.7%)	9/90 (10.0%)	<0.05

Conclusions

This analysis demonstrates similar graft and patient survival for DCD liver recipients at 3-months, one- and two-years post-transplant when compared to our matched standard donor livers. The DCD group did have a higher rate of diffuse intrahepatic stricturing, biliary stone formation and first 30-day serum bilirubin.

Abstract# 337

HEPATITIS FLARES WITH EARLY PREDNISOLONE WITHDRAWAL AFTER LIVER TRANSPLANTATION FOR HCV. Gary P. Jeffrey[1,2], Edward Gane[1], Mee-Ling Yeong[1], Kai Chow[1], Peter Johnston[1], John McCall[1], Stephen Munn[1]. *[1]New Zealand Liver Transplantation Unit, Auckland City Hospital, Auckland, New Zealand; [2]Western Australian Liver Transplantation Service, Sir Charles Gairdner Hospital, Perth, Australia.*

The effect of early and rapid prednisolone withdrawal on HCV recurrence and progression following liver transplantation is debated. **Methods:** Patients with HCV infection who had a liver transplant performed by the New Zealand Liver Transplant Unit from 1998 to 2005 were studied to determine the effect of prednisolone withdrawal at four months post-OLT on the severity of HCV recurrence. 50 HCV patients who had OLT and 6 months follow up were reviewed retrospectively. Patients received prednisolone and tacrolimus. If patients received anti-HCV therapy data was censored at the start of treatment. **Results:** Fourteen of 50 (28%) patients had severe acute HCV recurrence (ALT >5x ULN) within 4 months of OLT. Twelve of 48 patients had a flare of ALT (>2x baseline) on prednisolone withdrawal and the ALT returned to baseline in only three. Severe progressive HCV (death, graft loss, liver failure, F3/F4 fibrosis) developed in 14 patients. Univariate analysis found severe acute HCV recurrence, non-resolved flare after prednisolone withdrawal, MP use and HCV genotype one as predictors of progressive HCV recurrence. HCV genotype one and non-resolved flares after prednisolone withdrawal remained independent predictors of progressive HCV using Cox regression. Non resolved flare after prednisolone withdrawal was also significantly associated with the presence of significant fibrosis (F2-F4) at 3 years post-OLT. **Conclusion:** 24% of patients experienced a flare of HCV with early prednisolone withdrawal. Three quarters of these did not resolve and this predicted severe progressive HCV and the presence of significant fibrosis three years after OLT.

Abstract# 338

INFLUENCE OF STEROIDS ON HCV RECURRENCE AFTER LIVER TRANSPLANTATION: A PROSPECTIVE STUDY. Marco Vivarelli[1], Patrizia Burra[2], Giuliano La Barba[1], Daniele Canova[2], Alessandro Cucchetti[1], Marco Senzolo[2], Maria Guido[2], Antonia D'Errico[3], Roberto Merenda[2], Daniele Neri[2], Umberto Cillo[2], Antonio D. Pinna[1]. *[1]Surgery and Transplantation, University of Bologna, Bologna, Italy; [2]Surgical and Gastroenterological Sciences, University of Padua, Padua, Italy; [3]Pathology Felice Addari, University of Bologna, Bologna, Italy.*

To assess whether long-term maintenance of low-dose steroids after liver transplantation (LT) could reduce the severity of recurrent hepatitis C, a prospective multicentric trial was carried out at the Transplant Centres of Bologna and Padua, Italy.

HCV positive, HBsAg negative adult candidates to a first liver transplant were considered eligible for the study. Main immunosuppressant was tacrolimus in all cases. Prednisone was given orally from the 6th postoperative (p.o.) day; patients were randomized into 2 groups:

1 group A: prednisone was tapered from 25 mg daily (p.o. day 6 to 30) to 15 mg (day 31 to 45), 10 mg (day 46 to 60), 5 mg (day 61 to 75), 2,5 mg (day 76 to 90) and finally withdrawn at day 91

2 group B: prednisone was tapered from 25 mg daily (p.o. day 6 to 30) to 15 mg (day 31 to 90), 10 mg (day 91 to 180), 7,5 mg (day 181 to 270), 5 mg (day 271 to 365), and 2,5 mg until the end of the second p.o. year.

Since September 2002, 47 patients entered the study; 8 of these patients were excluded from the analysis because of early p.o. death or graft loss (4 cases), switch from tacrolimus to a different immunosuppressant (3 cases) and de-novo hepatitis B (1 case). Of the remaining 39 patients 23 received short-term (group A) and the other 16 long-term (group B) steroids. Donor (age, graft macrovescicular steatosis, cold preservation time) and recipient (age, HCV genotype, HCV-RNA serum levels) characteristics were similar in the two groups. Median follow-up was 841 days (130-1376). 89 liver biopsies were performed, and every patient had at least one biopsy in the first p.o. year. Serum HCV-RNA were measured in all patients.

Histologically-confirmed HCV recurrence had similar incidence (95,6% in group A and 93.75% in group B) and timing (A: 177 days; B: 210 days). HCV-RNA levels were higher in group B. Histology 12 months after LT showed advanced fibrosis (grade 3 or 4) in 47.3% of the patients in group A versus 7.6 % in group B (P= 0.01). 2 patients in group A and 4 in group B received steroid boluses to treat acute rejection .

Slowly tapering off steroids reduced the progression of recurrent hepatitis C after LT.

Abstract# 339

REDUCING CALCINEURIN INHIBITION IN LIVER TRANSPLANT: 6 MONTH INTERIM DATA FROM A MULTI-CENTRE RANDOMISED CONTROLLED STUDY. J. M. Neuberger[1], A. D. Mayer[1], P. Neuhaus[2], J. Pirenne[3], D. Samuel[4], A. Rimola[5], the ReSpECT Study Group. *[1]Liver Unit, Queen Elizabeth Hospital, Birmingham, United Kingdom; [2]Virchow Clinic, University Hospital, Berlin, Germany; [3]Liver Unit, UZ Gasthuisberg, Leuven, Belgium; [4]Hepatobiliary Service, Paul Brousse Hospital, Villejuif, France; [5]Liver Unit, Hospital Clinic, Barcelona, Spain.*

Introduction: The introduction of calcineurin inhibitors significantly improved patient and graft survival after liver transplant. However side-effects, notably late onset renal failure, are a significant cause of morbidity and mortality. One of the strongest predictive factors for renal failure is the level of CNI in the first few months after transplant.

Methods: We performed a prospective study to determine whether lower levels and delayed introduction of tacrolimus would be safe and cause less nephrotoxicity. 525 adult patients undergoing a first liver transplant were randomised to one of three groups: A) tacrolimus at standard dose (target

trough blood level >10ng/ml) for the first month (n = 183); B) tacrolimus target level ≤8ng/ml and mycophenolate mofetil (MMF) 1g bid IV until Day 5, then 1g bid PO (n=170); C) daclizumab on Day 1 and Day 7, MMF as in B and tacrolimus, introduced on Day 5, target level as in B (n=172). Corticosteroids were given to all patients according to local protocol. The primary end-point is renal function at one year.

Results: Calculated glomerular filtration rate (GFR) was 103, 107 and 98 ml/min immediately before transplant in the three groups respectively and at 6 months was 81, 82 and 86 on an analysis of patients for whom complete 6 month data are available. Difference in change from baseline between groups A and B was not significant (p=0.227), but was significant between groups A and C (p=0.004). Dialysis was required by 14.5%, 7.7% and 6.5% of patients. During the first 6 months, mortality was 7.2%, 7.7% and 4.5% in each group: 34%, 23% and 21% of patients were withdrawn for other reasons. Rejection requiring bolus steroids was seen in 26.5%, 21.3% and 16.2% of patients but accounted for graft loss in none. Sepsis was seen in 5.0%, 7.2% and 7.8% and led to death in 1.2%, 2.6% and 1.9%. Diarrhoea was seen in 38 (21%), 46 (28%) and 38 (23%) of patients.

Conclusion: These findings await confirmation from full analysis at 12 months, but suggest that introduction of lower doses of tacrolimus can be safely delayed provided the recipient is given daclizumab and MMF in the immediate post-operative period.

Abstract# 340

PRIMARY TUMOR SITE AND LIVER SIZE ARE PREDICTORS FOR SURVIVAL AFTER LIVER TRANSPLANTATION FOR ENDOCRINE METASTASES. A 85-CASE FRENCH MULTICENTRIC REPORT.

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Introduction: Liver transplantation (LTx) for endocrine metastases remains controversial due to the lack of clear selection criteria.

Patients and methods: From 1989 to 2005, 85 patients underwent LTx for endocrine metastases in 17 centers. Mean age was 45 years. The primary tumor (PT) was located in the duodenum or pancreas (DP) in 40 cases, bronchial tree or digestive tract in 31 cases, and unidentified at the time of LTx in 14 cases. Liver involvement wich was retrospectively assessed by CT scan was > 40% in 55 % of cases. Hepatomegaly which was defined as explanted liver volume exceeding estimated standard liver volume by 20% or more was observed in 62% of cases. Octreoscan was performed in 58% of cases. The PT was removed before LTx in 66% of cases, while extrahepatic resection was performed concomitantly with LTx in 34 cases, including 7 with upper abdominal exenteration (UAE). R0 resection was achieved in 87% of cases.

Results: Postoperative death occured in 14% (2 to 157 days) after LTx. Five-year survival rate was 48%. Good prognostic factors according to univariate analysis included study period 95-05, location of the PT out the DP, PT resected before LTx, absence of hepatomegaly, octreoscan assessment, good differentiation, no UAE, no splenectomy, and R0 resection. Independent factors of poor prognosis according to multivariate analysis included PT located in DP (Hazard Ratio: 3,32), UAE (HR: 3,27), hepatomegaly (HR: 2,62), and non-removal of PT before LTx (HR: 2,35). After exclusion of UAE cases the remaining poor prognostic factors were PT located in DP (HR: 3,06) and hepatomegaly (HR: 2,98). Five-year survival rate was 12% for the 23 patients presenting both factors vs 68% for the 55 presenting one or neither factor (p<10-7).

Conclusion: Patients presenting endocrine metastases from duodenopancreatic tumor in association with enlarged liver are poor indications for LTx.

Abstract# 341

EXTENSION OF MILAN CRITERIA TO 5-5 CRITERIA DOES NOT IMPACT SURVIVAL NOR HCC RECURRENCE AFTER LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA.

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Background: On analysis of survival of pts transplanted for HCC between 1988 and 1998 in France, a moderate expansion of Milan criteria to tumors to 5 in number and diameter of the largest nodule equal 5cm, the 5-5 criteria had no impact on 5-year survival (61% vs 55%, p=0.2).

AimTo reassess the results of these expanded criteria on a recent cohort of pts transplanted for HCC.

Patients & **Methods:** Retrospectively 168 patients transplanted between January 1999 -December 2001 for HCC without venous obstruction in 7 centers comprised 133 Milan+ pts, and 35 Milan negative 5-5 positive patients. The survival and recurrence rates and the tumor features of these 2 groups were compared.

Results: The 5-year survival was similar in the Milan+ and 5-5 pts (79.5% vs. 80.0%, p=0.46), with no difference in HCC recurrence between the 2 groups (8.9% vs. 11.8% p=0.26) despite these significant differences between pre-LT tumours characteristics: pre-LT number of nodules: 1.6±0.8 vs. 3.2±1.2, p<0.0001, largest nodule diameter: 2.4±0.9cm vs. 3.5±1.0 p<0.0001, sum of diameters: 3.2±1.3 vs. 6.2±1.4, p<0.0001. On liver explants, all these criteria were comparable between the 2 groups, the prevalence of well differentiated tumors and the rate of micro-vascular invasion (64% vs 63%=0.88) (24.8% vs 32.3%, p=0.54). Only micro-vascular invasion (p=0.04, OR 7.8) and degree of differentiation (p=0.03, OR=12.4) independently impacted recurrence. The independent factors related to mortality were age (p=0.028, OR=1.1) and degree of differentiation (p=0.003, OR=7.0).

Conclusion: Expansion of transplantation criteria for HCC to 5-5 criteria does not impact tumour recurrence and confers post-transplant survival of 80%, comparable to Milan positive patients. Duvoux et al. AASLD 2005.

Abstract# 342

FACTOR V IS LESS THROMBOPLASTIN (TBP) DEPENDANT THAN INTERNATIONAL NORMALIZED RATIO (INR) AND IS A SIGNIFICANT PREDICTOR OF WAITLIST MORTALITY.

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INR was introduced to monitor prothrombin time in patients (pts) on oral anticoagulation but has been much less validated to assess severity of coagulopathy in liver disease. Recent data showed that results of INR and MELD significantly differ according to the type of TBP used. **Goals**: to investigate whether factor V activity (FV): 1) is less TBP-dependant than INR and 2) is useful to predict 3-month mortality in pts with cirrhosis listed for liver transplantation (LT). **Methods**: INR and FV were measured in the same blood sample from 45 cirrhotics listed for LT utilizing 4 TBP's of different origin and sensitivity, as defined by their International Sensitivity Index (ISI). Prognostic accuracy of FV was assessed in 277 pts with cirrhosis listed for LT of which 27 died (9.7%) and 250 remained alive after 3 months of follow-up. Statistical analysis included Friedman and Dunn's multiple comparison tests, logistic regression and c-statistic. **Results**: Median values (25-75 percentiles) of FV, INR and MELD obtained with the 4 TBP's are shown in the table. INR and MELD significantly differed (p<0.001) when using different TBP's (TBP-1 vs. 2; TBP-2 vs. 3 and TBP-4 vs. 1, 2 and 3). In contrast, FV activity was similar in all groups (p=0.481) irrespective of the TBP used (table). The c-statistic for FV was 0.76 and the odd ratio (95% CI) 0.95 (0.93-0.97, p<0.001). Mortality increased by 5% for each 1% decrease of FV. C-statistics were 0.92 for MELD, 0.92 for MELD after replacing INR for FV and 0.92 for MELD after adding FV. **Conclusions**: FV appears to be a more reproducible coagulation parameter than INR because it is not TBP-

dependant and its activity is not modified by vitamin K deficiency or oral anticoagulation. Despite being a significant predictor of 3-month mortality in cirrhotics listed for LT, inclusion or addition of FV to the MELD formula did not increase it's prognostic accuracy which in our series was extremely high (c-statistic of 0.92).

	TBP-1 (ISI:1.31)	TBP-2 (ISI:0.93)	TBP-3 (ISI:1.03)	TBP-4 (ISI:2.22)	p value
FV (%)	59 (45-74)	56 (44-79)	62 (45-77)	64 (42-81)	0.481
INR	1.4 (1.2-1.6)	1.3 (1.2-1.4)	1.4 (1.2-1.6)	1.5 (1.3-1.8)	<0.001
MELD	15 (11-20)	15 (11-19)	16 (12-20)	16 (13-21)	<0.001

Abstract# 343

AGE RELATED INCIDENCE OF ACUTE CELLULAR REJECTION IN PAEDIATRIC LIVER TRANSPLANTATION.

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Introduction and aims: Acute cellular rejection (AR) after liver transplantation is a significant problem that may affect patient and graft outcome. Our aims were to determine the age-related incidence of AR in children within 6 weeks of liver transplantation, to evaluate risk-factors, and to examine impact on patient and graft survival.

Methods: A retrospective review of the medical records of 372 children (184 male, median age 3.3 years, range 0.02-18.6) transplanted at a single paediatric hepatology centre between 1988 and 2000 was performed. Pre-transplant diagnoses were: acute liver failure (44), biliary atresia (133), metabolic liver disease (39), progressive intrahepatic cholestasis (27), alpha-1-antitrypsin deficiency (23), Alagille syndrome (21), cryptogenic cirrhosis (20), hepatic malignancy (17), autoimmune liver disease (14), cystic fibrosis (7), other (27). The initial immunosuppression was: ciclosporin, prednisolone and azathioprine (83%). From 1995 children with acute liver failure, short bowel syndrome, hepatoblastoma or re-transplants were given tacrolimus and prednisolone (12.5%). AR was suspected with elevated liver enzymes and confirmed by liver biopsy. Age-related incidence of AR within 6 weeks of transplantation was assessed, and other risk- factors were evaluated using Cox regression.

Results: Incidence of AR within 6 weeks of transplantation: 50%. Median time to AR: 8 days (range 2-42).

Age (months)	n	n - AR	% - AR
<1	6	1	17
1-6	83	46	55
6-24	57	37	65
24-120	144	75	52
<120 (total)	290	159	55
>120	82	27	33 *p=0.001

Age <10years have a significantly increased risk of AR within 6 weeks of transplantation. Other significant independent risk factors were: chronic liver disease (p=0.002), pre-transplant INR<2 (p=0.001), and absence of encephalopathy (p=0.011). Factors analysed but not significant were: recipient gender, race, diagnosis, nutritional status, ascites, varices, bleeding; pre-transplant GGT, AST or bilirubin level; graft cold ischaemia time, gender match, blood group compatibility; donor age or cause of death. Developing AR within 6 weeks of transplantation was associated with a lower mortality (p=0.002), but was not with longer graft survival (p=0.197).

Conclusion: Children over 10 years old or those with acute liver failure had a lower risk of AR within 6 weeks of transplantation than younger children, or those with chronic liver disease.

Abstract# 344

PROMINENT MIGRATION OF IL-10 PRODUCING DONOR DENDRITIC CELLS INTO THE RECIPIENT AFTER LIVER – BUT NOT AFTER KIDNEY TRANSPLANTATION: IMPLICATIONS FOR TOLERANCE INDUCTION?

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The role of chimerism in tolerance induction after transplantation is still under debate. Since dendritic cells (DC) are the most potent antigen-presenting cells, chimerism of these cells is likely to regulate the balance between tolerance and rejection. We compared DC chimerism after liver transplantation (LTx) and kidney transplantation (RTx), and studied the functional properties of DC that detach from liver grafts during pre-transplant perfusion.

Materials and Methods. The presence of donor $CD1c^{+}CD20^{-}$ DC in blood of transplant recipients was established by flowcytometric analysis using HLA-A2 mismatches between donor and recipient. DC were isolated from liver graft perfusates collected at the end of the cold storage period (n=7), and from blood of healthy individuals (n=7), and their cytokine production and allogeneic T-cell stimulatory capacity were compared.

Results. In liver graft recipients (n=11) donor DC made up 4.2% (range 0.0-18.1%) of total circulating DC on day 1, and 0.6% (range 0.0-1.3%) on day 5 post-LTx. In contrast, on day 1 post-RTx (n=6) only 0.3% (range 0.0-1.1%) of circulating DC were of donor origin (LTx versus RTx: p=0.015). During pre-transplant perfusion high numbers of donor DC (0.9×10^6; range $0.1\text{-}4.5 \times 10^6$) detached from liver grafts. Freshly isolated liver perfusate DC were able to stimulate allogeneic T-cell proliferation. Upon stimulation with LPS, liver DC produced significantly higher amounts of IL-10 than blood DC (1.9±0.6 versus 0.15±0.05 ng/ml: p=0.006), but no IL-12. Likewise, upon stimulation with poly (I:C) and IFNγ liver DC produced 19 times more IL-10 (1.3±0.8 ng/ml) than IL-12 (0.07±0.03 ng/ml; p= 0.029), while blood DC produced low amounts of both cytokines (0.1±0.07 and 0.09±0.04 ng/ml, respectively; p=0.47).

Conclusion. After LTx, but not RTx, considerable numbers of donor-derived DC migrate from the donor graft via the blood circulation into the recipient. These DC strongly produce the immune-regulatory cytokine IL-10, but very little of the T-helper1 driving cytokine IL-12. Migration of these donor DC may contribute to lower immunogenicity of liver grafts in comparison with kidney grafts.

Anesthesia / Critical Care

Abstract# 345

INFLUENCE OF INTRAOPERATIVE APROTININ ON INCIDENCE OF EARLY HEPATIC ARTERY THROMBOSIS.

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INTRODUCTION:

Hepatic artery thrombosis (HAT) is a potentially fatal complication following liver transplantation, and frequently requires urgent re-transplantation.

Aprotinin, a serine protease inhibitor with antifibrinolytic activity, is often used to reduce blood loss during liver transplantation in patients with an increased risk of major haemorrhage.

In a recent study, aprotonin administered during coronory artery bypass grafting demonstrated an increased incidence of coronary graft thrombosis.

Our study aimed to determine whether use of aprotinin is associated with a higher incidence of early HAT.(within three weeks of transplantation)

METHOD:

Prospective data of all patients undergoing liver transplantation from 1993 to 2006 was collected. Transplants were performed using veno-venous bypass, using the classical cavo-caval anastomosis technique in most patients. Where administered, a bolus of 0.5 to 1.0 M KIU of aprotinin was given as a loading dose, followed by an infusion of 0.2 to 0.5 M KIU h^{-1} for the duration of surgery. The data was retrospectively analysed.

RESULTS:

From 1993 to 2006, 503 liver transplants were performed, in 446 patients. Twenty four patients suffered HAT within 3 weeks of transplantation (5.6%).

Aprotinin was administered in 195 of these operations. HAT occured after 11 of these (5.6 %).Of those 308 operations where aprotinin was not used, 31 (10.1 %) developed HAT.

Of the 446 first time transplants, 170 received intraoperative aprotinin. Of these, 7 (4.1%) developed early HAT. Of the 276 who did not receive aprotinin, 15 (5.4%) developed early HAT.

69 aortic conduits were performed in the 503 liver transplants,57 of which were in those undergoing their first transplant . None of these patients developed early HAT.

CONCLUSIONS:

Intraoperative administration of aprotinin during liver transplantation was not associated with an increased incidence of HAT. The incidence of HAT was higher in our patients amongst those who did not receive aprotinin.

DISCUSSION:

Our data strongly suggests that the intraoperative administration of aprotinin during liver transplantation is not associated with an increased incidence of HAT.

The fact that administration of aprotinin appeared to reduce the risk of HAT may be partly explained by its efficacy in reducing blood loss resulting in a lesser requirement for platelets, fresh frozen plasma or other pro-coagulants, which may in themselves be causative factors in the genesis of HAT, although data on this are lacking.

Abstract# 346

DEFINING HYPERCOAGULABILITY IN ORTHOTOPIC LIVER TRANSPLANTATION – A RETROSPECTIVE ANALYSIS OF THROMBOELASTOGRAPH DATA.

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Intraoperative cardiopulmonary thromboembolism is a potentially fatal complication of liver transplantation (OLT)[1].A review of 20 cases occurring during OLT found that at the time of the event Thromboelastograph® (TEG®) traces were hypercoagulable despite hypocoagulable conventional coagulation tests[2].

We reviewed the TEG® data from 150 consecutive patients undergoing OLT during the period 2003-2006 to determine the prevalence of hypercoagulability at different stages of OLT and whether it correlates with the underlying disease process.

Methods

Paired TEG® traces (native and with heparinase) were examined at 5 stages:

1- Baseline, 2- Dissection, 3- Anhepatic period, 4- Reperfusion, 5- End

Hypercoagulability was defined in 4 ways:

1 Shortened R + K time [3]

2 Increased Maximum Amplitude (MA) [4]

3 Shortened r-time, increased MA, broadened angle [5]

4 Increased clot strength (dynes/cm2) [6]

Results

Overall Prevalence of Hypercoagulability in Native Heparinase (NH) traces (%)

	Baseline	Dissection	Anhepatic	Reperfusion	End
Shortened R + K time	6	11.3	14	4	8.6
Increased MA	18	10	3.3	4	4.6
Shortened R,increased MA, broadened angle	4	1.3	2	0.6	1.3
Increased clot strength	18	12	11.3	6.6	6

The prevalence of hypercoagulability during OLT varies according to the definition used and the stage of the procedure, and can be masked by a heparin effect.

Prevalence (%) of hypercoagulability in non-cholestatic and cholestatic patients

	Shortened R + K		Increased MA	
	Non-Cholestatic n=120	Cholestatic n=30	Cholestatic n=120	Cholestatic n=30
Baseline	6.7	3.3	10.8	46.7
Dissection	10.8	13.3	7.5	20.0
Anhepatic	16.7	3.3	2.5	6.7
Reperfusion	5.0	0.0	2.5	10.0
End	10.0	3.3	2.5	13.3

There appear to be two distinct types and patterns.A short r + k time, reflecting plasmatic hypercoagulability increases from baseline and is maximal during the anhepatic stage.

An increased MA, which may reflect platelet hyperreactivity, is maximal at baseline where it is present in nearly half of all patients with cholestatic liver disease compared to only 10.8% of non-cholestatic patients ($p<0.0001$). The clinical significance of hypercoagulable TEG® variables during OLT remains to be determined.

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Abstract# 347

ACCURACY OF STRESS ECHOCARDIOGRAM (S-ECHO) AND CAROTID DUPLEX ULTRASOUND (C-DU) IN HIGH RISK LIVER TRANSPLANT (OLT) CANDIDATES WHO UNDERWENT CORONARY ANGIOGRAM (CA).

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Coronary artery disease (CAD) increases morbidity and mortality after OLT. Optimal non-invasive screening for CAD in OLT patients (pts) remains undefined and therefore CA is still the standard of care in many centers. **Goal**: to assess the sensitivity (S), specificity (Sp) positive and negative predictive values (PPV/NPV) and diagnostic accuracy (DA) of S-ECHO and C-DU in OLT candidates who underwent CA. **Methods**: From 1996 to 2006, CA was obtained by protocol in pts with known history of CAD (Group 1, n=19) and pts with no history of CAD aged >60 yrs or <60 yrs with risk factors such as diabetes, hypertension, smoking and family history (Group 2, n= 131). CAD was graded as mild, moderate or severe according to the degree of stenosis (<30%, 30%-70% and >70% respectively) in at least one epicardial artery on CA. C-US was considered abnormal for any degree of stenosis. **Results**: Overall prevalence of CAD was 23% (35/150), 100% in Group 1 (CABG 5, coronary stenting 4, angina 10) and 12% (16/131) in Group 2 (20% (5/25) in >60yrs without risk factors; 13% (7/54) in >60 yrs with risk factors and 8% (4/52) in <60 yrs with risk factors. Results of S-ECHO (n=113) and C-DU (n=104) in pts from Group 2 is described in the table. Twelve of 113 pts from Group 2 (11%) had abnormal CA (mild 8, moderate 2, severe 2) with negative S-ECHO. Excluding the 8 pts with mild coronary stenoses the DA of S-ECHO for moderate/severe CAD increased from 85% to 93%. Of note, 5 of these 12 pts (42%) had positive C-DU. Four of 104 pts of Group 2 (4%) had mild stenoses on CA with negative C-DU. Excluding these 4 pts, the DA of C-DU for moderate/severe CAD increased from 77% to 82%. The major limitation of C-DU was the high rate of false-positive results when compared to CA (17/104, 16%). **Conclusions**: Pts aged >60 years, with or without risk factors, have a significant prevalence of CAD. Although not perfect, S-ECHO is a useful non-invasive test, especially for moderate/severe CAD. Our data suggest that C-DU may help identifying some pts with CAD and negative S-ECHO which may require CA.

	S (%)	Sp (%)	PPV (%)	NPV (%)	DA (%)
S-ECHO	20	96	43	89	85
C-DU	69	81	37	95	80

Abstract# 348

HEPATOPULMONARY SYNDROME (HPS): A PROSPECTIVE STUDY ON THE PROGRESSION OF HIPOXEMIA.

Rita C. M. A. da Silva[1], Elizabete de Melo[1], Maristela Deberaldini[1], Paulo C. Arroyo, Jr.[1], William J. Duca[1], Helen C. C. Felicio[1], Jose A. Cordeiro[1], Renato da Sila[1]. [1]*Surgery and Liver Transplant Unit, Faculty of Medicine of Sao Jose do Rio Preto, Sao Jose do Rio Preto, Sao Paulo, Brazil.*

Study purpose: Our aim was to determine the probability of developing hypoxemia in cirrhotic patients with intrapulmonary vasodilatation over two years. **Patients and Method**: Forty-two transplant candidates who underwent contrast-enhanced echocardiography (CEE) were analyzed, being 26 with IPVD as study group, and 16 without IPVD taken as control group. They were prospectively studied and the $Pa0_2$ and DA-aO_2 were measured at the start and at the end of 12 and 24 months. **Results:** There was no difference among the study and control group regarding to Child-Turcot-Pugh score, gender and age, at the beginning of the study. T test showed that the mean PaO_2 e DA-aO_2 were not different between the groups at basal level (88,2 X 90,6; p value =0,52 and 23,3 X 18,39; p value =0,21), however, the mean PaO_2 was lower on the study group comparing to control group at 12 month (80,7 X 93,5; valor p = 0,0005) and at 24 month (73,9 X 88,56; p=0,010). Fisher test showed that there was a higher proportion of individuals presenting PaO_2 < 80 mmHg on the study group comparing with control group at 12 (11xO; p=0.002) and 24 month (7x0; p=0.04). The Kaplan-Meier estimated ratio for the occurrence of PaO_2 < 80mmHg in the study group at 12 and 24 month was 54%; 95% IC: 26-65 and 53%; 95%IC 33-80 respectively, and for the appearance of PaO_2 < 70mmHg at 12 month and 24 month 19%; 95% IC: 4-34 and 41%; 95% IC: 17-65, respectively. The estimated occurrence of severe hypoxemia PaO_2 < 60mmHg at 12 month was 12%; 95% IC 0-24.

Conclusion: We demonstrated a progressive course of hypoxemia in cirrhotic patients with IPVD. Identification of progressive hypoxemia can lead to a better understanding of the hepatopulmonary syndrome natural history and will be helpful to optimize timing and to predict outcomes of liver transplantation.

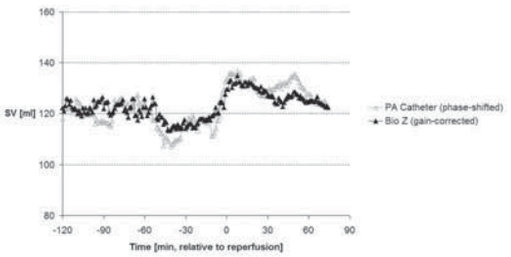
Abstract# 349

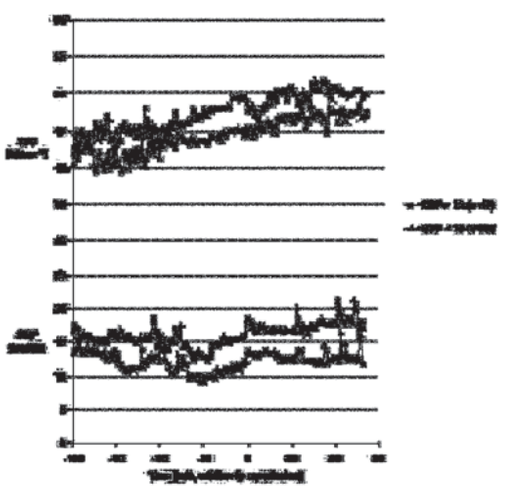
UTILITY OF NONINVASIVE IMPEDANCE CARDIOGRAPHY DURING ORTHOTOPIC LIVER TRANSPLANTATION. Wolf H. Stapelfeldt[1], Timothy S. Shine[2], Alfredo Queveda-Vela[1], Jonathan Pabalate[1], Mark Welliver[1]. *[1]Anesthesiology, University of Florida, College of Medicine, Jacksonville, FL, USA; [2]Anesthesiology, Mayo Clinic, Jacksonville, FL, USA.*

Previous studies demonstrated the significance of intraoperative cardiac stroke volume (SV) on patient and graft survival as well as the impact of pulmonary edema formation on the feasibility of early extubation following orthotopic liver transplantation (OLT). The present study was designed to evaluate the possible role of noninvasive impedance cardiography (ICG) in guiding the perioperative management of OLT patients

Methods: Invasive continuous thermodilution PA-catheter (CO, SV, CVP, using Abbott QVUE® CCO) and noninvasive ICG (SV, TFC [thoracic fluid capacity], using Cardiodynamics BioZ® ICG) derived parameters were simultaneously recorded in 39 adult OLT patients at a one-minute resolution over a period starting 120 minutes before until 90 minutes after graft reperfusion. SV data from both sources were analyzed for correlation, as was the relationship between CVP and TFC readings. P-values ≤ 0.05 were considered significant

Results: SV changes from both sources showed a significant correlation after phase correction for a delayed response of PA-catheter-derived measurements by 13 min and a gain amplification of ICG-derived measurements by a factor of 1.52 (Figure 1). TFC readings showed a universal increase and correlated with the average intraoperative CVP ($p<0.05$, Figure 2). One patient with an elevated TFC > 50 $kOhm^{-1}$ exhibited florid intraoperative pulmonary edema.





Conclusion: ICG permits the continuous, non-invasive assessment and detection of critical changes in cardiac performance or pulmonary fluid status in real time over the course of OLT. It may obviate the need for routine PA catheter insertion in non-portopulmonary hypertensive (PPHT) patients undergoing OLT.

Abstract# 350

A PROTOCOL FOR TREATMENT OF INTRACRANIAL HYPERTENSION IN ACUTE LIVER FAILURE. Robert Raschke[1], Silke Rempe[1], Steve Curry[3], Richard Manch[2]. *[1]Critical Care, Banner Good Samaritan Medical Center (BGSMC), Phoenix, USA; [2]Hepatology, BGSMC, Phoenix, USA; [3]Toxicology, BGSMC, Phoenix, USA.*

Purpose: Intracranial pressure (ICP) monitoring has been recommended to guide therapy of intracranial hypertension (ICH) in patients with acute liver failure (ALF). However, the effectiveness of this therapy is unproven. The aim of our study was to determine the efficacy of an aggressive ICH treatment protocol.

Methods: We developed an evidence-based treatment protocol that included hyperventilation, mannitol, rapid induction of hypothermia, pentobarbital, and management of cerebral perfusion pressure (CPP). Patients with ALF and grade 3 or 4 encephalopathy were eligible. All patients were managed using a standardized order set. A Codman Microsensor® ICP monitor was placed, and an episode of ICH was defined as an ICP ≥ 20mmHg of ≥ 20mins duration. An intensivist rapidly implemented the protocol for each ICH episode until the ICP fell below 20mmHg, or the patient succumbed.

Results: Twenty-two patients were enrolled between May 2004 and Oct 2006. ICP monitors were in place for a mean duration of 149 +/- 147 hours. Eighty-two discrete episodes of ICH occurred in 21 patients, with a mean peak ICP of 33 +/- 13 mm Hg and a median duration of 60 minutes. Hypothermia was implemented or maintained during 71 ICH episodes, achieving a core temperature of 32.6 +/- 1.8 °C. Mannitol was used in 53 episodes with a mean dose of 56 +/- 37g, and pentobarbital was used in 43 with a mean cumulative dose of 740 +/- 815 mg. Active CPP management was required in 36 episodes, resulting in a CPP of 69 +/- 15 mm Hg. Hyperventilation was used 24 times resulting in an arterial pCO_2 of 30 +/- 4 mmHg. Relief of abdominal compartment syndrome was required to treat ICH in 4 patients. Seventy-eight ICH episodes (95%) resolved with treatment and only 1 was refractory to the extent that it might have excluded the patient from transplantation. Eleven of 17 (65%) transplant candidates who developed ICH survived, ten with a good neurological outcome. No patient in our study died from cerebral herniation.

Conclusions: Our ICH treatment protocol was highly effective in lowering ICP. Although a direct clinical benefit cannot be determined by our case series, 10 patients with ICH responded to therapy and made full neurological recovery. Our results compare favorably with previous reports, possibly because our protocol involved more aggressive use of hypothermia and pentobarbital.

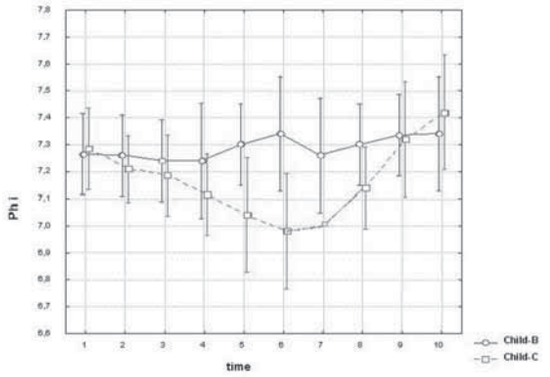
Abstract# 351

DIFFERENT PATTERN OF SPLANCNIC PERFUSION BY GASTRIC TONOMETRY IN CIRRHOTICS PATIENTS IN RELATION TO THE CHILD STATUS. Valter Perilli[1], Alfonso W. Avolio[2], Salvatore Agnes[2], Rita Gaspari[1], Nunzia Martella[1], Maria T. Cazzato[1], Liliana Sollazzi[1], Marco Castagneto[2]. *[1]Dpt of Anesthesia and Intensive Care, "A. Gemelli" Catholic University, Rome, Italy; [2]Dpt of Surgery-Transplantation Service, "A. Gemelli" Catholic University, Rome, Italy.*

Gastric intramucosal CO_2, measured by gastric tonometry, has proven to be a useful marker of tissue dysoxia. In liver transplantation (LTx), the knowledge of splancnic perfusion is useful, particularly during the anhepatic phase, even with the use of portal bypass. The aim of this study was to evaluate splancnic perfusion in cirrhotic patients undergoing LTx by means of gastric tonometry.

Patients and Methods. 20 consecutive adult cirrhotic patients were studied. There were 8 Child B and 12 Child C patients. A veno-venous bypass was used. Splancnic perfusion was evaluated by automated air gastric tonometry (Tonocap, Datex, Engstrom). Data were collected at standard times (namely, during hepatectomy: times 1-4; during anhepatic period: times 5-7; during post reperfusion: times 8-10). Statistical evaluation was performed by ANOVA.

Results. In Child B patients, changes in pHi were not observed. In Child C patients, a significant decrease in pHi was observed during hepatectomy ($p<0.05$). A further decrease in pHi was recorded at the end of the anhepatic period (phase 7, interruption of portal bypass), with return to initial values at the end of the procedure.



Discussion. Tonometry data showed an impaired splancnic perfusion during hepatectomy in Child C patients, although systemic hemodinamic parameters remain stable. Gastric tonometry is a suitable method for monitoring splancnic perfusion during liver transplantation.

Abstract# 352

ALBUMIN DIALYSIS USING MARS: AN EFFECTIVE TREATMENT FOR PATIENTS WITH DIFFUSE CHOLANGITIS AND REFRACTORY PRURITUS WHILE AWAITING FOR RETRANSPLANTATION. Claire Francoz[1], Rodolphe Sobesky[1], Catherine Paugam-Burtz[2], Daniele Sommacale[1], Federica Dondero[1], Jacques Belghiti[1], Dominique Valla[1], Francois Durand[1]. *[1]Hepatology and Liver Transplant Unit, Hospital Beaujon, Clichy, France; [2]anesthesiology and intensive care unit, Hospital Beaujon, Clichy, France.*

Backgrounds/aims: Albumin dialysis has been proposed in patients with acute or acute-on-chronic liver failure. Preliminary reports also suggest that albumin dialysis may be efficacious for treating severe pruritus in patients with cholestatic diseases. The aims of this study were to investigate the tolerance and efficacy of MARS for treating refractory pruritus in patients with diffuse cholangitis awaiting for retransplantation. **Patients and methods**: Four consecutive patients with either chronic rejection or diffuse ischemic cholangitis and refractory pruritus were included. All were listed for retransplantation. The patients underwent two 8-hour MARS sessions during 2 consecutive days. The severity of pruritus was assessed using an analogic scale ranging from 0 (no pruritus) to 10 (unbearable pruritus) immediately before and after each MARS session. Pruritus was also assessed at one month.**Results**: In all patients, MARS was highly efficacious with an almost complete resolution of pruritus (Table). Hemodynamic tolerance was good and none of the patients required vasopressive agents or red blood cell transfusion. There was a significant decrease in serum bilirubin and serum bile acids after the second session. Two patients had 2 additional MARS sessions, 33 and 94 days after the first sessions, respectively, due to recurrence of severe pruritus. These additional sessions were also followed by an almost complete resolution of pruritus. Three patients underwent retransplantation 6 to 112 days after the first MARS session. The fourth patient died 41 days after the first session due to septic shock. **Conclusion**: The results of this study suggest that albumin dialysis using MARS is efficacious for treating refractory pruritus in patients with chronic rejection and/or diffuse ischemic cholangitis while awaiting for retransplantation. The beneficial effects of MARS on pruritus may last as long as 3 months. In patients with recurrence of severe pruritus, additional session may also be efficacious.

pruritus	preMARS	postMARS (day1)	postMARS (day2)	day 30
patient 1	6.2	1.7	0	9.2
patient 2	8.3	2.4	1.3	3.4
patient 3	7.2	4.2	1.7	2.6
patient 4	8.7	0.4	0	-

Abstract# 353

PREDICTORS OF POSTREPERFUSION HYPERKALEMIA IN ADULT LIVER TRANSPLANTATION: THE IMPACT OF DONORS. Victor W. Xia[1], Ke-Qin Hu[3], Jonathan R. Hiatt[2], Ronald W. Busuttil[2], Randolph H. Steadman[1]. *[1]Anesthesiology, UCLA, Los Angeles, CA, USA; [2]Surgery, UCLA, Los Angeles, CA, USA; [3]Gastroenterology, UCI, Orange, CA, USA.*

Although postreperfusion hyperkalemia is a well-known intraoperative complication in patients undergoing orthotopic liver transplantation (OLT), its predictors, especially those relate to liver donors, have not been thoroughly evaluated. After IRB approval, we retrospectively studied the medical records of all patients (≥ 18 yr) who underwent OLT at our medical center between 1998 and 2004. Hyperkalemia was defined as serum $K^+ \geq 5.5$ mmol/L and postreperfusion was divided into early postreperfusion period (EPP, the first 15 min) and late postreperfusion period (LPP, from the second hr to the end of surgery). A total of 46 variables were analyzed. Independent predictors were confirmed by multivariate step-wise logistic regression. This study included 1124 patients. Hyperkalemia occurred in 215 (19.1%) patients in the EPP and 115 (10.2%) patients in the LPP. Higher baseline K^+ was a consistent predictor of hyperkalemia in both EPP and LPP (Table). Lower urine output and the use of venovenous bypass were associated with hyperkalemia in the LPP. Three donor-related preditors were identified: donation after cardiac death (associated with hyperkalemia in the EPP); longer warm ischemia time and donor hospital stay (associated with hyperkalemia in the LPP). In conclusion, this large retrospective study identified several independent predictors, including three that relate to donors, of postreperfusion hyperkalemia and the findings provide useful information for possible early interventions.

Results of multivariate step-wise logistic regression

Early Postreperfusion	Odd Ratio	95% CI	P Value
Baseline K+ < 3.5	0		
Baseline K+ 3.5-3.9	1.7	0.9-8.4	0.095
Baseline K+ 4.0-4.4	2.3	1.2-4.4	0.012
Baseline K+ ≥4.5	6.4	3.4-12.1	<0.001
Donation after cardiac death	3.2	1.2-8.4	0.021
Late Postreperfusion			
Baseline K+ < 3.5	0		
Baseline K+ 3.5-3.9	1.7	0.3-8.7	0.528
Baseline K+ 4.0-4.4	7.8	1.7-34.9	0.008
Baseline K+ ≥4.5	21.7	4.9-96.1	<0.001
Warm ischemia time > 50 min	3.3	1.7-6.4	0.001
Urine output < 500 mL	3.1	1.6-5.9	0.001
Venovenous bypass	8.6	2.0-37.2	0.004
Donor hospital stay > 5 d	2.5	1.3-4.9	0.009

Surgical Techniques / Complications

Abstract# 354

INTRAOPERATIVE PORTAL VEIN STENTING: A SIMPLE METHOD FOR SEVERE PORTAL VEIN STENOSIS IN LIVING DONOR LIVER TRANSPLANATION. ChulSoo Ahn[1], SungGyu Lee[1], KwangMin Park[1], Shin Hwang[1], KiHun Kim[1], Deokbog Moon[1], TaeYong Ha[1], GiWon Song[1], Kimyung Moon[1], Bumsoo Kim[1], DongHwan Jung[1], HyoJun Lee[1], JeongIk Park[1], JeHo Ryu[1]. *[1]Department of Surgery, Division of Hepatobiliary Surgery and Liver Transplantation, Asan Medical Center, Seoul, Korea.*

In cirrhotic liver, portal thrombosis or stricture, which preclude portal flow and make collateral veins, are not uncommon due to the portal hypertension. But maintaining the adequate portal flow is essential for initial graft function and its regeneration after living donor liver transplantation(LDLT). Usually thrombectomy or venoplasty is applied to improve portal flow and easy anastomosis, but it may be insufficient if the luminal narrowing is located at more proximal portion. In that case, we placed portal vein stents intraoperatively to keep the portal vein wide.

After the explantation of diseased liver, we examined the portal stump, if the lumen was narrowed we have performed thrombectomy or venoplasty. Direct portogram was taken through inferior mesenteric vein just after the anstomosis and reperfusion of the graft and intraportal stents was inserted. We applied balloon dilatation when the lumen was not fully expanded after stenting. Some of collaterals of portal vein were also embolized during portogram, to prevent portal flow steal.

From Jan.2004 to Nov.2006, 615 adult to adult living donor liver transplantations were performed in Asan Medical Center. In 114 cases(18.5%), portal vein thrombosis or stricture were detected. We did direct portograms in 20 cases(3.2%). The patients were 14 men and 6 women. The underlined

disease were hepatitis B associated cirrhosis in 14, alcoholic cirrhosis in 3, others in 3, and 8 of them had hepatomas. In three cases, we did only portogram without stenting, and we inserted 20 stents(metallic stent diameter 1cm, length 4-8cm) in 17 cases. Balloon venoplasty was applied in 6 cases, which showed severe narrowing after stent insertion. Coil embolization of coronary vein was performed in one case. The median follow up period was 20 months(1-34 months), and all patients has good portal flow until now except one case who expired at postoperative10 month due to the intracranial hemorrhage.

In conclusion, in the case of severe portal vein stenosis, intraoperative stent insertion can be a simple and good solution to get sufficient portal flow to the transplanted graft.

Abstract# 355

MICROVASCULAR RECONSTRUCTION OF HEPATIC ARTERY: PERSONAL EXPERIENCE ON 300 CASES.

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Aim: Live donor liver transplantation (LDLT) has emerged to overcome the scarcity of cadaveric organs. Although more than 7000 LDLTs have been performed worldwide, many important aspects specific to this procedure including microsurgical reconstruction of hepatic artery are still inadequately documented. This is one of the most important part of LDLT because hepatic arterial thrombosis (HAT) may cause fatal complications requiring retransplantation and can even result in death. Today, microsurgical technique has minimized the risk of HAT. The aim of this study is to demonstrate the safety and efficacy of microvascular hepatic artery reconstruction in LDLT and point out the difficulties of the operation based on 300 consecutive cases.

Patients and methods: From June 1999 to October 2006, 300 LDLTs (53 children, 247 adults) were performed at Ege University Organ Transplantation Center. Anastomoses were completed with interrupted sutures with 9-0 or 10-0 polyamide sutures. The diameters of both recipient and graft arteries were measured. 84 % of graft arteries and 57 % of recipient arteries were equal to or less than 2 mm. in diameter. Median anastomosis time was 50 minutes. Back-wall first anastomosis technique used in almost all cases.

Results: HAT was encountered in 3 cases in these series (1 %). Two thromboses were in the first five transplantations. However, these failures were not the result of technical error but were related to severe hypotension following completion of anastomosis, due to esophageal variceal bleeding in one case and hemo-pneumothorax in the other case. These two patients succumbed to death following these complications. The third HAT occurred from a branch that was close to the anastomosis and that had not been ligated proximally. This patient recovered following immediate thrombectomy and reanastomosis.

Conclusion: The graft artery should be anastomosed to the recipient artery with delicate manipulation of these vessels facilitated by microsurgical methods with the best position under a surgical microscope to overcome the high risk of HAT and arterial complications during LDLT.

Abstract# 356

HIGH PORTAL FLOW AND LOW HEPATIC ARTERY BUFFER RESPONSE IS ASSOCIATED WITH EARLY BILIARY ANASTOMOTIC STRICTURES IN LIVER TRANSPLANTATION.

K. Hashimoto[1], C. Quintini[1], K. Hirose[1], S. Nakagawa[1], T. Diago Uso'[1], A. Cocieru[1], F. Aucejo[1], B. Eghtesad[1], D. Kelly[1], C. Winans[1], D. Vogt[1], J. Fung[1], C. Miller[1]. *[1]Liver Transplant Program, Department of General Surgery, Cleveland Clinic Foundation, Cleveland, OH, USA.*

Introduction: Biliary complications remain a major source of morbidity after liver transplantation (LT). Despite improvements in surgical technique, other factors such as hepatic artery flow (HAF) may affect the development of post-LT biliary anastomotic stricture (BAS). It is also well known that high portal vein flow (PVF) reduces HAF via the hepatic buffer response. If there is no inflow limitation, temporary clamping of the portal vein will result in dramatic augmentation in HAF (augHAF); poor augHAF in the presence of high PVF suggests relative arterial insufficiency. The aim of this study is to determine if this insufficiency correlates with the incidence of BAS in LT.

Methods: 244 LT recipients with duct-to-duct biliary reconstruction were reviewed. Intraoperative blood flow data were available in 92 patients (pts) (M/F = 60/32, age 53 ± 10). Two pts with early hepatic artery complications were excluded. Following allograft implantation, PVF, basal HAF, and augHAF, (i.e. HAF during temporary portal vein occlusion) were measured. We defined the augmentation index (AI) as (augHAF – basal HAF)/PVF. 65 pts had low AI (< 0.1) and 27 had high AI (≥ 0.1). We evaluated pt demographics and the incidence of BAS between these 2 groups.

Results: Nine (10%) pts had early BAS (≤ 60 days after LT) and 8 (9%) had late BAS (> 60 days after LT). Pt data are shown in Table 1. PVF in pts with low AI was significantly higher than that in pts with high AI. There was no difference in the incidence of late BAS between 2 groups. However, the incidence of early BAS in pts with low AI was significantly higher than that in those with high AI.

Conclusion: 1) Intraoperative measurements of HAF, augHAF, and PVF are important. 2) Pts with low AI may have relative arterial insufficiency and have a higher risk of early BAS.

Table. 1

	Low AI (n = 65)	High AI (n = 27)	P value
MELD score	21 ± 6	22 ± 8	NS
CIT (min)	523 ± 128	471 ±150	NS
HAF (ml/min)	248 ± 129	232 ± 139	NS
augHAF (ml/min)	332 ± 146	447 ± 210	NS
PVF (ml/min)	1955 ± 865	1310 ± 662	0.014
Early biliary stricture	9 (14%)	0 (0%)	0.042
Late biliary stricture	4 (6%)	4 (15%)	NS

MELD; model for end-stage liver disease, CIT; cold ischemia time

Abstract# 357

BILE DUCT COMPLICATION AFTER DUCT-TO-DUCT RECONSTRUCTION IN ADULT LIVING DONOR LIVER TRANSPLANTATION.

Eung-Ho Cho[1], Kyung-Suk Suh[1], Hae Won Lee[1], Jai Young Cho[1], Nam-Joon Yi[1], Jung-Hwan Yoon[2], Hee Chul Yu[3], Baik Hwan Cho[3], Kuhn Uk Lee[1]. *[1]Department of Surgery, Seoul National University College of Medicine, Seoul, Republic of Korea; [2]Department of Internal Medicine, Seoul National University College of Medicine, Seoul, Republic of Korea; [3]Department of Surgery, Chonbuk National University Medical School, Jeonbuk, Republic of Korea.*

Background Bile duct complication is major morbidity and intractable problem after adult living donor liver transplantation (ALDLT). The purpose of this study is to report of the pattern of occurrence of bile duct complications and to find risk factors after duct-to-duct reconstruction in ALDLT.

Method From January 1999 through October 2005, 210 ALDLTs were performed at our institution. Seventeen patients of hospital mortality and 25 patients who received hepaticojejunostomy were excluded and 168 patients who received duct to duct anastomosis were included in this study and analyzed retrospectively. Mean age of the patients was 48.3 years old, male patients were 124 and female 44. Most common underlying liver disease was viral hepatitis (82.7%). Mean follow-up period after transplantation was 37.8 months. Right liver grafts were 147 (87.5%). In 35(20.8%) patients, two graft bile ducts were anastomosed. Bile duct stents including T-tube were inserted in 52 patients (31%). Interrupted suture was done in 110 patients, and continuous suture was done in 56 patients.

Results Bile duct complications were occurred in 70 patients (41.7%). Leaks at anastomosis and leaks after T-tube removal occurred in 24 patients (14.3%). All leaks occurred within 9 months after transplantation. One- and 3-year cumulative occurrence rates of stricture were 24.3% and 29.6%, respectively. Leaks were frequent in patients with interrupted suture (p=0.015), with stent (p=0.001). Strictures were frequent when graft bile duct was multiple (34/128 in single duct, and 16/35 in two ducts, p=0.026). Patients with leak were managed with radiologic intervention in 11, and surgical therapy was needed in 4 patients. In stricture patients, 43 patients were managed with radiologic intervention and 6 were managed with surgery.

Conclusion Long-term close follow up is necessary to find biliary complication after ALDLT. And, when two ducts must be anastomosed, special care is needed.

Abstract# 358

DUCT-TO-DUCT BILIARY RECONSTRUCTION IN 150 CONSECUTIVE RIGHT LOBE LIVE DONOR LIVER TRANSPLANTATION.

Murat Kilic[1], Unal Aydin[1], Omer Unalp[1], Mustafa Ozsoy[1], Erkan Kismali[1], Mehmet Alper[1], Murat Zeytunlu[1]. *[1]Organ Transplantation Center, Ege University, Izmir, Turkey.*

Aim: Biliary complications appear to be the leading cause of postoperative complications after right lobe live donor liver transplantation (LDLT). The intent to perform a duct-to-duct (DD) anastomosis is increasing among liver transplant centers and in this study, the feasibility, safety and efficacy of DD anastomosis in almost all right lobe LDLT is demonstrated.

Patients and methods: Between April 2003 and August 2006, DD anastomosis was performed for 150 consecutive right lobe LDLT. At the same time period 5 patients with primary sclerosing cholangitis undergoing the same procedure were excluded from the study as these patients were not considered for DD anastomosis. The median age was 46 (range:12-64), the median child score was 11 (range: 6-15), the median meld score was 20 (range:8-43). The leading cause for liver failure was hepatitis B in 73 % of cases. Among these 150 right lobes, 52 grafts (35%) had one bile duct, 82 grafts (55%) had two bile ducts while 16 grafts (10%) had 3 bile ducts. In patients having two ducts seperate anastomosis to the recipient's right and left bile ducts was performed while in patients having three ducts either ductoplasty was performed between the two ducts or the bile sheat surrounding the two ducts was used for a single anastomosis. The median follow-up period is 18 months (range:4-40).
Results: The overall one and three year patient and graft survival is 91% for these series. None of the grafts were lost due to biliary complications. The biliary complication rate is 15%. Biliary strictures occurred in 9 patients (6%) and bile leaks occurred in 13 patients (9%). 3 patients underwent reoperation for biliary complications. Bile leaks were managed by percutaneous drainage combined with endoscopic sphincterotomy and stent placement. Strictures were managed by endoscopic stent placement in 6 patients and by percutaneous transhepatic route in 3 patients. The rate of biliary stricture rate was not different between single duct or multiple duct anastomosis (3/52 versus 6/98). Although bile leak rate was higher in multiple duct group this did not reach a statistically significant value (2/52 versus 11/98).
Conclusion: DD anastomosis is a safe and feasible method after right lobe LDLT even with multiple ducts. It seems to be easier and safer by preserving physiological bilioenteric continuity allowing easy access through endoscopic techniques.

Abstract# 359

COMBINED ORTHOTOPIC LIVER TRANSPLANTATION AND CARDIAC SURGERY IS BOTH SAFE AND EFFECTIVE.

Winston R. Hewitt[1], Hani P. Grewal[1], David J. Kramer[1,2], Justin Nguyen[1], Timothy Shine[3], Darrin Willingham[1], Daniel Yip[1], Barry Rosser[1], Lawrence McBride[1], Thomas Gonwa[1], Andrew Keaveny[1], Rolland C. Dickson[1], Christopher B. Hughes[1]. *[1]Transplantation, Mayo Clinic, Jacksonville, FL, USA; [2]Critical Care, Mayo Clinic, Jacksonville, FL, USA; [3]Anesthesia, Mayo Clinic, Jacksonville, FL, USA.*

Liver transplantation (LT) is the definitive therapy for patients with end-stage liver disease (ESLD). Improvements in outcomes have led to the expansion of acceptance criteria for LT, including consideration of older patients and those with significant comorbid illnesses. It is unclear whether patients with significant coronary artery disease (CAD) or aortic valvular disease should be excluded from LT. Our aim was to evaluate the outcome of patients undergoing simultaneous LT and cardiac procedures at our institution.
Methods: A review of all patients transplanted at our center from January 1998 until September 2006 was conducted. A total of 1463 LTs were performed during that time with 10 receiving a combined LT and cardiac procedure. The outcome of these patients was analyzed.
Results: In addition to liver transplantation, the combined procedures included coronary artery bypass grafting (CABG, 6), aortic valve replacement (AoV, 3) and CABG with AoV (1). Type II diabetes mellitus was present in 80%, hypertension in 60% and cigarette smoking in 60%. None of the transplants utilized Donation-after-Cardiac-Death grafts, HCV-positive grafts or HBcAb-positive grafts.
The mean cold ischemia time (± SD) was 7.45 ± 3.15 hours. The one-year graft and patient survival was 80%. Seven patients had post-operative cardiac dysrhythmias including one with ventricular fibrillation. These events did not affect 1-yr survival in 6 of the 7 patients. The 1 patient with VF died at 1.5 days post-operatively. One patient died of sepsis on post-operative day 221.
Conclusion: There are those patients with ESLD and cardiac disease where the treatment of each condition individually would likely result in a dismal outcome. With increasing age of the ESLD population, surgically correctable cardiac disease is a more common finding in otherwise acceptable liver transplant candidates. Our results show that combined cardiac procedures with LT can be safely performed.

Pt Characteristics			Outcome (days)	
	Mean ± SD			Mean ± SD
Age (yrs)	60.4 ± 6.6		ICU LOS	4.7 ± 4.1
BMI	29.9 ± 3.0		Hospital LOS	34.2 ± 63.4
MELD	17.2 ± 7.0		F/U period	694.2 ± 851.6

Abstract# 360

15 YEARS FOLLOW-UP OF AORTOHEPATIC CONDUITS IN LIVER TRANSPLANTATION.

Dmitriy Nikitin[1], Tariq Khan[1], Edmund Q. Sanchez[1], Srinath Chinnakotla[1], Henry B. Randall[1], Greg J. McKenna[1], Richard Ruiz[1], Nicholas Onaca[1], Marlon F. Levy[1], Robert M. Goldstein[1], Goran B. Klintmalm[1]. *[1]Transplant, Baylor Regional Transplant Institute, Dallas/Ft. Worth, TX, USA.*

The aortohepatic conduit is an important tool in the armamentarium of the liver transplant surgeon. This technique has been recently used more frequently and in more complex cases. This study was designed to assess the impact of the aortohepatic conduits on graft survival after liver transplantation, including long-term results.
Materials and Methods: Data from 1984-2005 on 2398 adult liver transplants were prospectively collected into the computerized database and then retrospectively analyzed. Aortohepatic conduits were required in 77 (3.5%) transplants (only conduits placed at the time of the transplant were included in the analysis).
Results: The utilization of the aortohepatic conduit increased in the last 10 years from 2.3% in 1994 to 8.42% in 2004. The use of aortohepatic conduit was more frequently associated with female donors (4.6%), female recipients (5.2%), and female donor to female recipient combination (6.1%). The transplants with the creation of a conduit took longer (7.9 hours versus 6.1 hours). There was no statistically significant difference in graft survival, patient survival, hepatic artery complications or biliary complications (up to 15 years follow-up). The graft survival was 59.8% with the conduit versus 66.8% without the conduit at 5 years follow-up, 52.5% versus 51.1% at 10 years, and 34.5% versus 34.8% at 15 years.
Conclusion: In experienced hands, aortohepatic conduit can be used safely for liver transplantation with no negative impact on graft survival, patient survival, hepatic artery complications or biliary complications. This technique has been recently used more frequently.

Abstract# 361

BILIARY COMPLICATIONS IN LIVING DONOR LIVER TRANSPLANTATION USING RIGHT LOBE.

D. G. Kim[1], C. Y. Lee[1], S. J. Kim[1], M. D. Lee[1], I. S. Moon[1]. *[1]General Surgery, The Catholic University of Korea, Kangnam St. Mary's hospital, Seoul, Republic of Korea.*

Introduction: Living donor liver transplantation (LDLT) using right lobe provide enough graft mass for the recipient and is a safe procedure for the donor. Duct-to-duct biliary anastomosis has the advantage of preserving the function of the sphincter of Oddi and enables transpapillary endoscopic treatment. Biliary complication is the most common cause of postoperative morbidity such as cholangitis, sepsis and eventually retransplantation or death and remains the Achilles heel of the procedure**. Material and Method**: From Jan. 2000 to Apr. 2006, 228 patients were undertaken LDLT using right lobe with duct to duct biliary reconstruction in Department of Surgery, Catholic University of Korea. Patients were 167 men and 61 women with a mean age of 49 years. We reviewed 1) biliary anatomy and reconstruction method, 2) biliary complication and contributing factors, 3) treatment and prognosis for biliary complication **Results**: According to Couinaud classification on biliary anatomy, type 1 is most common type (69.7%). The reconstruction method depended on anatomical type and number of lumen but the most of cases were reconstructed end to end anastomosis fashion, single or double after ductoplasty in case of multiple lumens. The biliary complication consisted of leakage (15.4%) and stricture (26.3%), and the overall biliary complication rate was 34.6% and the biliary stricture were related to the number of lumen and the bile leakage.($P < 0.05$) The majority of biliary stricture occurred within 2yrs after liver transplantation. Treatment of biliary leakage were percutaneous drainage or conservative treatment with spontaneous healing and biliary stricture could be treated by both the transpapillary endoscopic and percutaneous transhepatic interventions in most patients.(success rate up to 90%) **Conclusion**: The incidence of biliary complication is related to number of lumen on the graft surface, and a careful follow-up is required for reicipient especially within first two years. Both the transpapillary endoscopic and percutaneous transhepatic radiologic interventions are effective and complementary approaches that help to avoid surgery for biliary stricture.

Abstract# 362

LEFT LATERAL SEGMENTECTOMY ON PEDIATRIC LDLT: SPECIAL ATTENTION TO SEGMENT IV. Andre Godoy[1], Eduardo Carone[1], Vincenzo Pugliese[1], Joao Seda Neto[1], Eduardo A. Fonseca[1], Alcides A. Salzedas[1], Rogerio C. Alves[1], Carla Matos[1], Mario Kondo[1], Irene K. Miura[1], Renata S. Pugliese[1], Gilda Porta[1], Vera Baggio[1], Paulo Chapchap[1]. *[1]Liver Tranplant Unit, Hospital do Cancer/Hospital Sirio-Libanes, Sao Paulo, Brazil.*

The lack of consensus on how to evaluate donor's surgical complications in live donor liver transplantation (LDLT) and incoherence of cumulative data hampers efficient comparison of the outcome worldwide. During left lateral segmentectomy (LLS-segments II/III), the vascular inflow to segment IV can be compromised.On these cases, an area of ischemia can be seen intra-operatively and further resection may be needed to prevent necrosis and abscess formation. In order to evaluate these complications, we retrospectively evaluated our data. From Jul/95 to Nov/06, 300 consecutive LDLT were performed by a single group in Sao Paulo, Brazil, with no donor mortality. 200 LLS grafts were transplanted in this period. 193 charts were available for review and are the subject of this analysis. Pre-operative donors radiologic evaluation consisted of a righ upper quadrant Doppler Ultrasound. Donors median age was 29 years (range 16 to 48). 47% were male gender. 88% of the donors were parents. Median operative time and hospital stay was 7.5 hours (range 4.2 to 12 hours) and 5.7 days (range 3 to 47 days), respectively. One donor received allotransfusion. Partial segment IV resection was required in 103 cases (53%), due to intra-operative ischemia, specially on segment IVB. The incidence of post-operative surgical complications was 9.1% as follows: bile leak, n=5 (2.5%), biloma needing percutaneous drainage, n=1 (0.5%), segment IV abscesses, n=7 (3.6%), incisional hernia, n=2 (1%), small bowel obstruction, n=1 (0.5%), bleeding, n=1 (0.5%), and wound infection, n=1 (0.5%). Five patients with segment IV abscesses underwent percutaneous drainage. There was no statistically significant difference in the incidence of complications (abscesses and bilomas) on patients that had, or had not partial resection of segment IV. In conclusion, complications related to segment IV ischemia under-evaluation increase post-operative morbidity. An aggressive primary surgical approach may be needed in cases of segment IV ischemia. Further studies are needed to validate this hypothesis.

Viral Hepatitis: Outcomes of Transplantation

Abstract# 363

DOES CHOICE OF CALCINEURIN INHIBITOR MATTER IN PATIENTS TRANSPLANTED FOR HEPATITIS C (HCV)? Julie Thompson[1], Russ Weisner[2], John Lake[1]. *[1]Medicine, University of Minnesota Medical School, Minneapolis, MN, USA; [2]Medicine, Mayo Clinic, Rochester, MN, USA.*

OBJECTIVES The results of liver transplantation in the U.S. for recipients with HCV are worsening (AJT 6:1398-406, 2006). One change that has occurred is the shift from cyclosporine-(CSA) to tacrolimus (TAC)-based immunosuppression (IS). Thus, we sought to compare graft survival, patient survival, death from hepatitis and rejection rates based on IS with CSA or TAC.

METHODS Data from 9261 adult, (18-75 years old) primary, liver transplant recipients reported to the SRTR between 1/98 and 12/02 were analyzed. Of these, 4788 were transplanted for HCV. Patients must have been on steroids and either CSA or TAC at discharge. A P-value using Fisher's exact test was calculated to compare death from hepatitis, rejection and graft and patient survival.

RESULTS Table 1. At discharge, 932 received CSA-based IS, 3856 were given TAC-based IS. The groups did not vary significantly with respect to recipient or donor age, cold ischemia time or sex. There were more Hispanics in the TAC group (12.5% vs 5.4%). Nearly all donors were deceased (99.9% in CSA group, 99.8% in TAC group). In HCV+ patients, the difference in 3-year graft survival was not statistically significant. Patient survival and freedom from rejection in these recipients was improved in those receiving TAC IS. There was no difference in the death rate between the 2 groups. All measured outcomes in HCV- recipients were significantly better in those receiving TAC IS, with the exception of freedom from acute rejection at 6 months.

CONCLUSION Overall outcomes for HCV recipients are worsening in the US. Some authors have suggested this may be due in part to choice of calcinuerin inhibitor, with TAC-based IS potentially contributing to these negative results. This analysis, however, showed improved outcomes in HCV+ patients receiving TAC IS, with improved 3-year patient survival; while 3-year graft survival was not different. Similarly, HCV(-) patients receiving TAC-IS compared to CSA-based IS, fared better.

Comparison of outcomes in HCV+ and HCV- on CSA vs TAC

	CSA	TAC	P-value
3-year graft survival %			
HCV +	74.0	76.8	.10
HCV -	78.3	82.1	.020
3-year patient survival			
HCV +	78.6	81.7	.05
HCV -	83.2	87.4	.005
Freedom from rejection at 1 year %			
HCV +	68.7	77.2	<.001
HCV -	67.0	78.2	<.001
Death from hepatitis within 3 years			
HCV +	3.0	2.3	N.S.

Abstract# 364

LATE GRAFT DYSFUNCTION (GD) IN HBV RECURRENCE-FREE RECIPIENTS IS ASSOCIATED WITH SERUM ANTINUCLEAR ANTIBODIES (ANA) REACTIVITY. Maria F. Donato[1], Eliana Arosio[1], Valentina Monti[1], Francesca Agnelli[1], Cristina Rigamonti[1], Mauro Berra[1], Mauro Viganò[1], Giorgio Rossi[1], Massimo Colombo[1]. *[1]Division of Gastroenterology and Liver Transplant Unit, IRCCS Fondazione Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena, Milan, Italy.*

Background/Aim: Prevention of hepatitis B recurrence by anti-HBV prophylaxis allows the assessment of non-viral factors involved in post liver transplant (LT) autoimmune reactions. We aimed to compare serum ANA reactivity with graft function and histology following LT. Methods: 37 HBV recipients were studied (all without recurrence). 82% males, median age 50 yrs (21-63), 54% had FK-506, 46% Cyclosporine (CSA). All patients had a protocol liver biopsy taken at 1 or 5/10 yrs after LT (median time 1.2 yr, range 1-12) Serum samples were concomitantly collected and tested for serum ANA by IF on HEp-2 cells substrate. 1:80 to 1:160 were low-titre (LT-ANA), whereas >1:160 were high-titres (HT-ANA). In 27 out of 37 patients ANA test was also performed on serum samples available immediately before LT. Histological activity and fibrosis were scored according to Ishak, acute cellular rejection (ACR) according to Banff. Centrilobular changes (CC) were also recorded. Results: At the time of liver biopsy, 12 (33%) patients were ANA(-), 25 (67%) were ANA(+) (10 HT-ANA); the majority of the latter (93%) were ANA positive also before LT. ANA(+) and ANA(-) patients were similar for sex, age, BMI, CSA/FK-506 levels, ALT/AST, grading, staging, steatosis, CC. HT-ANA patients significantly differed from LT-ANA and ANA(-) ones for history of ACR (70% vs 26%, p=0.02), CSA levels (111 vs 132 ng/mL, p=0.05), ALT (54 vs 18 IU/L, p=0.001), AST (31 vs 18 IU/L, p=0.003), IgG >1600 mg/dL (44% vs 4%, p=0.015) but not for BMI, FK-506 levels, grading, staging, steatosis, CC. HT-ANA was associated with increased risk of higher ALT (>21 IU/L, median ALT in the whole group) (OR 15; 95%IC 1.7-139.0). Four HT-ANA patients (11%) showed GD after a median follow-up of 31 months (range 12-60) with median staging 1.5 (range 1-5), grading 7 (range 4-8), ALT 80 UI/L (range 68-243), AST 63 IU/L (range 52-384). All of them were responsive to increased immunosuppression. Conclusions: LT-ANA are common in HBV recurrence-free recipients, whereas HT-ANA are significantly associated with late GD suggesting a pathogenetic role of autoimmunity. Presence of autoimmunity markers before/after LT might guide modulation of immunosuppression in HBV recurrence-free setting.

Abstract# 365

LIVING DONOR LIVER TRANSPLANTATION FOR HEPATITIS B RELATED LIVER CIRRHOSIS: MID TO LONG TERM RESULTS AT A SINGLE INSTITUTION. Chao-Long Chen[1], Shridhar Iyer[2], Amornetta Jordan[3], Chih-Chi Wang[4], Shih-Ho Wang[5], Yueh-Wei Liu[6], Chin-Hsiang Yang[7], Allan Concejero[9], Bruno Jawan[10]. *[1]Liver Transplantation Program, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.*

Introduction: The advent of long-term hepatitis B immune globulin (HBIG) and antiviral agents were a major breakthrough, improving survival for hepatitis B post transplantation. The aims of this study were 1. Analyse the results of living donor liver transplantation (LDLT) for hepatitis B related liver cirrhosis (HBV) 2. Examine the efficacy of our hepatitis B prevention strategies.

Patients and Methods: 126 adult patients underwent LDLT from January 1999- April 2006. The study included 82 HBV patients with a mean age of 48.43 (±9.07) years. 29 patients had Childs A, 39 had B and 14 had C disease status. The mean MELD score was 14.35 (±6.96). 42 patients had either previous or co-existing HCC. All patients received post transplant lamivudine and 8 patients received adefovir and/or entacavir for mutants. 17 patients were hepatitis e antigen (HBeAg) positive and 58 were hepatitis e antibody positive. 3 patients were positive for Delta antigen.76 donors had hepatitis B antibody (antiHBs) of which 62 received preoperatively 1 or more doses of hepatitis B vaccine. 27 patients were DNA positive at transplantation. 49 patients received preoperative lamivudine for a mean duration of 5.36 months. Our protocol for HBV prophylaxis includes a combination of lamivudine and HBIG post transplantation. We used hepatitis B vaccine to boost active immunity post steroid withdrawal in 16 patients. The mean follow up was 33 (±20.67) months.
Results: The 1, 3 and 5 year acturial survival was 94%, 91% and 91% respectively. There were 3 hospital and 3 late mortalities due to lung metastasis, gastric carcinomatosis and venoocclusive disease. There were only 2 patients with serological hepatitis B recurrence (2.4%). Both patients were HBeAg negative and 1 was DNA positive at LDLT. The median number of doses for HBIG to maintain target antibody levels was 3 doses/ year per patient after 1st week post transplantation. Patients with HBeAg are associated with more frequent HBIG dosing (≥4/year/patient, p=0.004). There was no association between DNA positivity and dosing requirements.
Conclusions: LDLT for HBV is associated with good long term survival (91%, 5-year). Our protocol for HBV prophylaxis is efficacious with low serologic recurrence of 2.4%. HBeAg positive patients may require more frequent HBIG dosing.

Abstract# 366

HEPATOCELLULAR CARCINOMA AND RECURRRENCE OF HEPATOCARCINOMA ARE ASSOCIATED WITH HBV RECURRENCE AFTER LIVER TRANSPLANTATION. ROLE OF TUMORAL CELLS IN HBV REPLICATION.

Luciana Costa Faria[1], Michelle Gigou[1], Anne-Marie Roque Afonso[1], Mylene Sebagh[1], Bruno Roche[2], T. C. A. Ferrari[1], Catherine Guettier[1], Denis Castaing[2], Didier Samuel[1]. *[1]Unite 785, INSERM Universite Paris Sud 11, Villejuif, France; [2]Centre Hepato-Biliaire, AP-HP/Hopital Paul Brousse, Villejuif, France.*

Important improvements have been introduced to the care of patients undergoing liver transplantation (LT) for hepatitis B virus (HBV)-related disease. The aims of this study were to investigate if HCC is a risk factor for HBV recurrence after LT; to quantify the cccDNA and total HBV DNA in HCC and non-tumor cells from the native liver of HBsAg-positive transplanted patients.
One hundred-thirteen HBsAg-positive patients who underwent LT from 1995 to 2004 were studied. All patients received HBIG after LT and 57 patients also received lamivudine and/or adefovir. Median follow-up was 53 months. Thirty-three patients (29.2%) had HCC. cccDNA and total HBV DNA were quantified in HCC and in non-tumor cells from the native liver of 16 patients by a real time PCR assay (Werle-Lapostolle., 2004). cccDNA was quantified in HCC cells in 3 patients who presented HBV and HCC recurrence. Fourteen patients (12.4%) presented HBV recurrence after LT. On univariate analysis, the risk factors for HBV recurrence were presence of HCC, post-OLT antitumorous chemotherapy, HBV DNA at LT > 30,000 copies/mL. The independent risk factors for HBV recurrence were HCC, HBV DNA at LT > 30,000 copies/mL and HBIG monoprophylaxis (vs combined post-LT prophylaxis). cccDNA was detected in HCC cells of 11 patients and in non-tumor cells of 12/16 patients on explant liver. All these patients showed detectable total HBV DNA in tumor and non-tumor tissues. Seven patients developed HBV and HCC recurrence after LT almost concomitantly. cccDNA was detected in HCC metastatic cells after tumoral recurrence in 2 out of 3 tested patients. In conclusion, the presence of HCC, HBV DNA level at the time of OLT and HBIG monoprophylaxis were independent risk factors for HBV recurrence after LT. HBV replication from HCC cells is strongly suggested by the concomitant reccurence of HCC and HBV and by the detection of cccDNA and HBV DNA in tumor tissues.
(supported by a grant from ANRS).

Abstract# 367

RECURRENCE OF HEPATITIS B IS ASSOCIATED WITH CUMULATIVE STEROID DOSE AND CHEMOTHERAPY AGAINST HEPATOCELLULAR CARCINOMA RECURRENCE AFTER LIVER TRANSPLANTATION.

Nam-Joon Yi[1], Kyung-Suk Suh[1], Jai Young Cho[1], Choon Hyuck David Kown[2], Kwang-Woong Lee[2], Jae Won Joh[2], Soon Il Kim[3], Suk-Koo Lee[2], Won Kim[4], Jung-Hwan Yoon[4], Kuhn Uk Lee[1]. *[1]Surgery, Seoul National University College of Medicine, Seoul, Korea; [2]Surgery, Samsung Medical Center, Sungkyunkwan University, School of Medicine, Seoul, Korea; [3]Surgery, Yonsei University College of Medicine, Seoul, Korea; [4]Internal Medicine, Seoul National University College of Medicine, Seoul, Korea.*

The incidence of hepatitis B (HB) recurrence after a liver transplant has been reduced by prophylaxis with hepatitis B immune globulin (HBIG) and lamivudine. However, the long-term incidence of recurrence is > 10% and the factors associated with HB recurrence are unclear. This study analyzed the factors associated with HB recurrence in 203 recipients who underwent a liver transplant for HB in three major centers in Korea for 4 years. Eighty-five patients (41.9%) had a hepatocellular carcinoma (HCC). Preoperative active viral replicators with the HBeAg (+) (46.8%) and/or HBV DNA (+) (39.4%) were observed in 136 patients (67.0%). The HB prophylaxis consisted of either HBIG monotherapy (n=95, HBIG group) or combination therapy with lamivudine (n=108, combination group). HB recurrence was defined as the appearance of the HBsAg. The follow up period was 28.3±13.1 months. HB recurred in 21 patients (10.3%) after transplantation. The time from the transplant to recurrence was 16.3±9.4 months. Pre-LT DNA positivity was more prevalent in HBIG group (55.8%) than in combination group (39.8%) (p=.015). However, the incidence of HB recurrence was similar in the HBIG (6.3%) and combination group (13.8%) as well as between the active replicators (12.5%) and non-replicators (4.1%) (p>.05). There was a significantly higher incidence of HB recurrence in patients receiving steroid pulse therapy (21.0% vs 7.9%), HCC recurred patients (31.3% vs 8.6%), and patients receiving chemotherapy against HCC recurrence (25.0% vs 4.4%) (p<.05). The cumulative steroid dose was higher in HB recurred patients (p=.002). Multivariable analysis confirmed the effect of the cumulative steroid dose and chemotherapy to be risk factors. In conclusion, liver transplantation for HB was safe with low recurrence rates under adequate prophylaxis. However, the cumulative steroid dose and chemotherapy against HCC were significant risk factors for HB recurrence. Therefore, careful monitoring for HB recurrence is needed in these patients.

Abstract# 368

OCCURRENCE OF CHOLESTATIC HEPATITIS UNDER PREEMPTIVE INF/RIBA PROTOCOL AFTER LDLT FOR HCV.

Sumihito Tamura[1], Yasuhiko Sugawara[1], Noriyo Yamashiki[2], Yuichi Matsui[1], Junichi Togashi[1], Yusuke Kyoden[1], Junichi Kaneko[1], Kayo Nojiri[2], Norihiro Kokudo[1], Masatoshi Makuuchi[1]. *[1]Artificial Organ and Transplantation Division, Department of Surgery, University of Tokyo, Bunkyo-ku, Tokyo, Japan; [2]Organ Transplantation Service, University of Tokyo, Bunkyo-ku, Tokyo, Japan.*

Background: HCV is a significant global challenge in liver transplantation. Optimal management strategy after live donor liver transplantation (LDLT) remains unknown. We have applied preemptive interferon (INF) and ribavirin (RIBA) therapy in all HCV positive LDLT cases in hope of increasing the rate of viral eradication. Occurrence of cholestatic hepatitis (CH), however, has been noted.
Patient and Methods: As of the end of May 2006, 372 LDLT have been performed at the University of Tokyo. 92 adult recipients who underwent LDLT for HCV were subjected to the study. Preemptive protocol; Therapy is initiated with low dose INFalpha2b and RIBA 400mg/day starting approximately 1 month after LDLT, followed by gradual increase of dosage. Finally, PEGIFN 1.5ug/kg/W and RIBA 800mg/day are applied depending on the patients' compliance. Treatment continues for 12 months after HCV-RNA turns negative, and judged as sustained viral response after another 6 months of negative study without IBF/RIBA. Dose adjustments were made to avoid discontinuation due to adverse events. Splenectomy was performed at the time of LDLT in all cases to prevent thrombocytopenea by the protocol.
Results: Median age of the patients was 55 yrs with male dominance (68 male). Median MELD score was 14. There were 51 patients with HCC, 6 with HIV co-infection. In 71 cases, HCV genotype was 1b. A total of 83 patients (90%) underwent preemptive INF/RIBA. 28 are currently under

on going therapy, and 27 patients have completed the preemptive regimen. Among the patients who completed the regimen, SVR was established in 15 (66%).The treatment was stopped in 28 due to adverse events despite dose reduction and adjustments and/or due to other co-morbidities. Eight died of CH. Among them, rapid progression was observed early after LDLT in 4, precluding the initiation of preemptive INF/RIBA therapy. In the remaining 4, CH developed despite the initiation of early INF/RIBA. Diagnosis of CH was established at 3 to 29 months after LDLT in this group.**Conclusion:** Preemptive INF/RIBA following LDLT for HCV is feasible. It does, however, NOT offer complete prevention for CH. Further study is required for improving care is this population.

Abstract# 369

CLERANCE OF HEPATITIS C VIREMIA IMPROVES LONG-TERM SURVIVAL IN LIVER RECIPIENTS WITH RECURRENT HEPATITIS C.

Arno Kornberg[1], Bernadette Kuepper[1], Erik Bärthel[1], Katharina Thrum[1], Jens Wilberg[1], Merten Hommann[1], Utz Settmacher[1]. *[1]General, Visceral and Vascular Surgery, Friedrich-Schiller-University, Jena, Germany.*

Background:

The value of antiviral therapy for recurrent HCV infection after liver transplantation (LT) is not exactly clear, yet. The aim of this trial was to analyse the impact of aggressive post-LT antiviral therapy on long-term survival of liver recipients with mild recurrent HCV.

Patients and methods:

[A total of 26 patients after liver transplantation (LT) for HCV infection were included in this follow-up trial. In the case of morphologically mild confirmed recurrent hepatitis C an antiviral combination therapy using interferon (IFN) and ribavirin (RB) for a minimum of 12 months was intended. Allograft function (AST, ALT, Bili), and viremia levels were determined continuously. Protocol allograft biopsies were performed repeatedly to evaluate development of necroinflammation (grading) and fibrosis (staging), according to Ishak and Knodell. The impact of several clinical (age, antiviral therapy, cold/warm ischemia, immunosuppression, BMI, allograft function) and virological (viral loads, CMV infection) factors on long-term survival were analysed using Cox regression model.

Results:

Follow-up post-LT actually ranges between 6 and 132 months (median: 84 mo). Overall 5-year survival accounts for 84%. HCV recurrence rate was 92%. Antiviral therapy resulted in clearance of viremia in 14/24 recipients (58%) at 12 months. Furthermore, 12-months biopsy revealed significant improvement of grading (6,2 ± 3,4 versus 3,9 ± 1,3; *P*=0,002), while staging remained unchanged (1,7 versus 1,8). Long-term survival was significantly influenced by achieving HCV clearance (*P*=0,002), CMV-free follow-up (*P*=0,04), and low donor age (*P*=0,02). Only clearance of viremia levels, however, demonstrated to be a significant parameter beneficially impacting patients' survival in multivariate analysis (*P*=0,02).

Conclusion:

To the best of our knowledge, this is the first study demonstrating a clear benefit of HCV clearance in liver transplant patients with recurrent hepatitis C. In consequence, our data seem to justify an aggressive antiviral treatment post-LT, even in the case of mild morphological changes.

Abstract# 370

PREDICTION OF TREATMENT RESPONSE TO 72 WEEKS OF PEGYLATED INTERFERON ALFA-2A PLUS RIBAVIRIN FOR CHRONIC HEPATITIS C AFTER LIVER TRANSPLANTATION.

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Background: Prediction of treatment response to combination therapy with pegylated interferon (PegIFN) and ribavirin (RBV) in chronic hepatitis C virus (HCV) infected and treatment-naive patients is well established. In contrast, treatment guidelines in the setting of HCV reinfection after liver transplantation are still missing.

Aims: We aimed at analyzing viral kinetics during PegIFN/RBV therapy in order to develop recommendations for the management of this special patient subgroup.

Methods: We retrospectively analyzed viral decline kinetics in 55 HCV infected liver transplant recipients (35 male, 20 female; mean age 55 years (35-70), who received combination therapy with pegylated interferon alfa-2a (initially 135 µg/ week) and ribavirin (initially 600 mg/d) for 72 weeks. Treatment was stopped when HCV-RNA remained detectable at week 48.

Results: 18 patients (33%) prematurely discontinued therapy due to adverse events. 59% (22/37) of the patients who completed treatment showed an end-of-treatment response with undetectable HCV-RNA after 48 weeks of therapy. Sustained virological response could be achieved in 11 patients (30%). A viral decline of at least 2log10 at week 12 (EVR) was significantly associated with an EOT response, but failed to discriminate between SVR and viral relapse (9/11 and 8/11 patients, respectively). In contrast, 4 EVR patients were not able to clear HCV RNA on treatment, whereas 2 patients without a 2log-decline achieved an SVR. Likewise a cut-off of 30.000 IU/mL was able to predict nonresponse in 100% but failed to predict relapse. The positive predictive value for SVR in patients with undetectable HCV RNA by Amplicor PCR (< 50IU/mL) at week 12 was 67%. By re-analyzing week 12 sera with highly sensitive TaqMan PCR, 10 were undetectable and the SVR rate in these patients was 70%. However, the highest predictive value for SVR was an undetectable viremia at week 24 (73%).

Conclusions: The outcome of extended antiviral combination therapy (72 weeks) for HCV reinfection after OLT can be best predicted by week 24 virologic response. The remarkable high SVR rates in patients with detectable HCV-RNA at week 12 might be consequence of the extended treatment regimen and could explain the lower predictive value of the week 12 response.

Abstract# 371

MULTICENTER RANDOMIZED HEPATITIS C (HCV) – THREE TRIAL POST LIVER TRANSPLANTATION (OLT): TWO-YEAR FINAL REPORT.

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To assess efficacy-safety of steroid (Pred)-free immunosuppression (IS) using daclizumab (DAC), tacrolimus (TAC) and mycophenolate mofetil (MMF) to minimize acute cellular rejection (ACR), HCV recurrence (HCVR) and adverse events post OLT. METHODS: Open label, prospective, multicenter study involving 312 adult HCV-OLT recipients randomized pre-OLT (1:1:2) to 3 IS regimens (see Results). Laboratory data-liver histology (local pathologist) done when clinically indicated and at 90, 365 and 730 days-protocol. ACR graded: Banff schema. HCVR staged: Batts-Ludwig. Primary endpoints: clinically significant ACR (Grade 2 + RAI 4) and/or HCVR (Stage 2 or Grade 3 any time). Significant statistics: p 0.05*. RESULTS: 312 patients studied. Arm 1 (n=80): TAC+Pred; Arm 2 (n=79): TAC+Pred+MMF; Arm 3 (n=153): 3-dose DAC+TAC+MMF (Pred-free). Available data: ACR = 304 (98%)- 91% deceased- (DD) and 9% living-donors (LD). HCVR = 283 (91%)- 88% DD and 12% LD. All data reported for Arms 1, 2, 3, respectively. Rejection-free incidences: 82%, 88% and 91%*(*I vs III); mild ACR: 21 (26%), 26 (33%) and 80 (52%); moderate ACR: 50 (63%), 33 (42%) and 73 (48%); severe ACR: 9 (11%), 20 (25%) and 0 (0%)* patients (*II vs III). HCV recurrence-free incidences: 13 (17%), 23 (29%), and 57 (37%); moderate HCVR: 54 (67%), 42 (53%) and 87 (57%); severe HCVR: 13 (17%), 14 (18%) and 9 (6%). More aggressive HCVR (> 1 stage increase: days 90 to 365) progression observed in Arm 1 (26, 33%) vs. 2 (5, 6%) and 3 (14, 9%). No differences between DD - LD. ACR is an independent risk factor for HCVR (Cox: HR 2.69, p < 0.001). No differences found for HCV-RNA, diabetes, cancer, infections, hypertension or hyperlipidemia. Graft survival: 79%, 80% and 85% (NS). Patient survival: 83%, 81% and 87% (NS). Similar death causes: HCVR (5, 2, 4), respiratory (1, 5, 4), malignancy (2, 4, 1), sepsis (2, 1, 3); others (5, 2, 6). CONCLUSIONS: This 2-year report suggests that a completely steroid-free IS with DAC/TAC/MMF is safe and effective, with significantly lower incidence of ACR. ACR appears to be a risk factor in HCVR. HCV recurrence free survival is not significantly impacted by MMF, DAC induction or the lack of steroids. LD in HCV recipients may not be contraindicated. Complete final 2-year data will be presented at the time of the meeting.

Extended Criteria Donors

Abstract# 372

LIVER TRANSPLANT FROM MAASTRICHT TYPE II NON-HEART BEATING DONORS MAINTAINED WITH NORMOTHERMIC RECIRCULATION. C. Fondevila, A. Hessheimer, A. Ruiz, D. Calatayud, J. Bollo, J. Ferrer, R. Charco, J. Fuster, P. Taura, J. C. Garcia-Valdecasas. *[1]Surgery, Hospital Clinic, University of Barcelona, Barcelona, Spain.*

Maastricht type II non-heart beating donors (NHBD) have undergone irreversible extrahospitalary cardiac arrest and arrive at the hospital after cardiopulmonary resuscitation (CPR) has failed. Our aim is to explain our transplant experience with livers arising from these donors and their maintenance with normothermic recirculation (NR) prior to implantion.

Patients/methods. Potential NHBD are < 65 years old and have undergone < 15 min of cardiac arrest without CPR. A potential donor is brought to our emergency department under continuous CPR and placed on a cardiocompressor. Femoral vessels are cannulated to establish a 37°C NR circuit using cardiopulmonary bypass (CPB). NR is maintained while consent to donation is obtained and continued until perfusion with the cold preservation solution at organ harvest.

Results. Since April 2002, 10 of 30 potential NHBD livers were transplanted at our center. Twenty NHBD livers were rejected for transplant for the following reasons: hepatic steatosis (n=9), poor perfusion (n=5), intraabdominal infection (n=3), hepatic trauma (n=2), and hepatic fibrosis (n=1). Nine donors were men and one woman, with an average age of 42 years (range 20-65). During NR, CPB pump flows were maintained 2-3L/min, and initial and final transaminases were no more than three and four times the upper limit of normal respectively. The average NR time was 180 min and average cold ischemic time 398 min. One graft was lost to primary nonfunction in month 1 and another to hepatic artery thrombosis in month 2; both recipients were successfully retransplanted. Three recipients died with functional grafts, two in month 1 to postoperative complications and one to HCV recurrence in month 6. Five of the ten implanted NHBD livers are still functional, with an average of 23 months follow-up (range 8-55). Seven patients are alive, with an average of 26 months follow-up (range 8-55). The average graft and patient survivals for the entire series are 12 and 18 months respectively.

Conclusions. Livers arising from type II NHBD have been traditionally considered marginal, and there is little worldwide experience in their use. We have demonstrated that by employing strict criteria and systematically maintaining them with normothermic recirculation prior to harvest, they offer the possibilty of obtaining good quality grafts for transplant.

Abstract# 373

CLINICAL TRIAL OF HYPOTHERMIC MACHINE PRESERVATION IN HUMAN LIVER TRANSPLANTATION: INTERIM RESULTS. James V. Guarrera[1], Ben Arrington[1], John F. Renz[1], Mihwa Kim[2], Benjamin Samstein[1], Joseph Meltzer[2], Nikki Feirt[3], Sarah Bellemare[1], Lloyd E. Ratner[1], Robert S. Brown[1], Milan Kinkhabwala[1], H. Thomas Lee[2], Jean C. Emond[1]. *[1]Department of Surgery, Columbia University Medical Center, New York, USA; [2]Department of Anesthesiology, Columbia University Medical Center, New York, USA; [3]Department of Pathology, Columbia University Medical Center, New York, USA.*

Background: Hypothermic machine perfusion (HMP) is in its infancy in liver transplantation (LTx). Potential benefits include diminished reperfusion injury and improved early function. **Methods:** Five patients underwent LTx with livers that underwent HMP for 4-7 hours using dual centrifugal perfusion with Vasosol solution at 4-6°C. Patient, operative and early outcome variables were recorded. Five UW stored patients acted as controls. Perfusate Chemistry, AST, α-GST, IL-6 and TNF-α was measured serially in the HMP group. Histology and Semiquantitative RT-PCR was performed on procurement, backtable and 90-min post reperfusion (90PR) biopsies in both groups. **Results:** Five donor livers underwent HMP and were transplanted. All 5 HMP grafts functioned immediately by clinical criteria. Donor and recipient variables were similar between groups. There was a trend toward improved hemodynamic stability after reperfusion in HMP patients. Post reperfusion (60-90 min) biopsies showed well preserved histology in all recipients. There were no vascular or biliary complications. There were no surgical complications or early allograft dysfunction. Cold ischemia time was longer in the HMP group (11.3± 1.2vs. 6.3± 2 hrs; p=0.003) yet there was a trend toward lower recipient peak AST in the HMP group (HMP: 679± 34; CS: 1217± 688; p=0.16. Perfusate AST levels in the 5 HMP livers correlated with recipient POD 1 AST by linear regression ($p<0.001$). Effluent IL-6, TNF-α or α-GST levels were not predictive of graft injury. RT-PCR showed no differences in TNF-α or ICAM-1 expression between HMP and CS livers. IL-8 expression at the 90PR biopsy was increased 9.6X in the CS group vs 2.6X in the HMP group. **Conclusions:** HMP of liver grafts provides safe and reliable preservation in our pilot series. Attenuation of IL-8 expression may be a protective mechanism in liver HMP. Perfusate AST may allow pretransplant viability assessment. Completion of the pilot study and a subsequent multicenter trial in ECD livers will be necessary to demonstrate the magnitude of benefits of HMP over CS in LTx.

Abstract# 374

EFFECT OF N-ACETYLCYSTEINE ON ISCHEMIA-REPERFUSION INJURY OF EXTENDED DONOR LIVER ALLOGRAFTS. Geraldine C. Diaz[1], Rachel Taveres-De Melo[2], Rudy Odeh-Ramadan[2], John F. Renz[2]. *[1]Anesthesiology, College of Physicians and Surgeons of Columbia University, New York, NY, USA; [2]Surgery, College of Physicians and Surgeons of Columbia University, New York, NY, USA.*

Objective: Ischemia-Reperfusion injury (I/R) remains a significant contributor to initial poor function and non-function of the transplanted liver allograft. This study evaluates the effect of intra-operative administration of N-acetylcysteine (NAC) on post-transplant I/R injury among recipients of expanded donor criteria (EDC) liver allografts.

Methods: Retrospective analysis of 84 EDC recipients between 07/03 and 09/06 was performed. Indications for EDC included age>65yr, donation after cardiac death, cold ischemic time > 12hr, hypernatremia > 155meq/dl, macro-vesicular steatosis > 40%, and behavioral high-risk. Twenty-one EDC recipients were administered NAC (140mg/kg) as a bolus over one hour during the anhepatic period followed by continuous intravenous infusion of 70mg/kg for a six hour period. This group was compared to a control group of EDC recipients matched (3:1) by indication for transplantation, MELD score, disposition, allograft type, age, sex, cold and warm ischemic time. All NAC recipients had normal renal function at operation. Outcome variables included patient and graft survival, occurrence of a complication, primary nonfunction, initial poor function, time to normalization of serum bilirubin, time to normalization of coagulation (INR), need for fresh frozen plasma, red cell transfusion requirements post-reperfusion, and area under the curve of serum aspartate (AST) and alanine (ALT) aminotransferase.

Results: NAC administration was well tolerated. One episode of mild bronchospasm that immediately resolved with bronchodilator therapy and discontinuation of NAC occurred in a recipient but no other adverse events were observed. The clinical parameters of patient and graft survival, complication, primary graft nonfunction and initial poor function were comparable between groups. However, NAC recipients demonstrated lower area under the curve analysis for AST and ALT with lower times to normalization of bilirubin and INR.

Conclusion: This pilot study of intra-operative administration of NAC during the performance of liver transplantation supports safe administration of high-dose NAC with minimal complications. Administration of NAC reduces I/R injury as determined by transaminase area under the curve and time to normalization of bilirubin and INR.

Abstract# 375

OVERCOME GRAFT SIZE MISMATCH WITH PORTAL FLOW MODIFICATION IN LIVING DONOR LIVER TRANSPLANTATION. Shuji Nobori[1], Satoshi Kaihara[1], Kenji Uryuhara[2], Koichi Kozaki[3], Kiyokazu Akioka[1], Hidetaka Ushigome[1], Toshiya Ochiai[4], Masahiko Okamoto[3], Norio Yoshimura[1]. *[1]Transplant and Regenerative Surgery, Kyoto Prefectural University of Medicine, Kyoto, Japan; [2]Surgery, Kobe General Hospital, Kobe, Japan; [3]Organ Interaction Research Medicine, Kyoto Prefectural University of Medicine, Kyoto, Japan; [4]Digestive Surgery, Kyoto Prefectural University of Medicine, Kyoto, Japan.*

[BACKGROUND] Graft size has a great impact on the post operative course after living donor liver transplantation (LDLTx). The graft, especially smaller than 0.8% of Graft Recipient Weight Ratio (GRWR), shows significantly poor patient survival. and too much portal flow to the small graft is one of the major reasons for the unfavorable results. [OBJECTIVE] To demonstrate the effect of portal flow modification on graft function to overcome the limitation of graft size in LDLTx. [PATIENT/METHODS] Twenty-two adult LDLTx

patients were divided into two groups according to GRWR as follows; group S (n=6): GRWR<0.8%, group L (n=16): GRWR>0.8%. If portal vein pressure was over 20 mmHg after graft re-perfusion, splenectomy was performed to decrease it lower than 20 mmHg. Patient survival, total bilirubin level, prothrombin time, and volume of ascites at POD 7 and 14 were compared in two groups. [RESULTS] GRWR was 0.76 +/- 0.04 in group S and 1.10 +/- 0.24 in group L. Five of 6 cases in group S and 1 of 16 cases in group L needed splenectomy to decrease the portal pressure after re-perfusion. No patient in both groups died in their initial hospital stay after Tx. Total bilirubin level in group S at POD 7 and 14 were higher than those of group L, but no statistical significance. Prothrombin time and volume of ascites did not show any difference in two groups. [CONCLUSIONS] The graft smaller than 0.8% of GRWR can be safely used with portal flow modification in LDLTx.

	T.Bil (mg/dl)		PT (INR)		Ascites (ml/kg/day)	
	day7	day14	day7	day14	day7	day14
group S (n=6)	7.30	4.03	1.04	1.01	21.3	12.3
group L (n=16)	3.36	2.55	1.05	1.00	15.6	12.1

all data: median

Abstract# 376

LIVER GRAFTS FROM DONOR WITH CNS TUMORS: A SINGLE CENTER PERSPECTIVE. Mark Orloff[1], George Tsoulfas[1], Randeep Kashyap[1], Peter Abt[1], Maureen Graham[1], Saman Safadjou[1], Manoj Maloo[1], Peter Horton[1], Ashokumar Jain[1], Adel Bozorgzadeh[1]. *[1]Solid Organ Transplantation and Hepatobiliary Surg, University of Rochester, Rochester, NY, USA.*

Introduction: Severe shortage of organs is a rationale for expanding utilization of organs from marginal donors. Donors with CNS tumors are commonly overlooked for concerns of transmitting a malignancy to an immunosuppressed recipient.

Aim: To determine if use of liver grafts from donors with CNS tumors resulted in unexpected complications, particularly transmission of a CNS malignancy.

Methods: A retrospective review of 1173 liver transplants performed between 1992 and 2006 identified 39 donors diagnosed with a CNS tumor. Six tumors were benign and the remaining 33 carried a diagnosis of malignant astrocytoma or high grade glioblastoma multiforme. 33 (85%) of these donors had violation of the blood brain barrier due to intervention. One third (13) of these donors were open offers turned down due to risk of malignant transmission. There was no difference in MELD score or recipient age at time of transplant. Donors with CNS tumors had lower relative risk score (1.78 vs. 2.05 p<0.001) and median age (37.9 vs. 45.5 p<0.002) compared to those without CNS tumors.

Results: There was no difference in patient survival between those who received grafts from donors with CNS tumors and those without (1 year 82 vs. 83.3 p=NS, 3 years 77.4% vs. 72% p=NS). Three patients with HCC tumor outside of Milan criteria were transplanted with grafts from donors with CNS tumors. No recipient death was related to recurrence of a CNS malignancy, nor have any malignancies been detected in surviving patients receiving grafts from donors with CNS tumors.

Conclusion: In our experience, despite surgical manipulation and high grade CNS malignancy, no CNS tumor related transmission of malignancy has been observed. Grafts from these donors are an often over-looked source of high quality organs from younger donors, and can appropriately be utilized, particularly in patients who despite a low MELD score carry a high risk of mortality without a timely transplant.

Abstract# 377

A SINGLE CENTER EXPERIENCE USING DONATION AFTER CARDIAC DEATH DONORS OVER 60 YEARS OLD. Hani P. Grewal[1], Winston R. Hewitt[1], Justin H. Nguyen[1], Darrin L. Willingham[1], Barry G. Rosser[1], Andrew P. Keaveny[1], Jaime Aranda-Michel[1], Raj Satyanarayana[1], Denise M. Harnois[1], Rolland C. Dickson[1], Jeffery L. Steers[2], David B. Kramer[1], Christopher B. Hughes[1]. *[1]Department of Transplantation, Mayo Clinic Jacksonville, Jacksonville, FL, USA; [2]Transplant Surgery, Avera McKennan Transplant Institute, Sioux Falls, SD, USA.*

Donation after cardiac death (DCD) donors remain an underutilized source of organs for liver transplantation (LT). Concerns regarding primary non-function (PNF), and both biliary and vascular complications have contributed to the reluctance to use DCD donors especially when they are older.

Between 12/98 and 10/06, 1400 LT's were performed at the Mayo Clinic, Jacksonville. Of these 108 livers (13%) were transplanted using controlled DCD donors. Of these, 19 (18%) DCD donors were > 60 yrs old. A retrospective review of our experience with older (> 60 yrs) DCD donors was performed to determine both patient and graft survival and causes of graft loss. **Results: Donor and Graft characteristics:** For older DCD donors mean donor age was 65.5 (range 60 - 81). Mean cold and warm ischemic time were 6.5 hrs and 37 mins respectively. **Recipient characteristics:** Mean recipient age and raw MELD scores at the time of transplant were 56.6 (range 39 - 71) and 13.6 (range 9 - 22) respectively. For recpients of DCD donors > 60, 84% had at least 1 yr follow up.

The overall 1 and 3 year recipient and graft survival for DCD donors of all ages were 92% and 88% and 79% and 74% respectively. For older DCD's, the 1 and 3 yr patient and graft survival were 89.5% and 89.5% and 78.2% and 71% respectively. For DCD's < 60 yrs, the 1 and 3 yr patient and graft survival were 92.7% and 87.3% and 79.6% and 74.2% respectively, p = NS. Six grafts were lost in the older DCD group of which 4 patients were re-transplanted and are alive and well. Causes of graft loss in older DCD donors included biliary necrosis 3 (15.7%), recurrent HCV 2 (10.5%) and unknown 1.

Conclusions: Although firm conclusions cannot be drawn from our DCD experience with older donors because of small numbers, acceptable patient and graft survival appear to be obtainable using older DCD donors.

Abstract# 378

RESOURCE UTILIZATION BY DONATION AFTER CARDIAC DEATH LIVER TRANSPLANT RECIPIENTS. Lisa C. Arasi[1,2], Winston R. Hewitt[1], Juan M. Canabal[1,2], Hani P. Grewal[1], Justin H. Nguyen[1], Darrin L. Willingham[1], Christopher B. Hughes[1], David J. Kramer[1,2]. *[1]Transplant, Mayo Clinic, Jacksonville, FL, USA; [2]Critical Care, Mayo Clinic, Jacksonville, FL, USA.*

INTRODUCTION: Donation after cardiac death (DCD) donors are a potentially valuable source of organs for liver transplantation. Concerns regarding primary non-function, technical complications, and the potential for increased utilization of hospital resources caused by prolonged hospital admission and ICU stay have all resulted in a reluctance to use these organs. This study sought to investigate whether resource utilization, as judged by the need for ICU admission and hospital length of stay (LOS) was increased. Early patient and graft survival were also evaluated.

METHODS: 1496 liver transplants were performed in a single institution over the period February 1998 – November 2006. We retrospectively reviewed the charts of a convenience sample of the most recent 120 liver transplant recipients, of whom 60 received DCD grafts and recorded the age, liver disease, MELD, requirement for ICU admission, overall LOS, graft survival, and mortality. Data were analyzed using Chi-squared and unpaired T-test.

RESULTS: Baseline characteristics of the recipients in the DCD and non-DCD groups were similar: Mean (standard deviation) for the DCD and non-DCD, Age: 54.7 (11.7), 56.1 (10); MELD: 18.7 (8.3), 19.9 (10). Etiology of liver disease did not differ (DCD, non-DCD): cholestatic (5%, 18%), viral (45%, 22%), alcohol (22%, 17%), other (28%, 43%). Post-operative ICU admission was required by 23 (38%) DCDs and 27(45%) non-DCDs. Median LOS for the DCDs was 7 days with a range of 1-231 days post transplant. Median LOS for non-DCDs was 6.5 days with a range of 0-64 days, p=0.03. Early graft loss (<30 days) was the same for both groups (5%) and patient survival did not differ significantly: DCDs 54 (90%) and non-DCDs 58 (96%).

CONCLUSION: Donation after cardiac death is a means to expand the pool of acceptable organs for liver transplantation. Our data suggest that among similarly ill recipients, early graft loss and ICU admission rates are similar among recipients of DCD and non-DCD grafts. Although the median post transplant hospital length of stay was statistically significantly longer, this seems of little clinical importance.

Abstract# 379

USE OF CADAVERIC LIVERS FROM DONORS WITH REACTIVE HTLV SEROLOGY. Rodrigo M. Vianna, Richard S. Mangus, Jonathan A. Fridell, Joseph Tector. [1]*Surgery, Clarian Health Partners, Indiana University School of Medicine, Indianapolis, IN, USA.*

Introduction

Human T-cell lymphotrophic virus type 1 is associated with adult T-cell leukemia/lymphoma and with HTLV-1 associated myelopathy. UNOS has required routine screening for this virus in all U.S. organ donors since 1994. Current screening tests have a high false positive rate and positive results require confirmatory testing. Between 2003 and 2006, our center transplanted 13 cadaveric livers from donors with initially reactive HTLV serology.

Methods

The complete medical records of all 13 liver transplant recipients were reviewed, as well as the donor records from the local OPO. Eleven of the 13 donor livers were imported from outside our local OPO. Liver recipients consented to receiving livers from donors with initially reactive HTLV serology after appropriate education and counseling.

Results

Donor characteristics included median age 43, median BMI 25.9, female gender 11/13 (84.6%), non-White race 4/13 (30.8%), and death from stroke or anoxic brain injury 12/13 (92.3%). Confirmatory testing for HTLV in the organ donor was negative for 6/13 (46.1%), indeterminate for 3/13 (23.1%), or not done/not reported for 4/13 (30.8%). Recipient characteristics included median age 54, median BMI 29.9, female gender 5/13 (38.5%), non-White race 1/13 (7.7%), primary diagnosis HCV 7/13 (53.8%) with 2/13 having HCC (15.4%). Follow up HTLV testing in recipients was negative in 9/13 (69.2%), inconclusive in 3/13 (23.1%) and one patient died perioperatively of liver failure from ischemic necrosis. There are currently 12/13 (92.3%) patients alive with median follow-up time 14 months. None of the recipients has developed HTLV-associated leukemia/lymphoma or myelopathy.

Conclusions

HTLV-1 serologic testing is associated with a high false positive rate. Livers from patients with initially reactive HTLV serology may be used successfully in appropriate candidates.

Abstract# 380

USE OF HEPATITIS C-INFECTED DONORS IN LIVER TRANSPLANTATION: A CASE-CONTROL STUDY. Rodrigo M. Vianna, Richard S. Mangus, Jonathan A. Fridell, Kwo Y. Paul, Wilson Sidney, Joseph Tector. [1]*Surgery, Clarian Health Partners, Indiana University School of Medicine, Indianapolis, IN, USA.*

Background

To meet the increasing demand for cadaveric donor livers, some centers transplant livers from hepatitis C (HCV)-infected donors into recipients with HCV-related cirrhosis. This study utilizes a case-control design to compare transplant outcomes for 38 recipients of livers from HCV-infected donors to those for 76 standard, non-extended criteria (ECD) donors (1 case / 2 controls).

Methods

Data was extracted from the transplant center registry, UNOS data, and from the original on-site donor data chart. Thirty percent of all donors met non-ECD criteria (standard donors) and were included as potential matches for the case-control study. Each HCV-positive liver donor recipient was matched to two standard donor recipients as matched standard donor controls (MSDC) by: recipient age +/- 10 years, primary diagnosis, cancer stage for those with HCC, recipient MELD +/- 5, and donor age +/- 10 years. Outcomes included graft and patient survival at 3-months, 1-year and 2-years; perioperative death; and, HCV recurrence by 4-month and 1-year fibrosis (F0-F4).

Results

The HCV-donor and MSDC groups did not differ for recipient or donor demographics or in cold and warm ischemia time. Survival results and fibrosis progression are shown in the table. Median follow- up time was 36 months. Kaplan-Meier actuarial survival demonstrated improved graft survival for HCV-infected donors (p=0.10).

Survival analysis for hepatitis C-infected liver transplant recipients for donors previously infected with hepatitis C (n=38) or matched standard donor controls (n=76).

	Hepatitis C-infected donor	Matched standard donor controls (MSDC)	p-value*
TOTAL	n=38	n=76	
90-day survival			
Graft	37 / 38 (97.4%)	72 / 76 (94.7%)	NS
Patient	37 / 38 (97.4%)	72 / 76 (94.7%)	NS
1-year survival			
Graft	30 / 31 (96.8%)	62 / 72 (86.1%)	NS
Patient	31 / 31 (96.8%)	63 / 72 (87.5%)	NS
2-year survival			
Graft	16 / 19 (84.2%)	49 / 62 (79.0%)	NS
Patient	17 / 19 (84.2%)	52 / 62 (83.9%)	NS
Graft loss within 7 days	1 / 38 (2.6%)	1 / 76 (1.3%)	NS
Mean fibrosis at 4-months (F0-F4)	0.68	0.33	0.08
Mean fibrosis at 12-months (F0-F4)	0.86	1.05	NS
Percent change in fibrosis	26%	69%	

Conclusions

These preliminary results suggest that HCV-infected liver transplant recipients receiving livers from HCV-infected donors may have a slower rate of fibrosis progression at 1-year. A trend was seen in survival advantage for those receiving HCV-donor grafts compared to standard donor controls.

Outcomes

Abstract# 381

NO IMPROVEMENT IN LONG TERM SURVIVAL FOLLOWING LIVER TRANSPLANTATION. Geoff W. McCaughan, Simone I. Strasser, David Koorey, Nick Shackel. [1]*Australian Liver Transplant Unit, RPAH, Sydney, Australia.*

An analysis of the UNOS registry reported no improvement in long term allograft survival in patients undergoing liver transplantation in two different periods (1992-1996 vs. 1996 – 2002.The AIM of our study was to undertake a similar analysis using the Transplant Society of Australia and New Zealand data base. METHODS: Two different time periods were analyzed for patient and allograft survival. Only adult patients were analyzed. The two time periods were Period 1-1986—1994 (n=547) vs. Period 2-1995-2000 (n=735). This meant all patients had at least 5 years follow up post transplant. Two types of comparisons were undertaken using both true survival up to 5 years and predicted survival based on Kaplan Meier curves up to 10 years post transplant RESULTS : Over these 2 time periods there was a significant improvement in overall patient and allograft 5 year survival (72 to 81% patient; 65 to 77% -p <0.001). An analysis was then undertaken to censor all patients who died in the first 12 months post transplant leading to an analysis of survival between 1-5 years post transplant across these two time periods. When this was performed there was no difference in 1- 5 year survival across these periods (p<0.40 (patient and graft). Furthermore there were no differences in predicted 1-10 year survival in these two groups using Kaplan Meier survival curve comparisons. A similar analysis was then undertaken comparing HCV+ vs. HCV neg patients. Interestingly there was no improved survival in HCV + patients either across the whole time period or when an analysis was undertaken between 1-5 years or predicted survival between 1-10 years. In comparison HCV negative patients had an improved 1-5 year patient survival (p<0.05) and an almost significant predicted 1-10 graft survival (p<0.07). There was more patient death due to cardiovascular complications in period 1 vs period 2 (16% vs 3%).In SUMMARY: although there was evidence of significant improvement in overall patient and allograft survival over a 15 year period from 1986-2000 this mainly applied to improved 1year survival. Overall there was no improvement in patient or allograft survival beyond the one-year period, although a marginal improvement was seen between 1-5 years in patient survival for the HCV negative patients and there seemed to be less cardiovascular complications in these patients. In CONCLUSION : improved strategies are required to improve patient and allograft survival beyond the 1-year mark.

Abstract# 382

AN ANALYSIS OF ADULT PATIENTS FOLLOWED UP BETWEEN 10-20 YEARS POST LIVER TRANSPLANTATION.

Geoff W. McCaughan, Ainsle Mansell, Quin C. Fu. [1]*Australian Liver Transplant Unit, RPAH, Sydney, Australia.*

Background: Although it is well recognized that extra-hepatic medical conditions such as hypertension and renal dysfunction have emerged as major issues in the medium to long term in patients who survive beyond the first year post liver transplantation no studies have yet reported a detailed analysis of the medical profile of patients beyond the 10 year mark. Thus the Aim of this study was to report such outcomes in a group of adult patients who underwent liver transplantation between 1986-1996.Thus all patients reported here have a minimum post transplant follow up of 10 years Results: At 10 years post Liver Transplant there were 142/275(52%) surviving patients. The average age at transplant was 42.7 years and at follow up 56.7years.The mean follow up was 13.2 years (range10-19). The commonest indications for transplant were Autoimmune diseases (39%), Viral hepatitis (21%-HCV8%), and FHF (15%). 11 /142 (8%) had required retransplantation during the first 10 years. During follow up between 10-20 years 13 patients(9%) died .The causes of death were malignancy 25%, Cardiovascular 25% and allograft failure (25%). The 129 surviving patients had the following medical co morbidities: Hypertension 77%, malignancy 50%-75% of which was skin cancer), hypercholesterolemia 39%, hyperglycemia 36%, a BMI> 30 33%, elevated serum creatinine > 133 umol/l (28%)with only 3 patients on dialysis and 6 patients with a serum creatinine > 200 umol/l, elevated serum SAP 33% (5% >300IU/L) and elevated serum GGT 53% (12% > 200IU/L). With respect to continued immunosuppression: 63 % were on Cyclosporine, 29% on Tacrolimus and 8% on no CNI. 25 % patients were still on triple immunosuppression whilst 18% were on monotherapy. Of those on CSA 73% had trough levels < 100 ng.ml whilst of those on Tac 41% had trough levels < 5 ng/ml. In Summary 52 % of patients in this study survived until 10 years post Liver transplantation. Of those surviving there was 9 % mortality during follow. Of those surviving there was a high incidence of CVS risk factors and skin malignancy. However long term significant renal and allograft dysfunction was less common. In Conclusion Current patients surviving beyond 10 years post transplant are generally doing well but have significant medical co-morbidities that require complex interdisciplinary medical care. However it should be noted that HCV was an uncommon original cause for transplantation in these patients.

Abstract# 383

WHEN AND WHAT TO TRANSPLANT FOR OXALOSIS: LONG-TERM RESULTS OF 37 TRANPLANTS (KIDNEY TX ALONE [KTA], SIMULTANEOUS LIVER AND KIDNEY TX [SLK], AND/OR PRE-EMPTIVE LIVER TX PRIOR TO ESRD [PLT]) AT A SINGLE-CENTER.

Michael Hughes, Angelika Gruessner, Elizabeth Gross, Thanh Nguyen, Raquel Garcia-Roca, Raja Kandaswamy, Abhinav Humar, William Payne, Ranier Gruessner. [1]*Transplantation, University of Minnesota, Minneapolis, MN, USA.*

INTRODUCTION: Oxalosis is a metabolic defect in the liver leading to kidney failure in some pts. Traditionally, KTA was the only option offered. The purpose of the current study is to compare outcomes for KTA, SLK and PLT, and to determine whether liver tx should be performed to prevent progression to ESRD.

METHODS: From 2/76 to 11/03, 37 txs (29 KTA, 7 SLK, 1 PLT) have been performed in 24 pts at our center for oxalosis. Pt demographics were evaluated and outcomes determined by Kaplan-Meier analysis.

RESULTS: From 1976 to 1993, pts were only offered KTA. In 1992, we began performing SLK to correct the metabolic defect and thus prevent failure of the renal allograft. In 1997, a living donor LTx was perfomed to correct the metabolic defect prior to developing ESRD (PLT). 54.2% of pts have at least 10 yrs follow-up. Pts were similar in age at time of tx (median [range]: KTA 14.6 y/o (0.1-65.3), SLK 8.0 (0.1-39.0), PLT 1.0 (single pt), p=0.5.) Living donors accounted for 55.6% (20 of 36) of kidney txs and none of the liver txs (for SLK).

KTA resulted in 72.0% allograft loss (18 of 25 txs, 4 deaths with functioning renal allograft censored); 72.2% (13 of the 18) were due to recurrent disease. Renal allograft survival was 77.1% at 1 yr, 55.9% at 5 yrs, and 37.9% at 10 years. KTA was performed once in 14 pts, twice in 6 pts and three times in 1 pt. SLK resulted in only one renal allograft loss (not due to recurrent disease); this patient was re-tx'ed and still has a functioning allograft. For the single PLT, no renal failure has manifested.

Pt survival (for all three groups) was 95.7% at 1 year, 78.3% at 5 years and 69.1% at 10 years. Liver allograft survival is identical for SLK and PLT groups (SLK: 100% 1 yr, 100% 5 yr, 100% 10 yr; PLT [single patient alive with no allograft loss at 85.1 months follow-up]; p>0.05.)

CONCLUSIONS: KTA for oxalosis results in high rates of allograft loss; however, renal and liver allograft survival with SLK is excellent. Furthermore, as PLT effectively prevents the onset of ESRD in patients with oxalosis, it may limit the need for renal transplantation if increasingly more living and deceased donor liver txs are performed in the future.

Abstract# 384

EARLY STEROID WITHDRAWAL FOLLOWING LIVER TRANSPLANT FOR AUTOIMMUNE LIVER DISEASE: UPDATED EXPERIENCE IN 100 CONSECUTIVE PATIENTS.

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Early steroid withdrawal following liver transplantation has gained acceptance over past years. However, steroid withdrawal for liver transplant patients with liver autoimmune liver disease as their primary diagnosis is not commonly followed for fears of increased risk of rejection or recurrence of the primary disease. We present an update to our previous experience in over one hundred consecutive patients.

Methods: Retrospective analysis of a policy for early steroid withdrawal in consecutive patients using a tacrolimus based immunosupression protocol. Liver functions were monitored twice weekly in the first month and thereafter decreased to once weekly and later once a month. Rejection was suspected on elevation of liver enzymes. Mild clinical rejection was treated with increasing dose of tacrolimus, mycophenolate and/or rapamune. Moderate rejections were administered a steroid bolus. Steroid non responsive rejections were treated with use monoclonal anti lymphocyte therapy. After resolution of rejection, steroids were tapered and withdrawn when possible. Immunosupression was monitored using cylex assay and prograf levels. Outcomes were evaluated for rejection, disease recurrence, and patient and graft survival. Survival analysis was done using Kaplan Meir survival analysis and significance calculated using Wilcoxan Chi Square test from SAS. Results: From 1999 to 2005, 371 liver transplants were performed at NZTI of whom 103 (27%) had a primary diagnosis of autoimmune disease. Two patients expired in early post transplant period. One hundred and one patients were evaluated in this analysis. There were 32 males and 69 females. The mean age was 50.8 yrs (range 9.5 to 72.1 yrs) Mean follow up was 43.6 moths (range 4.3 to 91.7 months). Early steroid withdrawal was instituted beginning at 2 to 3 weeks following liver transplant. When steroid withdrawal was possible, patients were on tacrolimus and mycophenolate mofetil for long term maintenance immunosupression. Complete steroid withdrawal after transplant was done in 83 (82%) out of 101 patients. Steroids could not be withdrawn in 11 (11%) patients at the initial attempt after transplant. (8 patients unsuccessful withdrawal, not attempted in another 3 patients for unrelated reasons). Of those in who steroid was withdrawn, 73 (73%) patients, remained steroid free for the entire duration of follow up. Steroids were re-introduced in 16 (16%) patients. The time to steroid withdrawal was 3 months or less in 42 (56.8%) patients, 6 months or less in 57 (77%) and 65 (85%) within one year. The mean duration of steroid use was 170 days (range 15 to 1132 days). The reason for re-introduction of steroids in the 16 patients was as follows: 8 (8%) for acute rejection (of these 4 were not compliant with medications), 2 (2%) for recurrent auto immune disease and 6 for other reasons (PTLD, ulcerative colitis, other reasons). Of these 16 patients, steroid withdrawal was again pursued and was successful in 9 patients leaving only 6 patients on chronic steroid therapy. Biopsy proven acute cellular rejection was diagnosed in 31 (31%) patients. There were a total of 41 episodes of rejection with an average of 0.41 episodes per patient. Of these, 24 episodes were before and 17 after discontinuation of steroids. Of all acute cellular rejections, 20 (48.9%) were mild, 19 (46.3%) were moderate and 2 (4.8%) were severe. There were 4 (4%) patients with steroid resistant rejection who were treated with OKT-3. Biopsy proven recurrent auto immune disease was documented in 4 (4%) of the entire group of patients. Patient survival at 1 and 5 years were 91.7% and 80.2% for autoimmune and 91.0% and 82.7% overall. There was no significant difference noted.Conclusion: Contrary to common belief, steroids can be safely withdrawn following liver transplantation in patients with auto immune liver diseases with acceptable rates of rejection and low incidence of disease recurrence.

Abstract# 385

THE IMPACT OF OBESITY ON LONG TERM OUTCOMES IN ORTHOTOPIC LIVER TRANSPLANTATION RECIPIENTS – RESULTS OF THE NIDDK LIVER TRANSPLANT DATABASE. Jennifer R. Leonard[1], Julie K. Heimbach[1], Michael Malinchoc[1], Michael R. Charlton[1]. *[1]Liver Transplant, Mayo Clinic, Rochester, MN, USA.*

Background: Obesity and obesity-associated liver diseases (NAFLD) are increasingly common among liver transplant (LT) recipients. In the non-transplant setting, preoperative obesity is associated with increased perioperative morbidity and mortality. Although obesity has been reported to adversely affect post-LT outcomes, the impact of obesity on long-term outcomes following LT has been difficult to determine due to the confounding effects of ascites on BMI measurement. **Methods**: We evaluated the impact of pretransplant recipient obesity on morbidity and mortality in patients undergoing LT, using the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) Liver Transplantation Database. Data from a total of 697 primary liver transplant recipients, enrolled between 1990 to 1994, with follow up to 2002, were analyzed. Pretransplant BMI was calculated and corrected for ascites removed at the beginning of the operation. Patients were categorized to non-obese (BMI <25 kg/m2), overweight (BMI 25.1-30 kg/m2), Class I obese (BMI 30.1-35 kg/m2), Class II obese (BMI 35.1-40 kg/m2), and Class III obese (BMI >40 kg/m2). Patient and graft survival was prospectively collected at 30 days, then annually to 10 years. **Results**: Of 697 pts, 54 underwent retransplantation (20 retxs were followed by death) and 111 had death without retx, for a total of 165 events. Patient and graft survival was similar across all BMI categories. Calculated hazard ratios (HR) for mortality were 1.5 and 0.6 in the overweight group and the Class III obesity group respectively (log rank test P=0.26). In contrast, correcting for ascites volume resulted in 10-20% of patients moving into a lower BMI classification. Ascites volume was independently associated with increasing relative risk for mortality with a HR of 1.06 (6%) (1.01-1.10, P=0.014) for each liter of ascites removed. **Conclusions:** In contrast to previous reports, in this multicenter, prospective study, corrected BMI was not independently predictive of patient or graft survival. Obesity, within the ranges observed in this study, should not be considered to be a contraindication to liver transplantation in the absence of other comorbidities. Because of the strong correlation of ascites with increased posttransplant mortality, studies of the impact of BMI on post-LT outcomes should include corrected BMI values.

Abstract# 386

DOES SYSTEMATIC LATE BIOPSY (AFTER 10 YEARS) AFTER LIVER TRANSPLANTATION HAVE A CLINICAL IMPACT? Olivier Guillaud[1], Jerome Dumortier[1], Mustapha Adham[1], Valerie Hervieu[1], Jean-Yves Scoazec[1], Olivier Boillot[1]. *[1]Liver Tranplantation Unit, Edouard Herriot Hospital, Lyon, France.*

Nowadays, long term survival after liver transplantation (LT) can be expected for the majority of patients. Therefore, long term evaluation of the graft became one of the main concerns. In our LT centre, each patient has a systematic histological evaluation ten years after LT. The aim of this study was to evaluate its impact on the therapeutic management of the patients.

From October 1990 to June 1996, 194 patients were transplanted in our centre. Sixty-one patients died before 10 years, and 13 were lost of follow-up. One hundred and seven patients (89%) had a liver biopsy at ten years. The indication for LT was : alcoholic cirrhosis (n=42), hepatitis C (HCV) (n=22) or hepatitis B (HBV) (+/- hepatitis D infection) (n=21) -related cirrhosis, auto-immune hepatopathy (n=8), or miscellaneous (n=14).

The day of the biopsy, 77 patients (72%) had normal liver function tests (LFT) (including AST, ALT, GGT), 15 had elevated transaminases, 24 had increased GGT activity. Fifty patients (51.4%) (whose 24 with abnormal LFT) had significant histological abnormalities. Pathological findings included: steatosis >10% (n= 26), steato-hepatitis (n=10), significant fibrosis (≥F2) (n=30), late acute rejection (n=5), early chronic rejection (n=3), biliary abnormalities (n=6), other lesions (n=5). LFT abnormalities were significant predicative factors of histological lesions (p<0.001), fibrosis (≥F2) (p=0.007), acute rejection (p<0.001), chronic rejection (p<0.001) or steatosis (p=0.02). Obesity or history of alcoholic liver diseases were predicative factor of steatosis (p=0.03 and p=0.003) or steato-hepatitis (p=0.039 and p<0.001), whereas HCV infection was a predicative factor of severe fibrosis (≥F3) (p=0.016). Regarding the result of the biopsy, 26% of the patients had a change in their treatment (immunosuppressive therapy or other). Abnormal LFT (p<0,001) or significant histological lesions (p=0,009) were predicative of therapeutic adaptation. In case of normal LFT, 66% of the patients had no significant histological lesions and 81% had no therapeutic adaptation after liver biopsy.

Systematic ten-years protocol biopsy after LT allows to reveal a significant number of significant histological lesions. However its impact in the management of the patients with normal LFT is less important, because in this case, less than 20% of the patients had therapeutic adaptation after the biopsy.

Abstract# 387

IMPACT OF METABOLIC SYNDROME ON INTERMEDIATE TERM MORTALITY IN PATIENTS UNDERGOING LIVER TRANSPLANTATION FOR HEPATITIS C. Parvez S. Mantry, Thalia Mayes, Michael Kader, Benedict J. Maliakkal, Peter Abt, Adel Bozorgzadeh. *[1]Division of Digestive and Liver Diseases, Division of Solid Organ Transplantation, University of Rochester, Rochester, NY, USA.*

Introduction:

There is no literature on the impact of metabolic syndrome on survival especially in patients with chronic Hepatitis C undergoing liver transplantation. In pre-transplant patients, presence of obesity, diabetes, and hyperlipidemia are known to accelerate the disease course. It has been suggested that patients with Hepatitis C with underlying obesity may have a poor outcome after liver transplantation.

Methods:

We retrospectively reviewed the medical records of all patients with hepatitis C transplanted at our institution from 1/2000 through 9/2006. Demographic data, medical history, was obtained and a metabolic score (1-7) was determined for each patient using the following parameters: BMI>/=30 (2 points), diabetes mellitus (2 points), hypertension (1 point), hyperlipidemia, and coronary artery disease. Patients were then divided into two groups: metabolic score >/=3 (consistent with metabolic syndrome) and score <3. At the same time we reviewed the UNOS database of survival differences between patients with a BMI of greater than or less than 30 who underwent a liver transplant for Hepatitis C related cirrhosis

Results:

There were 274 transplants performed between at our institution during the study period. 53 patients had HCC, 32 were re-transplants and 4 died in the immediate postoperative period and were therefore excluded. The remaining 185 patients had a mean age of 50.2 years, had a mean BMI of 29.2 (range 18.6-42.5). 78/185 (42%) of patients had BMI >/= 30 and 107/185 (57%) had BMI <30.

Our survival analysis showed that the hazard ratio for BMI >/=30 was 0.86, indicating that obesity does not increase mortality post transplantation. The hazard ratio for metabolic score >/=3 was 1.6 suggesting that metabolic score may a more important predictor of mortality than BMI alone. However, this hazard ratio was not statistically significant (p=0.19).

The UNOS/ OPTN database reported a similar 1,3 and 5 yr survival between Hepatitis C patients with BMI more than and less than 30

Conclusion:

Our study suggests that metabolic syndrome and not obesity alone may adversely affect the survival of Hepatitis C patients after liver transplantation and therefore should be considered in prognosticating outcome pre-liver transplantation for patients with chronic Hepatitis C.

Abstract# 388

EFFECT OF PREOPERATIVE RESPIRATORY MUSCLE STRENGTH ON LIVER TRANSPLANT OUTCOME. Carla S. Machado, Paulo C. B. Massarollo, Eliane M. Carvalho, Maria R. M. Isern, Poliana A. Lima, Sérgio Mies, Aldo J. Rodrigues, Jr. *[1]Department of Surgery (LIM-02), University of São Paulo Medical School, São Paulo, SP, Brazil.*

Introduction: Maximal inspiratory pressure ($P_I$max) and maximal expiratory pressure ($P_E$max) were reduced in most patients with end-stage liver disease. In recipients of orthotopic liver transplantation (OLT), respiratory muscle weakness is worsened in the immediate postoperative period. In patients undergoing coronary artery bypass grafting, respiratory muscle weakness is associated with prolonged postsurgical mechanical ventilation and higher incidence of pulmonary complications. However, to our knowledge, no study has evaluated the effect of preoperative respiratory muscle strength on the postoperative course of OLT. **Aim:** To evaluate the effect of preoperative respiratory muscle strength on OLT outcome. **Methods:** We reviewed 228 deceased donors elective OLT performed between 28th December, 1994

and 30th July, 2001. $P_I$max e $P_E$max were assessed at residual volume and total lung capacity, respectively, immediately before OLT. Patients were classified according to the occurrence of muscle strength absolute values equal or lower than 50 mm Hg. The following response variables were analyzed: duration of postoperative mechanical ventilation, incidence of tracheal reintubation and noninvasive positive pressure ventilation, length of hospital stay and patient survival. **Results**: $P_I$max e $P_E$max were equal or lower than 50 mm Hg in 19.7% (45/228) and 14.5% (33/228) of patients, respectively. Patient mortality up to 6 months after OLT was 14.2% (26/183) in the group with $P_I$max > 50 mm Hg and 33.3% (15/45) in the group with lower values (p=0.003). The 1-, 3-, and 5-year patient survival was 84%, 77% and 71% for the group with $P_I$max > 50 mm Hg and 57%, 50% and 50% for the group with lower values (p=0.0024). In relation to $P_E$max, these probabilities were 80%, 74% e 69% for the group with higher values and 66%, 59% e 51% for patients with respiratory muscle weakness (p=0.1039). There is no significant difference regarding the others variables analyzed. **Conclusion:** Patients with low $P_I$max present higher mortality after OLT. However, there are no statistically significant effects of the preoperative respiratory muscle strength on the response variables more directly related with the pulmonary outcome.

Abstract# 389

OUTCOME OF A MANAGEMENT PROTOCOL FOR INTRACRANIAL HYPERTENSION IN FULMINANT HEPATIC FAILURE WITH EPIDURAL MONITORING, RECOMBINANT FACTOR VII AND HYPOTHERMIA.

Peter K. Linden[1], Shushma Aggarwal[2], Obaid Shakil[3], Richard Spiro[4], Raymond Planinsic[2], Amadeo Marcos[3]. *[1]Critical Care Medicine, University of Pittsburgh Medical Center, Pittsburgh, PA, USA; [2]Anesthesiology, University of Pittsburgh Medical Center, Pittsburgh, PA, USA; [3]Starzl Translant Institute, University of Pittsburgh Medical Center, Pittsburgh, PA, USA; [4]Neurosurgery, University of Pittsburgh Medical Center, Pittsburgh, PA, USA.*

The management of intracranial hypertension due to fulminant hepatic failure (FHF) remains controversial and non-standardized. We describe the outcome of FHF managed with factor VII and/or plasma, epidural intracranial pressure (ICP) monitoring and hypothermia.**Methods:** All patients admitted to our transplant ICU had clinical data prospectively entered into an ICU database (Foxpro). FHF patients were extracted by query during the 36-month period (10/03-10/06) when epidural ICPs were placed. Collected data included coagulation parameters and method of correction, initial and highest ICP, cooling method(s), transplant- and clinical outcomes. **Results:** Amongst 22 patients who met FHF criteria, 16 had epidural monitors (Aesculap) placed . Features included grade 3/4 encephalopathy (n=16), mechanical ventilation (n=16),shock requiring pressors (n=12) and renal failure on continuous hemofiltration (n =10). All were cooled by blanket (n = 9) or central venous cooling (Cool-GuardCatheter) n = 7) targeted to core temperature of 33-34^{oC}. Factor VII (30 ug/kg) ± plasma (n=8), plasma (n=8) and platelets (n=14) were infused immediately prior to placement. An INR < 1.2 was documented in 6/8 factor VII-treated patients. The median initial ICP was 32 mmHg (15-52) and the peak median ICP was 38 (18-76) . Mean arterial pressures were maintained ≥ 50 mmHg over ICP. Liver transplantation was performed in 14/16 patients after ICP insertion after a mean interval of 2 days (0-6). Eleven patients (79%) survived to discharge after transplantation. Two patients died intraoperatively from reperfusion syndrome. No patient progressed to cerebral herniation. One hemorrhage occurred at the external ICP catheter site but there were no intracerebral hemorrhages. **Conclusions:** Based on this small, non-controlled experience epidural ICP monitoring coupled with aggressive coagulation correction, induced hypothermia and maintenance of a 50 mmHg CPP threshold provided reliable management data and was not associated with attributable morbidity or mortality.

Patient Selection and Organ Allocation

Abstract# 390

CORRELATION BETWEEN SERUM CREATININE, COCKROFT FORMULA AND DIRECT MEASUREMENT OF GLOMERULAR FILTRATION RATE IN CANDIDATES FOR LT: IMPLICATIONS FOR MELD SCORE.

Claire Francoz[1], Dominique Prie[2], Richard Moreau[1], Rodolphe Sobesky[1], Daniele Sommacale[1], Federica Dondero[1], Jacques Belghiti[1], Dominique Valla[1], Francois Durand[1]. *[1]Hepatology and Liver Transplant Unit, Hospital Beaujon, Clichy, France; [2]Nephrology, hospital Necker, Paris, France.*

Backgrounds/aims: Impaired renal function is frequent in patients with end-stage cirrhosis and has a significant impact on early mortality risk. Serum creatinine is one of the 3 components of MELD score, a robust predictor of mortality on the waiting list for LT. However, patients with end stage cirrhosis frequently have muscular atrophy and water retention, which represent significant bias for the interpretation of indirect markers of renal function. GFR is likely to be under or overestimated by these indirect markers. The aim of this study was to compare indirect markers of renal function (SCr, Cockroft formula and MDRD formula) to direct measurement of GFR in cirrhotic patients listed for LT.

Patients and methods: 91 consecutive candidates for a first LT were studied. All patients had direct measurement of GFR using iohexol clearance as part of workup for LT. Twelve % of patients died on the waiting list, the remaining were transplanted after 5±3 months.

Results: SCr and calculated creatinine clearance according to Cockroft or MDRD formula were poorly correlated to measured GFR (R^2 of 0.6, 0.7 and 0.8, respectively). Cockroft formula overestimated creatinine clearance compared to direct measurement with a mean difference of 29±37 mL/min (p<0.001). In 47% patients, there was a 20% or more overestimation of GFR with Cockroft formula. Multivariate analysis showed that independent predictive factors for a 20% or more overestimation of GFR were low protrombin index, young age and ascites (p<0.05 for all). In 24% patients there was a 30% or more overestimation of GFR by MDRD formula compared to direct measurement. Overall, 11% patients with serum creatinine below 90 µmol/L had measured GFR below 70 mL/min.

Conclusions: SCr and calculated clearance using Cockroft or MDRD formula are inaccurate markers of GFR in cirrhotic patients awaiting for LT. Cockroft formula overestimates GFR by about 30%. Young age, low prothrombin index (or increased INR) and ascites are significant risk factors for overestimation. Since renal function is crucial prognostic factor in cirrhotic patients, prognostic studies using measured GFR as a reference rather than SCr might help improve the performance of MELD score.

Abstract# 391

PREDICTING EARLY TRANSPLANT FAILURE: A COMPARISON BETWEEN ARTIFICIAL NEURAL NETWORK AND LOGISTIC REGRESSION MODELS.

Vicente Ibáñez[1], Eugenia Pareja[2], Juan J. Vila[1], Antonio J. Serrano[3], Santiago Pérez[4], José Mir[2]. *[1]Pediatric Surgery Service, La Fe Children´s Hospital, Valencia, Spain; [2]Liver Surgey and Transplant Unit, La Fe Universitary Hospital, Valencia, Spain; [3]Electronic Engineering Department, Valencia University, Valencia, Spain; [4]Epidemiology and Statistics Unit, Valencian School for Health Studies (EVES), Valencia, Spain.*

Study's purpose

To compare diagnostic outcome between predictive models created through different mathemathical methods: neural networks (NN) and multivariate logistic regression (LR), and after their validation, to set clinical conditions in which a theoretical model would be preferable to assess organ allocation.

Methods

Models were generated to predict early liver transplant failure (90 days) using data from 701 transplants (August 1997-December 2003). Pediatric transplants, multiorganic transplants and special techniques (split liver or living donor transplantation) were excluded. Variables included: From donor: age, sex, death cause, days in ICU unit, use of vasoactive drugs, pH, steatosis degree and natremia. From recipient: age, sex, original disease, UNOS score, creatinine, bilirubin, prothrombin time, and Child-Pugh score. From operative period: cold and warm ischemia time, and packed red cell transfusion during surgery. Data were used to generate two predictive models for each method:

one including operative variables, and one without them. Models were validated in a new cohort of 170 transplants (August 2004-April 2006). Models were compared through their area under ROC curves.

Conclusions

NN models showed superior values even when operative variables were excluded.

Area under ROC curve with 95% confidence interval (CI)

	Generation cohort		Validation cohort	
	All variables	Operative variables excluded	All variables	Operative variables excluded
Logistic regression	0,75 (0,70-0,81)	0,70 (0,64-0,76)	0,70 (0,55-0,85)	0,55 (0,33-0,77)
Neural network	0,96 (0,94-0,97)	0,91 (0,88-0,94)	0,89 (0,82-0,97)	0,79 (0,66-0,91)

When applied to the validation cohort as a diagnostic test, results were: Sensitivity 57,1%, Specificity 79,1%, Positive predictive value 14,3%, Negative predictive value 96,8%, Accuracy 77,9%. Combined with a decision model, clinical limits for its use were stablished according to early transplant failure prevalence and patient's survival probability without transplant.

Abstract# 392

INCREASED SPLIT LIVER MATCHING POSSIBILITIES BY THE USE OF AN INTERNET-BASED NETWORK.

Roberto Valente[1], Enzo Andorno[1], Gregorio Santori[1], Tullia De Feo[2], Rita Ghirelli[1], Umberto Valente[1], SITF Project[1]. *[1]Department of Transplantation, San Martino University Hospital, Genoa, Italy; [2]Nord Italia Transplant, Policlinic Maggiore Hospital, Milan, Italy.*

Split Liver Transplantation (SLT) has become a crucial option to maximize the liver pool, while Organ Procurement Organisations (OPOs) usually allocate whole livers to single centers. In 2003, Italian Ministry of Health funded the 'SITF' project with the goal to establish sharing criteria for adult/adult SLT (SLT A/A), involving Italian transplant centers, the North Italy Transplant OPO and the Italian National Transplant Center. Larger series of adult/pediatric SLT have been reported in literature and recent SLT A/A survival rates are comparable to those of whole liver transplantation. In year 2005 SLT reached 12% of performed transplants in Italy.

SITF group defined donor/recipient inclusion criteria, setting minimum graft/recipient weight ratio (GRWR) at 1.2%. Donors and recipients on waiting list were shared on the Internet secured Split Liver Network (SLN). SLN performs realtime matches between the registered donor and all patients on the bases of GRWR, figuring hemiliver allocation once the whole organ is referred to owner center. We performed a retrospective simulation to search for recipient availability at time of donor notification among the nine transplant centers in the NITp OPO area in year 2005. 32 optimal donors and 613 non urgent recipients were selected. Blood group compatible recipient availability was analised and size matching performed for three separate GRBWRs (0.8%, 1%, 1.2%).

Users reported realtime optimal size matching as a SLN's strong point but root cause analisys detected criticality in isufficient consensus about clinical and organisational SLT A/A protocol. In the 2005 period, 47 donors and 124 patients were entered by nine centers, and six hemiliver allocations for three SLT A/A procedures were performed. By retrospective simulation, several matchable recipients were available for all donors, while blood group frequency seemed a determining factor, more than donor body weight, demonstrating a potential increase of matching possibility by the algorithm application.

SLN hemiliver allocation might increase matching possibilities, offering a timely transplant for recipients of rare group, small-size or in need of short wait. Our experience suggests that such an environment may be helpful to share a macroregional pool of liver recipients and to optimize SLT.

Abstract# 393

IMPACT OF PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION: AN INTENTION TO TREAT ANALYSIS FROM A SINGLE CENTER IN BRAZIL.

Eduardo Carone[1], Gilda Porta[1], Vincenzo Pugliese[1], Irene K. Miura[1], Eduardo A. Fonseca[1], Vera L. Baggio[1], Renata S. Pugliese[1], Joao Seda Neto[1], Alcides A. Salzedas[1], Massami Hayashi[1], Andre L. Godoy[1], Claudia M. Morais[1], Mario Kondo[1], Carla A. Matos[1], Rogerio C. Alves[1], Tereza Guimaraes[1], Marcos Beloto[1], Paulo Chapchap. *[1]Liver Transplant, Hospital do Cancer, Sao Paulo, Brazil.*

Low deceased donor availabilty and chronologic liver allocation system, which was adopted up to june 2006, are the main causes for high waiting list mortality in Brazil. In Sao Paulo state, death/(death + transplantation) ratio on the waiting list has been over 50%. In this setting, living donor liver transplantation (LDLT) has become the main resource for treatment of children with end stage liver disease in our center. The aim of this study is to evaluate the efficacy of pediatric LDLT as an intention to treat analysis. From Jun/02 to Jun/06, 207children (<18 years) were accepted for liver transplantation in our center. Patients with advanced liver disease (143) were considered for LDLT, whereas those with stable liver disease (64) were listed for deceased donor transplantation (DDT). A total of 132 patients underwent transplantation, 126/143 (88%) LDLTs, and 6/64 (9.3%) DDTs. No pretransplant death ocurred in patients awaiting DDT. Seventeen children indicated for LDLT died before transplantation due to: living donor nonavailability (9), and during living donor medical evaluation (8). Overall pretransplant mortality was 8.2% (17/207). The death/(death + transplantation) ratio was 11,4%, 17/(17+132). Three patients with chronic rejection and 6 with vascular thrombosis received a second graft (5 DDT and 4 LDLT). Complications occurred in 6% of the donors. There was no donor death in our series. Post-transplant patient and graft survival was 87% and 81% respectively, with a median follow up of 29 months (range 4 to 48 months). Intention to treat survival was 83.5% (17 pre TX + 17 post TX deaths out of 207 patients). LDLT has significantly reduced pre-transplant mortality allowing excellent post-transplant outcome. Therefore, the current liver transplant scenario in Brazil justifies an agressive policy towards pediatric LDLT.

Abstract# 394

INITIAL EXPERIENCE IN MELD-BASED ALLOCATION SYSTEM FOR LIVER TRANSPLANTATION IN SÃO PAULO, BRAZIL.

Ben-Hur Ferraz-Neto[1], Rogerio C. Afonso[1], Francisco Monteiro[2], Luiz A. Pereira[2]. *[1]Liver Transplantation Unit, Albert Einstein Jewish Hospital, Sao Paulo, Brazil; [2]Transplant Center, Secretariat of Health, Sao Paulo, Brazil.*

Background and Method: Since July 2006 the allograft allocation system in Brazil is based on Meld score and very sick patients should be transplanted and a possible negative impact on immediate postoperative survival is a concern. The aim of this study is to analyze the impact on early survival (3 months) of the Meld/Peld based allocation system for liver transplantation in São Paulo. Data were obtained prospectivelly from the Transplantation System, State of São Paulo Health Secretariat. Liver transplantation waiting list has 3919 patients and 2914 (74,35%) had updated Meld/Peld score. Among this patients (2914), 182 (6,2%) are under "special situation" (hepatocelular carcinoma, hepatopulmonary syndrome, familial amiloidotic neuropathy, liver adenomatosis and metabolic diseases), receiving Meld/Peld from 20 to 29.**Results:** Meld score was up to 10 in 1411 patients (50,6%), 1067 patients (38,2%) between 11 to 18, 162 patients (5,8%) between 19 to 24 and 151 patients (5,4%) over 25. Peld score was up to 5 in 73 patients (59,3%), 18 patients (14,6%) between 6 and 10, 15 patients (12,2%) between 11 and 14 and 17 patients (13,8%) ≥ 15. From July to November 2006, 121 liver grafts were transplanted in 129 recipients (8 split-liver) and 105 (81,4%) were adults. The graft allocation was due to emergency situations (13 fulminant hepatic failure and 9 early retransplantation) in 22 (17,05%), "special situation" in 46 (35,65%) and Meld/Peld score alone in 61 (47,3%).

Among Peld score patients (20), 1 patient (5%) had up to 5, 1 patient (5%) between 6 and 10, 2 patients (10%) between 11 and 14 and 16 patients (80%) ≥ 15. Among Meld score patients (41), 8 patients (19,5%) had between 11 to 18, 6 patients (14,65%) between 19 to 24 and 27 patients (65,85%) over 25.

Three months post operative interval are available in 49 patients and 11 (22,45%) died. Patient's Meld (7) score was 18, 20, 24, 30, 39, 40 and 47 and Peld (2) was 9 and 16. Two patients transplanted for fulminant hepatic failure also died. There was no difference in 3 months patient survival when compared to the period before Meld/Peld based allocation system.

Conclusion: Apparently, Meld/Peld based allocation system for liver transplantation does not jeopardize early survival rate. Longer follow-up is necessary to analyze the impact of Meld/Peld score.

Abstract# 395

SURVIVAL ANALYSIS OF HIV INFECTED PATIENTS REFERRED TO A LIVER TRANSPLANT UNIT. J. C. Duclos-Vallee[2], V. Delvart[1], F. Blandin[2], E. Teicher[3], T. Antonini[1], D. Azoulay[1], B. Roche[1], F. Saliba[1], P. Ichai[2], R. Adam[1], D. Castaing[1], D. Vittecoq[3], D. Samuel[2]. *[1]Centre Hepato-Biliaire, AP-HP Hopital Paul Brousse, Villejuif, France; [2]Unite 785, Inserm Universite Paris Sud 11, Villejuif, France; [3]Unite Fonctionnelle Infectiologie, AP-HP Hopital Paul Brousse, Villejuif, France.*

Introduction: Liver transplantation (LT) in HIV/HCV and HIV/HBV coinfected patients is now a frequent indication because of the severity of liver disease in this subgroup of patients. If LT is successful in HIV-positive patients receiving HAART, the death rate in the waiting list (WL) seems higher than in HIV(-) patients, the question of the ideal timing for liver transplantation is raised.

Aim: To study the survival of HIV positive patients after the first referral in a liver transplant unit.

Patients and methods: From December 1999 to September 2006, 99 HIV(+) patients, (mean age 43.3 ± 5.7 yrs), (HIV/HCV: n=75, HIV/HBV: n=8, HIV/HBV/HCV: n=8, fulminant hepatitis: n=3, nodular regenerative hyperplasia: n=3, indeterminate cirrhosis: n=1, secondary biliary cirrhosis: n=1) were referred to our LT unit. Patient survival analysis was performed using the Kaplan-Meier method. Variables as presence of ascites, encephalopathy, MELD score, Child score, calculated INR at the first referral (1Ref) and at the inscription (Inscrpt°) on the WL were studied in univariate and multivariate cox analysis.

Results: Among the 99 patients who have been referred to our center, 56 patients (56.5%) underwent LT, 16 patients (16%) died, 3 patients (3%) were dropped out from the WL et 24 (24%) patients are waiting for LT. No significative difference was noted concerning the following variables: MELD score (1Ref, Inscrpt°) calculated Child score (1Ref, Inscrpt°), rate of MELD score (MELD 1Ref-MELD Inscrpt°)/delay Inscrpt°-1Ref) between transplanted patients and patients who died on the WL. In univariate and multivariate analysis, presence of ascites and encephalopathy at the first referral were the two independent prognostic factors of survival (p=0.04).

Conclusions: The presence of encephalopathy or ascites are the main prognostic factors survival of HIV infected patients referred to a LT unit and influence for a better management before and after the referral to a liver transplant unit. Other score as Child and/or MELD scores must be calculated for this subgroup of patients.

Abstract# 396

RELATION BETWEEN SERUM CREATININE AND GLOMERULAR FILTRATION RATE IN PATIENTS WAITING FOR LIVER TRANSPLANT. Alfeu M. Fleck, Jr.[1], Claudio A. Marroni[1], Ajacio B. M. Brandao[1], Guido P. C Cantisani[1], Maria Lucia Zanotelli[1], Eduardo Schlindwein[1], Ian Leipnitz[1], Tomaz J. Grezzana Filho[1], Mario M. M. Meine[1], Ana Luiza Gleisner[1], Osvaldo E. Anselmi[2], Clarice Luz[2]. *[1]Grupo de Transplante hepático Adulto ISCMPA, Irmandade da Santa Casa de Misercórdia de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil; [2]Serviço de Medicina Nuclear, Irmandade da Santa Casa de Misercórdia de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil.*

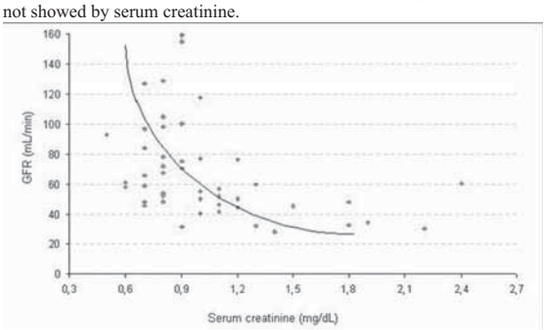
Background: Chronic liver diseases often are followed by renal impairment. So many diagnostic methods are used to renal function evaluation. Most used are serum creatinine and endogenous creatinine clearence. However, in cirrhotic patients these methods are not precise tests to renal function evaluation. The gold-standard method for renal function evaluation is glomerular filtration rate (GFR) measure using radioisotopes.

Objective: Evaluate GFR using ^{51}Cr-EDTA and its relation with serum creatinine, in patients on a liver transplant waiting list.

Patients and Methods: Evaluated adult patients on a liver transplant waiting list. Measure GFR using ^{51}Cr-EDTA.

Results: 49 patients on a liver transplant waiting list were studied. The average age was 53 years old and 63,3% were male. Indication for liver transplant was HCV cirrhosis in 70,6%. Most (59,6%) was Child-Pugh B and 26,5% had diabetes. Eight patients (16,3%) had hepatocellular carcinoma. Mean serum creatinine was 1,02 ± 0,4 mg/dL (0,5 - 2,4 mg/dL); 85,7% showed normal serum creatinine (≤ 1,3 mg/dL) and in 65,3% it was bellow 1,0 mg/dL. Mean GFR was 66,7 ± 31,0 mL/min (28,3 - 159,1 mL/min), 22,4% showed normal GFR (≥ 80 mL/min) and 53,1% showed GFR bellow 60 mL/min.

Conclusions: In cirrhotic patients, serum creatinine is not a precise test to evaluate renal function. It was observed a higher estimation of renal function with serum creatinine. No relation between serum creatinine and GFR was observed. Most liver transplant candidates have renal impairment function, not showed by serum creatinine.



Abstract# 397

LT FOR HCC: VALIDATION OF A NEW PROGNOSTIC SCORE PREDICTING DISEASE-FREE SURVIVAL. French Study group of LT for HCC. *[1]Hopital Henri Mondor, Creteil, France.*

Aim: To provide a new prognostic score for refining the prediction of disease-free survival after LT for HCC, using variables assessable pre-operatively and to compare the prognostic value of this model with Milan criteria.

Patients and Methods: The prognostic model was derived from the multivariate Cox model analysis of a series of 373 patients (training cohort (TC)) without portal thrombosis, transplanted for HCC (1988-1998) in 14 centers. 3 independent predictors were identified: maximal diameter (p<0.0001), tumor differentiation (p<0.0001) and number of nodules (p=0.0001). Regression coefficients were estimated for each class of the variables, and a discrete prognostic score was derived. The score was subsequently simplified by linear transformation of the regression estimates (table). Two different prognostic groups were identified on the TC: group A ≤ 3 points and group B ≥ 4 points. The score was subsequently tested in a validation cohort (VC) of 128 patients transplanted for HCC (1999-2001) in 7 centers.

Results: Overall 5-year survival rate was 61.0±2.6% in the TC and 83.8±2.9% in the VC (p=0.0001). In the TC, 5-year DFS was 66.8±3.2% in group A_{TC} and 42.6±5.0% in group B_{TC} (p<0.0001). The difference between the 2 groups persisted in the VC despite an overall better prognosis: 5-years DFS: 86.6±7% vs 57.9±11.5% in groups A_{VC} and $B_{VC,}$ respectively (p=0.026). In addition, although 5 year DFS was significantly better in group A_{TC} vs group A_{VC} (p= 0.004), it did not differ between group B_{TC} and group B_{VC} (p=0.22). In the VC, (a) among the Milan+ patients, 94 patients were in group A and 4 in group B with a 5-year DFS of 87.2±3.4% and 50.0±25.0% respectively (p=0.017) and (b), in Milan negative patients, 15 patients were in group A and 15 in group B with a 5-year DFS of 100.0±0.0% and 60.0±12.6%, respectively (p=0.01).

Conclusion: This study shows that the use of a prognostic model taking into account tumor differentiation improves Milan criteria accuracy and suggests that incorporation of tumor differentiation in the decision–making algorithm for selection of HCC candidates must be considered.

Score presentation

Number of nodules	1 = 0	2 or 3 = 1	4 or more = 2		
Max diameter of nodule	< 2 = 0	2-3 = 1	3-5 = 2		> 5 = 5
Tumor differentiation	well = 0	moderate = 1		poor = 3	

Abstract# 398

LIVER TRANSPLANTATION WAITING LIST MORTALITY AND ITS CHARACTERISTICS IN A BRAZILIAN CENTER.

Samanta Teixeira Basto[1], Joaquim Ribeiro[1], Renata Perez[1], Cristiane Villela-Nogueira[1], Denise Costa[1], Norma Mendes[1], Gerson Carreiro[1], Ana Lucia Ramos[1], Silvio Martins[1], Vilson Lemos, Jr.[1], Marcos Martins[1], Eduardo Fernandes[1], Emilia Nascimento[1], Henrique Sergio Coelho[1]. *[1]Hepatology, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil.*

Background: The MELD score model has been adopted in Brazil since July 2006, changing from a chronological waiting list for liver transplantation. In order to better recognize the impact of this change, an evaluation of the mortality rate until then should be performed.

Objective: To describe the mortality rate as well as the demographic and clinic characteristics of the waiting list for liver transplantation in a University Hospital since the beginning of the transplantation program in 1997.

Patients and Methods: From Nov 1997 to Jul 2006, all patients in the liver transplantation waiting list were included. The variables analyzed were: sex, age, blood group, body mass index, disease etiology, hepatocellular carcinoma (HCC) and waiting time for transplant (in days). Possible outcomes were: death, exclusion, transplantation or active. Statistical analysis was performed using Chi-square test, Student's-t test and Mann Whitney's test. A 5% significance level was adopted.

Results: From the1478 patients listed for liver transplantation, 62% were male, with a mean age of 51±13 years old. Concerning liver disease etiology, 48% had chronic hepatitis C, 14% alcohol ingestion, 7% cryptogenic, 6% chronic hepatitis B, 4% autoimmune hepatitis, 4% cholestatic diseases and 2% steato-hepatitis. The median waiting time in list was 407 days (0-1455). Among the listed patients, 8% were excluded, 18% had been submitted to a liver transplant, 30% died and 44% are still in list. The mortality rate progressively rose since 1998 until 2003, from 17% to 49%, according to the year of listing. There was no statistical association between mortality and sex, blood group or IMC. The variables associated with a greater mortality were age ($p<0.001$), HCC diagnosis ($p=0,025$) and virus-related compared with no-virus related etiology (33% vs. 27%, $p=0,009$).

Conclusion: Both the mortality rate and the waiting time in the transplant list are high in our setting. Probably the MELD score implementation may change this scenario.

Pediatric Liver Transplantation: The Unique Challenges

Abstract# 399

LESSONS LEARNED FROM 200 CONSECUTIVE PRIMARY PEDIATRIC LIVER TRANSPLANTATIONS WITH LEFT LATERAL SEGMENT SPLIT GRAFTS.

V. Corno[1], M. C. Dezza[1], A. Lucianetti[1], G. Maldini[1], D. Codazzi[1], D. Pinelli[1], M. Zambelli[1], M. Guizzetti[1], M. Giovanelli[1], M. L. Melzi[1], P. Stroppa[1], M. Candusso[1], D. Alberti[1], G. Torre[1], M. Colledan[1]. *[1]Liver and Lung Transplantation Center, Ospedali Riuniti, Bergamo, Italy.*

Introduction: Orthotopic liver transplantation is an established procedure for the treatment of children with end stage liver disease. Use of split liver grafts have reduced mortality on the waiting list to near 0%. **Methods:** From October 1997 to July 2006 we performed 327 liver transplants in 290 children. A total of 257 (79%) split liver graft were used. We analyzed 200 consecutive children (median age 0,97, range 0,08-14,55 years; weight median 8, range 2,3-35 kg) who received a left lateral segment graft as a primary isolated liver transplant at our Center (188 in situ split, 10 reduced size, 2 ex situ split). Indications for transplantation were biliary atresia in 128 (64%) children, Alagille syndrome in 17 (8,5%), Byler's disease in 8 (4%), cancer in 9 (4,5%), cryptogeneic cirrhosis in 6 (3%), fulminant or acute liver failure in 12 (6%), metabolic diseases in 7 (3,5%) and others in 13 (6,5%) cases. Among the recipients 15 (7,5%)children were UNOS status 1, 14 (7%) in status 2A, 71 (35,5%) in UNOS status 2B and 100 (50%) in status 3. **Results:** Apart from UNOS status 1 no child died on the waiting list. Overall patient/graft survival at 3 months, 1 year and 5 years was 93/88%, 90/85% and 88/82% respectively. Considering separately the periods of the years 1997-2003 and 2004-2006, 1 year patient/graft survival were 88/83% and 96/91% respectively. Incidence of hepatic artery thrombosis was 4,5% (9 cases) Re-transplantation was performed in 8 cfhildren and was successful in 6. Overall the incidence of biliary complications was 30% (stenosis of the anastomosis 16,5%, anastomotic fistula 5,5%, leakage from the cut surface 4,5%, bile collection 3,5%). A surgical re-intervention was required in 15 (7,5%) patients. **Conclusion:** Use of left lateral segment from split liver grafts revealed to be the technique of choice for pediatric liver transplantation. Also at a high volume split procedures center a continuous learning curve and technical improvements allowed for these short and long term results. Biliary complications still remains the "Achilles' heel" of the split liver grafts but they don't seem to have a negative impact on patients and grafts survival.

Abstract# 400

OPTIMIZING OUTCOMES IN PEDIATRIC LIVER TRANSPLANTATION BY GRAFT SELECTION: ANALYSIS OF UNOS/OPTN DATABASE.

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Aims: Efforts to overcome the limited source of appropriately matched whole deceased donor (DD) organs have resulted in use of reduced (R), split (S), and living donor (LD) liver grafts. In small children, LD grafts have previously given superior outcomes compared to other types of grafts from deceased donors. However, we hypothesized that similar survival could be obtained in deceased donor grafts with careful donor selection.

Methods: The UNOS/OPTN Liver Transplantation Registry between January 1996 and May 2006 was investigated. Pediatric recipients up to 3 years old were included. DCD LT was excluded. Potential risk factors were examined in each group. Cox proportional hazards model was used to identify independent risk factors in multivariate analysis.

Results: Among 3,376 LT, 1807 (53.5%) cases were DDLT, 527 (15.6%) cases were SLT, 407 (12.1%) cases were RLT, and 635 (18.8%) cases were LDLT. Non-adjusted graft survival of LDLT was superior to those of other types (DDLT: HR=1.510, $p<0.001$; SLT: HR=1.760, $p<0.001$; RLT: HR=1.814, $p<0.001$). Among potential donor variables, donor age ≤ 1 yr (ref.: 1-10 yrs, HR: 1.444, $p=0.001$) or > 10 yrs (HR: 2.393, $p<0.001$), black donor (HR: 1.320, $p=0.017$) increased the risk in DDLT in multivariate analysis. In SLT, donor age > 30 yrs (HR: 1.549, $p=0.022$) and long cold ischemia time (ref.: ≤ 5 hrs, 5-8 hrs; HR=2.165, $p=0.004$, 8-10 hrs; HR=2.242, $p=0.008$, > 10 hrs; HR=2.972, $p<0.001$) were significant. In RLT, donor age ≤ 5 yrs (reference: 5-15 yrs, HR=1.612, $p=0.05$) and donor age > 15 yrs (HR=2.163, $p=0.002$) increased the risk. However, in DDLT, the cases with donor age 1-10 yrs showed comparable outcome with LDLT (HR of DDLT=0.945, $p=0.749$) when recipient and other potential variables were adjusted. In SLT, the cases with donor age ≤ 30 yrs and ≤ 8 hrs of cold ischemia showed comparable outcomes (HR of SLT = 1.185, $p=0.359$). In RLT, the survival of the cases with donor age 5-15 yrs was comparable with that of LDLT (HR=1.053, $p=0.816$).

Conclusion: In pediatric LT, appropriate selection of deceased donors along with reducing cold ischemia time can bring comparable outcomes to that seen with LD grafts. These findings suggest that various types of grafts from deceased donors can give equivalent results to LDLT and may currently be an underutilized source of grafts for pediatric recipients.

Abstract# 401

PREDICTORS OF SURVIVAL FOLLOWING LIVER TRANSPLANTATION IN CHILDREN LESS THAN 1 YEAR: A SINGLE CENTER ANALYSIS OF OVER 200 CASES.

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Background: Liver transplantation (LTx) is the standard treatment of liver failure in children. Infants with ESLD represent a particularly challenging & understudied group of patients. This retrospective review aimed to describe a large single center experience with LTx in children <12 months & to determine pre-transplant factors which influence patient survival.

Methods: Inclusion criteria was isolated LTx recipients < 12 months of age at the time of LTx. Over 20 pre-LTx demographic, laboratory, & operative variables of donors & recipients were analyzed using Log-Rank Test & Cox's Proportional Hazards Model.

Results: Between 1984-2006 216 LTx were performed in 186 children. 50% were female, 50% Latino, & the median age was 8.2 mo. Cholestatic liver disease accounted for 60% of the indications for LTx. 42% were hospitalized in the ICU pre-LTx. Graft types were whole (56%) & segmental (34%).

Indications for re-LTx (n=30) included vascular complications (43%) graft nonfunction (40%), immunologic (7%), & other (10%). Leading causes of death were sepsis & multi-organ failure.
Mean follow-up time was 62 months. Patient & graft survival are shown below:

Time (months)	1	3	6	12	60	120
Graft Survival (%)	83	80	78	75	72	68
Patient Survival (%)	88	83	79	79	77	75

The following were significant univariate predictors of patient mortality: age < 6 months, calculated CrCl <90, INR > 1.5, PELD >25, hospitalization pre-LTx, mechanical ventilation pre-LTx, repeat LTx, cold ischemia time > 600 minutes & infants transplanted between 1984-1994. In multivariate analysis, significant predictors of worse patient survival were: mechanical ventilation, & repeat LTx.
Conclusions: Overall patient survival for infants undergoing LTx is excellent. As the largest, single center analysis of LTx for children < 12 months this study ellucidates a unique set of predictors of patient survival including mechanical ventilation & retransplantation. The factors identified can aid clinicians & surgeons in medical decision making needed for optimal utilization of scarce donor organs.

Abstract# 402

LESSONS LEARNED FROM 100 CONSECUTIVE LIVING DONOR LIVER TRANSPLANTATIONS FOR BILIARY ATRESIA IN A SINGLE CENTER.

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Background and objective: Biliary atresia (BA) is the most common indication for liver transplant in children. The aim of this study is to present our experience in living donor liver transplantation (LDLT) as a treatment for end-stage liver disease in children with BA.
Patients and methods: A review of transplant records from June1994-September 2005 was performed. One hundred (100) BA patients underwent primary LDLT. The mean follow-up period was 85 months.
Results: There were 52 males and 48 females. The mean age was 2.4 years (range: 6 months-19 years). The mean preoperative weight, height and computed GFR were 12.2 kg, 82.5 cm, and 116.4 ml/min/1.73 m^2, respectively. 27 patients were below 1 year of age, and 49 patients were below 10 kg at time of transplantation. 96 had had previous Kasai operation prior to transplant. The most common co-existing medical condition was congenital heart disease. The mother was the most common donor. The mean donor intraoperative blood loss was 66.7 ml. There were 3 donor complications with 1 donor reoperation. The mean recipient operative time was 628 min. The mean recipient intraoperative blood loss was 170 ml. 35 did not require blood or blood component transfusion. The left lateral segment (64) was the most common graft used. 20 grafts underwent venoplasty prior to implantation. Innovative techniques like use of Foley catheter to reposition the graft in outflow problems and use of Gore-Tex to approximate the abdominal fascia were employed. There were 27 operative complications which included 3 reoperations for postoperative bleeding, 9 portal vein, 4 hepatic vein, 4 hepatic artery, and 7 biliary complications. There were 1 in-hospital mortality and 1 retransplantation. Most major late complications occurred in recipients who received blood transfusion. The posttransplant renal function was adequate in a majority; and metabolic disturbances were not documented. The overall rejection rate was 20%. the overall mortality rate was 3%. The 6-month, 1-year, and 5-year actual recipient survival rates were 99%, 98%, and 98%, respectively.
Conclusion: LDLT is a treatment for end-stage liver disease secondary to BA that has yielded excellent recipient outcome and low donor morbidity.

Abstract# 403

FOURTY TWO PEDIATRIC LIVER TRANSPLANTS FOR α-1-ANTITRYPSIN DEFICIENCY: LONG-TERM OUTCOMES AT SINGLE CENTER.

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INTRODUCTION: α-1-antitrypsin deficiency (A1AT) is a rare metabolic disorder characterized by liver failure during childhood requiring liver transplant (LTx) in a subset of patients. The aim of this study was to assess outcomes after LTx for A1AT and to compare the results with those of LTx for BA (biliary atresia) as this is the most common indication for pediatric LTx.
METHODS: Between 1969 and 2006, 42 LTx were performed in 35 pediatric pts (the largest single-center series in the literature) (10 additional LTx in 9 adults were excluded from the analysis.) These pts were compared with BA pts (129 txs in 116 pts.) Pt and graft survival for both groups were determined according to Kaplan-Meier analysis.
RESULTS: More than 50% of pts had >10 years of follow-up. A1AT pts were older than BA pts at the time of LTx (3 y/o: 40.0% vs. 81%; 4-10 y/o: 45.7% vs. 12.9%; 11-17 y/o: 14.3% vs. 6.0%; p<0.0001); they were more often re-transplanted (14.3% vs. 11.2%, p=0.03) and more frequently underwent simultaneous kidney tx (8.6% vs. 0.0%, p=0.03.) There were no differences in gender, donor type or dialysis dependency (p>0.05.) A1AT pts were transplanted earlier in the course of their liver failure (median INR: A1AT 2.7 (range 0.30 - 46.10) vs. BA 9.7 (0.70 - 31.80), p=0.005.)
Overall pt survival was greater for A1AT than for BA at all time points (1 yr: 82.7% vs. 70.0%, 5 yrs: 76.5% vs. 60.3, 10 yrs: 76.5% vs. 55.9%; p=0.03); however, graft survival was no different (1 yr: 68.4% vs. 66.2%, 5 yrs: 68.4% vs. 55.8%, 10 yrs: 68.4% vs. 52.5%; p=0.2.) Era of LTx had a large impact on outcomes for A1AT with pt survival improving dramatically as techniques and immunosuppression evolved. Pt survival improved from 33.3% between 1969 and 1984 (pre-CSA) (n=6) to 71.0% between 1985 and 1994 (CSA) (n=17) and finally to 100% between 1995 and 2006 (tacrolimus) (n=12) (p=0.007.)
CONCLUSIONS: As overall patient survival is greater for A1AT than for BA without any differences in graft survival and A1AT pts are more often re-transplanted, the better patient survival for A1AT appear dependent upon organ availability. As BA patients were transplanted with a greater degree of liver dysfunction, the better outcomes of A1AT over BA may diminish with time with the current PELD score system.

Abstract# 404

PROSPECTIVE RANDOMISED CONTROLLED TRIAL OF MYCOPHENOLATE MOFETIL AS A PRIMARY IMMUNOSUPPRESSANT WITH TACROLIMUS IN PAEDIATRIC LIVER TRANSPLANTATION RECIPIENTS.

Sanjay Bansal[1], Anita Verma[1], Nigel Heaton[1], Mohammed Rela[1], Anil Dhawan[1]. *[1]Paediatric Liver Centre, King's College Hospital, London, United Kingdom.*

Aim : To evaluate the efficacy of Mycophenolate Mofetil (MMF) as an additive primary immunosuppressant to Tacrolimus and steroid based immunosuppression in children receiving liver transplantation (OLT).
Methods : Forty (16 boys) children were prospectively randomised between Group A (Tacrolimus + steroids, n=20) and Group B (Tacrolimus + MMF + steroids, n=20). Children were monitored for the incidence of rejection, sepsis, renal function (^{51} Cr-EDTA GFR) pre transplant and 1 yr post OLT and side effects of MMF.
Results : Median age at the time of transplantation was 1.97 (range 0.46 – 13.5) years. The indications for transplantation were biliary atresia (26), alpha-1-antitrypsin deficiency (3), progressive familial intrahepatic cholestasis (3), Neonatal sclerosing cholangitis (2), Criggler Najjar syndrome (2), Alagille syndrome (2), metabolic liver disease (1), cystic fibrosis (1). The median follow up period was 2.15 (range 0.43 – 5.4) years. There was no significant difference in graft and patient survival between the 2 groups. The incidence of acute cellular rejection (ACR) was 55% in Group A and 30% in Group B (p=0.3). The incidence of viral, bacterial and fungal infections in Group A and B was not different. Pre transplant median GFR in Group A and Group B were 130.5 and 117 ml/min/1.73m^2 respectively (p=0.9). 1 year post OLT GFR were available in only 14 in Group A and 15 in Group B. In Group A,

GFR fell down from a median of 130.5 (pre transplant) to a median of 101 ml/min/1.73m^2 1 year post OLT (p=0.03) whereas in Group B, GFR was unchanged from a median of 117 ml (pre transplant) to a median of 120.5 ml/min/1.73m^2 1 year post OLT . Side effects of MMF; diarrhoea, leucopenia and aplastic anemia were observed in 6, 1 and 1 patient respectively leading to suspension of MMF in 2.

Conclusions : The use of MMF as an additive primary immunosuppressant to a Tacrolimus + steroid based immunosuppression is associated with better preservation of the renal function 1 year post OLT and may lower the incidence of ACR without any significant side effects.

Abstract# 405

THE PSYCHOLOGICAL CONSEQUENCES OF LIVER TRANSPLANTATION DURING ADOLESCENCE. Rachel M. Taylor[1], Linda S. Franck[2], Faith Gibson[2], Anil Dhawan[1]. *[1]Paediatric Liver Centre, King's College Hospital, London, United Kingdom; [2]Centre for Nursing and Allied Health Professions, Institute of Child Health, London, United Kingdom.*

Aim: To determine the psychological impact of liver transplantation (LT) and its consequence on quality of life (QoL)

Methods: Fifty-five adolescents aged 12 - 18 years were invited to participate 6 months or more post-LT. QoL was measured by self-report using the Child Health Questionnaire (CF87). Three aspects of psychological function were also measured by self-report: emotional health using the Children's Depression Inventory (CDI), self esteem using the Piers Harris Self-Concept scale (PH2), and behaviour using the Strengths and Difficulties Questionnaire (SDQ). The CF87 was reduced to 3 domains using factor analysis. Factor analysis revealed 3 main domains for the CF87: physical, psychological and social. Regression analysis was used to examine the relationship between the psychological factors and QoL domains.

Results: The mean age at the time of study was 15 ± 1.9 years; 21 (38%) were male. The mean time since transplantation was 7.5 ± 4.2 years. Eleven had received psychological support 1 - 5 years prior to the study. QoL in the sample was significantly worse than the general population (range 8 - 23 points; p=0.03) in all but Role/Social-Behavioural and Family Cohesion domains. The CDI and PH2 scores were not significantly different from the normal range (8.1 ± 6.2 vs. 9.2 and 42.7 ± 10.3 vs. 44.6 ± 10.2, respectively; p = ns) although 75% and 54% of the sample, respectively, had below average scores. The SDQ was significantly worst than the normal range (19.6 ± 4.7 vs. 10.3 ± 5.2, p<0.001), with 44% of adolescents scoring in the abnormal range and 40% borderline. Those adolescents who had received psychological support had significantly lower QoL and self esteem compared to those who had not. In the regression analysis, the SDQ did not predict any aspect of QoL. The CDI predicted negative psychological and social aspects of QoL (ß -3.0 and -2.8, p≤0.02) whereas the PH2 positively predicted psychological and physical aspects of QoL (ß 1.6 and 1.9, p<0.05).

Conclusion: In adolescents after liver transplantation emotional problems, low self esteem and behavioural difficulties contribute to a poor QoL.

Abstract# 406

BLOOD TRANSFUSION-FREE PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION: DECREASING THE INCIDENCE OF MAJOR LATE COMPLICATIONS. Chao-Long Chen[1], Allan M. Concejero[1], Chih-Chi Wang[1], Shih-Ho Wang[1], Yueh-Wei Liu[1], Chin-Hsiang Yang[1], Chee-Chien Yong[1], Amornetta Jordan[1]. *[1]Liver Transplant Program, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.*

Background and Objective: An analysis of the outcome of the immunosuppressive effect of blood transfusion on early and late complications remains to be elucidated. Our objective is to present the outcome of our pediatric live donor liver transplantation (LDLT) with and without perioperative blood transfusion of blood or blood components.

Patients and Methods: A record review of 125 pediatric LDLT from June 1994-September 2005 was done. The outcome and follow-up of the recipients were prospectively collected. Outcome analyses included perioperative complications, early and late complications, major and minor complications, acute rejection, and mortality. Univariate and multivariate analyses were performed.

Results: There were 100 biliary atresia, 10 neonatal hepatitis, 10 glycogen storage disease, 2 Alagille syndrome, 1 Wilson's disease, 1 cryptogenic cirrhosis, and 1 fulminant hepatic failure patients. 45 recipients did not received intraoperative transfusion of blood or blood components (Group I); whereas, 80 (Group II) received transfusion. The demographic characteristics showed that Group II were younger (41.0 months vs 54.7 months), smaller (14.3 kg vs 15.1 kg), and sicker (PELD 15.4 vs PELD 9.2) and were significant. There were no differences in the operative indices except in the amount of blood loss (Group I, 93.8 ml vs Group II, 291.0 ml) and blood transfusion given. There were no significant differences in the operative complications. There was no significant relationship between blood transfusion and operative complications. Major late complications were significantly more in Group II (27 vs 9) which included re-laparotomies for bowel obstruction and perforation, development of de novo hepatitis B infection, posttransplant lymphoproliferative disorder, idiopathic thrombocytopenic purpura, and CMV disease. Blood transfusion was a factor in the occurrence of major late complications. 6 of the 7 mortalities occurred in Group II. The mean follow-up in this series was 70.4 months. The actual survival rates were 98%, 97%, and 97% at 6 months, 1 year, and 5 years, respectively.

Conclusion: Blood transfusion increased the incidence of postoperative major late complications whose etiopathologic mechanisms implicate the immunosuppressive role of blood and its by-products in host immune responses.

Abstract# 407

HIGH INCIDENCE OF DUCTOPENIC REJECTION IN CHILDREN TRANSPLANTED FOR IDIOPATHIC ACUTE LIVER FAILURE. Ruth De Bruyne[1], Rachel M. Taylor[1], Nigel Heaton[1], Mohammed Rela[1], Anil Dhawan[1]. *[1]Institute of Liver Studies, King's College Hospital, London, United Kingdom.*

Introduction: Liver transplantation is an accepted mode of treatment for acute liver failure (ALF). Patient survival however is poorer compared to transplantation for chronic liver disease. The aetiology of ALF may affect the outcome of liver transplantation but the data are limited.

Methods: The hospital notes of 204 children (101 male, median age 3.97 yrs, range 1 day - 17.4 yr) who presented with ALF between 1989 and September 2004 were reviewed.

Results: Out of 143 (70%) for whom aetiology could be established 41 underwent liver transplantation. Three (7%) of them required retransplantation, 2 due to ductopenic rejection (DR) and 1 due to hepatic artery thrombosis (HAT). Sixty-one(30%) patients had idiopathic ALF, of whom 36 (59%) were transplanted. Eleven(31%) of these needed a second transplant. In 6 (55%) of the 11 cases DR was the cause of graft loss. The other causes of retransplantation were biliary problems (3), HAT (1) and primary non-function (1). Four of the 6 patients with DR subsequently had a 3rd transplant. All transplants were ABO matched. Initial immunosuppression in the patients with DR consisted of tacrolimus and steroids in 3 patients, the other 3 were started on cyclosporine A, azathioprine and steroids but were subsequently converted to tacrolimus and steroids. Mycophenolate mofetil was added to the treatment in 4 cases, sirolimus in 1. Two patients received basiliximab, one OKT3 and another cyclophosphamide. One child was treated peroperatively with ATG at the time of the 3rd transplant. DR was diagnosed histologically and defined as duct loss in more than 50% of portal tracts in more than one biopsy. The median duration to develop signs of DR was 40 days (range 30 - 93 days). Four of 6 patients with DR died. Causes of death were sepsis and multi-organ failure (3) and liver failure due to DR where further transplantation was not considered because of severe hypoxic brain damage (1).

Conclusion: Children transplanted for idiopathic ALF have poorer graft and patient survival, ductopenic rejection being the dominant cause of graft loss.

Poster Session III

Abstract# 408 Poster Board #-Session: P1-III

INTRAOPERATIVE FLUID MANAGEMENT OF 120 PATIENTS UNDERGOING LIVING DONOR HEPATECTOMY WITHOUT BLOOD TRANSFUSION: A SINGLE CENTER EXPERIENCE. Bruno Jawan[1], Chao-Long Chen[2], Chih-Hsien Wang[1], Chia-Jung Huang[1], Kuan-Hung Chen[1], Allan Concejero[2], Chih-Chi Wang[2], Yu-Fan Cheng[2], Shih-Hor Wang[2]. *[1]Anesthesiology, Chang Gung Memorial Hospital, Kaohsiung Medical Center, Kaohsiung, Taiwan; [2]Liver Transplant Program, Chang Gung Memorial Hospital, Kaohsiung Medical Center, Kaohsiung, Taiwan.*

Objective:

Maintaining a low CVP has been regarded as a simple and effective way to reduce blood loss during parenchymal transaction. The aim of this study is to describe our experience in fluid management before and after graft procurement of 120 patients undergoing living donor hepatectomy without intraoperative blood transfusion.

Patients and methods:

The charts of 120 patients who underwent partial living liver donor hepatectomy were retrospectively reviewed. The mean intraoperative total blood loss, mean volume of fluids given, and urine output before and after graft procurement were calculated. The changes in intraoperative CVP levels, and preoperative and postoperative days 1-3 serum blood urea nitrogen (BUN) and creatinine were reviewed and analyzed.

Results:

The mean volume of crystalloids given and urine output before and after graft procurement was 3.2 $\pm$ 1.5 and 9 $\pm$ 3.9 mL/ Kg/ hr, and 1.58 $\pm$ 0.7 and 1.8 $\pm$ 1.4 mL/ Kg / hr respectively. The mean intraoperative blood loss was 86 $\pm$ 69 mL. Blood and blood products were not transfused in any patient. The mean CVP level decreased from 10.7 $\pm$ 3.0 to 7.8 $\pm$ 1.9 cm H_2O intraoperatiavely (figure1). Postoperative BUN and creatinene levels were all within normal limit.

Conclusion:

- Patients had minimal blood loss
- No patients required intraoperative blood transfusion
- Patients tolerated well fluids restriction during parenchymal transaction
- Post operative BUN and creatinine levels indicated that fluids restriction followed by fluids challenge did not have any negative effects on kidney functions.

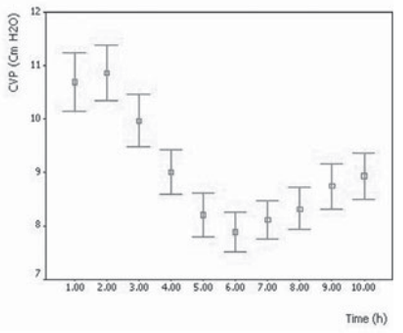


Fig 1 shows the intraoperative changes of the mean CVP

Abstract# 409 Poster Board #-Session: P2-III

USE OF RECOMBINANT HUMAN ACTIVATED PROTEIN C IN A LIVER TRANSPLANTED PATIENT. Leonardo Ferraz[1,2], Camila Paiva[2], Gustavo Janot[1], Ana Olga Mies[2], Sergio Mies[2]. *[1]Intensive Care Unit, Albert Einstein Hospital, São Paulo, Brazil; [2]Liver Unit, Albert Einstein Hospital, São Paulo, Brazil.*

Introduction: Severe sepsis in liver transplant recipients is associated with very high mortality. Use of drotrecogin alfa (activated protein C) has shown to be safe and efficient in patients with severe sepsis / septic shock with mortality reduction. However experience in use of this drug in liver transplants recipients has not been reported.

Case report: A 55-year-old man underwent orthotopic liver transplantation for virus B hepatic cirrhosis in the end of 2005. Six months after transplantation patient developed septic shock and acute respiratory distress syndrome (ARDS) secondary to a community acquired pneumonia due to *Streptococcus pneumoniae (isolated from blood culture)*. Empiric antibiotics were started at admission and mechanical ventilation was required because of severe ARDS (PaO2/FiO2 100). In the first 48h of admission in hospital the patient developed severe hypotension, with necessity of high doses of vasopressors (norepinephrine 1,0mcg/kg/h), metabolic acidosis with hyperlactatemia and renal failure requiring hemodialysis. Recruitment maneuvers with high levels of peep and prone positioning therapy were made in attempt to improve respiratory function. Liver function was normal and immunossuppression (tacrolimus and mycophenolate mofetil) was held. Drotrecogin alfa was started at standard doses and improvements in hemodynamic stability were observed within the first 24 hours of therapy. The patient was without vasopressors 90 hours after initiation of activated protein C. There was no complication associated with use of drotrecogin alfa. In follow-up patient was fully recovered and was subsequently discharged.

Conclusion: We report a case with successful use of drotrecogin alfa in a liver transplant patient with septic shock and ARDS. There were no side effects nor complications related to the drug. However to prove the efficacy and safety of drug in this setting it's necessary to include these population in new prospective trials.

Abstract# 410 Poster Board #-Session: P3-III

A RETROSPECTIVE COMPARATIVE STUDY AMONG 3 SURGICAL TECHNIQUES IN OLT: CONVENTIONAL WITH VENO-VENOUS BYPASS (VVB), PIGGYBACK WITHOUT VVB, AND PIGGYBACK WITH VVB. Tetsuro Sakai[1], Raymond M. Planinsic[1], Ibetsam A. Hilmi[1], J. Wallis Marsh[2]. *[1]Department of Anesthesiology, University of Pittsburgh Medical Center, Pittsburgh, PA, USA; [2]Department of Surgery, Thomas E. Starzl Transplantation Institute, University of Pittsburgh, Pittsburgh, PA, USA.*

Introduction: Advantages and disadvantages on the use of veno-venous bypass (VVB) with or without piggyback (PB) technique in orthotopic liver transplantation (OLT) have been argued. We compared 3 operative techniques (conventional with VVB, PB without VVB and PB with VVB) used in a single institution. **Methods:** 447 cases of primary, isolated, cadaveric OLT in a 3-year period (2001-2003) were analyzed retrospectively. **Results:** Conventional with VVB (n=108) had longer OR and warm ischemic times. PB without VVB (n=185) had less use of PRBC and FFP, less mortality and graft failure rates in 30 days, as compared to Conventional with VVB and PB with VVB (n=154). **Conclusions:** This non-randomized, retrospective, single institutional study suggested that PB technique without VVB in adult primary OLT was associated with less operative times and blood transfusions, and more favorable outcomes.

Comparison of data among 3 surgical techniques

	Conventional+ VVB (n=108)	Piggyback+ VVB (n=154)	Piggyback- VVB (n=185)	ANOVA	χ2 test
Age (yr-old)	50.9±10.0*†	55.0±9.5	53.8±9.2	0.002	
Male sex (%)	69.4	65.6	59.0		>0.1
MELD score	16.0±6.6	14.7±6.0	15.5±6.3	0.2	
Donor age (yr-old)	46.9±16.4	48.8±17.3	45.8±18.0	0.3	
OR time (hr)	9.0±2.2	7.6±1.9§	7.6±1.8§	0.0001	
CIT (hr)	11.7±3.5	11.3±3.1	10.4±3.0§†	0.001	
WIT (min)	43.7±8.1	30.5±7.5§*	35.1±9.8§	0.0001	
PRBC (units)	13.9±15.2	11.9±11.8	8.2±6.2§†	0.0001	
FFP (units)	13.4±14.9	10.4±10.7	7.3±6.5§†	0.0001	
Platelet (units)	11.7±10.1	10.4±9.8	9.6±8.5	0.2	
Cryoprecipitate (units)	3.8±8.0	3.1±6.3	2.1±5.1	0.06	
Death in 30 days (%)	8.3	6.5	2.2§†		<0.05
Graft failure in 30 days (%)	12.0	11.0	3.2§†		<0.01

Data are presented as mean±SD. MELD = The model for end-stage liver disease, CIT = cold ischemic time, WIT = warm ischemic time, ANOVA = analysis of variance (Bonferroni), § = significantly less than Conventional+VVB, † = significantly less than Piggyback+VVB, * = significantly less than Piggyback-VVB.

Abstract# 411 Poster Board #-Session: P4-III

FATAL TRANSFUSION-RELATED ACUTE LUNG INJURY (TRALI) AFTER LIVER TRANSPLANTATION. Leonardo Ferraz[1,3], Andreia Kondo[2], Margareth Lalle[3], Bianca Della Guardia[3], Sergio Mies[3]. *[1]Intensive Care Unit, Albert Einstein Hospital, São Paulo, Brazil; [2]Blood Bank, Albert Einstein Hospital, São Paulo, Brazil; [3]Liver Unit, Albert Einstein Hospital, São Paulo, Brazil.*

Introduction: Transfusion-related acute lung injury (TRALI) is a serious and potentially fatal complication of transfusion of blood and blood components. It has been the most common cause of transfusion-related death in the United States in last years. The true incidence of this pulmonary reaction to blood products is currently unknown but probably is still under-diagnosed. There are few cases of TRALI reported in literature in liver transplanted patients. We report a case of fatal TRALI developed during liver transplantation.

Case report: The patient was a 51 year-old male with alcoholic cirrhosis (Child-Pugh C, MELD 28) that was submitted to deceased donor liver transplantation in august 2005. In the operative setting there were no complications. At the end of surgery the patient starts to develop hypotension, respiratory failure with abundant fluid secretion coming out of tracheal tube. When admitted at intensive care unit, it was using high doses of vasopressors and with severe hypoxemia (PaO2/FiO2 < 100). Thorax X-Ray showed extensive bilateral pulmonary infiltrate. There were no signals of hypervolemia or heart failure: Cardiac Index 5.3; PWP 13mmHg; Brain Natriuretic Peptide (BNP) 41; Echocardiography: ejection fraction 76%; cardiac enzymes normal. Besides use of high levels of positive pressure, vasopressors and volemic expansion, the patient developed refractory shock / hypoxemia and died 12 hours after the beginning of respiratory failure. During the surgery the patient received 6 units of fresh frozen plasma and 1 unit of packed red blood cell. The respiratory failure started 5 hours after the first transfusion. Post-mortem tissue samples were obtained and revealed neutrophil infiltrate in lung with protein alveolar filling suggesting TRALI and Harvesting Grade I in liver graft.

Conclusion: Transfusion-related acute lung injury (TRALI) is a life-threatening problem that can occur during blood product transfusion. The liver transplanted patient probably it's a high risk group population to develop this disease. This case highlights the necessity to improve our knowledge about TRALI in liver transplantation.

Abstract# 412 Poster Board #-Session: P5-III

CARDIAC OUTPUT IN BISPECTRAL INDEX (BIS™) MONITORED PATIENTS DURING ANESTHESIA FOR LIVER TRANSPLANTATION. R. Schumann[1], J. Hudcova[1], C. Anderson[1], I. Bonney[1]. *[1]Department of Anesthesia, Tufts-New England Medical Center, Boston, USA.*

Introduction: Cardiac output (CO) during liver transplantation (LT) is influenced by many factors. We conducted a retrospective study to determine a possible effect of bispectral index (BIS) monitoring during anesthesia for LT on intraoperative CO values.

Methods: Following institutional review board approval, records of 45 patients undergoing LT using an isoflurane/air/O2 + opioid infusion based anesthetic were analyzed. Demographic data collection included age, BMI and MELD score. 23 BIS monitored patients were compared to 22 controls. Baseline preanhepatic CO values (COB) were compared with postreperfusion maximal CO values (COM) between groups using the t-test; p values <0.05 were considered statistically significant. Values in means ± Standard Deviation.

Results: There was no significant difference between groups in the patients' age (51±7), BMI (29± 5), MELD (21±7), the number of inotropes used during LT, COB (11.6±4) and COM (13.3±4). However, when comparing the change from COB to COM, the control group experienced a 33% increase in CO compared to 5% in the BIS group. This difference in change of the CO was statistically significant (p=0.005).

Conclusion: The results of our retrospective study in this case control cohort suggests that patients undergoing LT without intraoperative BIS monitoring have a significantly greater percent increase from baseline preanhepatic CO to maximal post-reperfusion CO. Intraoperative BIS use possibly alters anesthetic management during LT resulting in less CO and hemodynamic changes between different phases of LT. Future studies should include a larger number of patients and outcome data such as time to extubation and patient length of stay to determine possible advantages of intraoperative BIS use in LT.

Abstract# 413 Poster Board #-Session: P6-III

HEMOLYTIC UREMIC SYNDROME AFTER NON SHIGATOXIN – PRODUCING E. COLI SEPSIS IN LIVER TRANSPLANT PATIENT. Pedro Medeiros, Jr.[1], Patricia Bonazzi[1], Edson Abdala[1], Telésforo Bacchella[1], Marcel Machado[1]. *[1]Liver Transplantation Surgery Service, Hospital das Clínicas - School of Medicine - University of São Paulo, São Paulo, SP, Brazil.*

Introduction: Hemolytic uremic syndrome (HUS) is a disease of non-immune hemolytic anemia,thrombocytopenia and acute renal failure (ARF) due to platelet thrombi in the microcirculation of the kidney associated or not to diarrhea illness and E.coli infection.**Case Report:**A 63 years old patient, submitted to liver transplant was admitted to ICU due to bacteremia and hemodynamic instability just after ERCP.ARF, anemia and thrombocytopenia appeared in the second day of ICU stay with progressive deterioration.

Table 1

	24h before icu admission	2 days after icu admission	5 days after icu admission	12 days after icu admission
Cr – mg/dL	1.16	2.69	3.19	1.02
Hb – mg/dL	10	8	9.4*	11.4
Platelets	142.000	100.000	13.000	194.000
Indirect Bilirubin – mg/dl	0.3	0.8	2.1	0.9
Urinary flow mL	not measured	620	160	2250
Tacrolimus serum level	10.2	10.8	19.7	10.4
Fresh Frozen Plasma administration	no	no	yes	no

hemoglobin levels after 3 red cell units

Blood cultures yielded E.coli strains.Cefepime had been initiated.Clinical improvement was seen after 36 hours.Even after free of vasoactive drugs patient still presented important renal impairment and thrombocytopenia. HUS diagnosis was suspected.Plasma infusion was initiated in the 5th day of icu stay, and 3 days after that platelets levels started to rise.One week after plasma had been initiated no thrombocytopenia was present and in 10 days dialyses were interrupted.D**iscussion:**HUS often presents with mild blood count abnormalities and the main organ manifestation being renal abnormalities, frequently severe enough to necessitate hemodialysis.Our patient presented acute sepsis just after ERCP and blood cultures yielded a non shigatoxin producing E.coli strain.In more severe cases, other alternatives like plasmapheresis followed or not by intravenous immunoglobulin and L-arginine administration to increase nitric oxide levels have been tried. Although no stablished treatment exists plasma infusion resulted in clinical improvement and should be considered as a safe alternative option in HUS management in liver transplant patients.

Abstract# 414 Poster Board #-Session: P7-III

RHABDOMYOLYSIS WITH COMPARTMENT SYNDROME AFTER COMBINED KIDNEY AND PANCREAS TRANSPLANT. Jana Hudcova, Alan Lisbon, Achikam Oren-Grinberg. *[1]Anesthesia and Critical Care, Beth Israel Deaconess Medical Center, Boston, USA.*

Background: In the complex setting of surgery it may be difficult to define an underlying cause of rhabdomyolysis.

Case: A 29 yo woman with history of diabetes, coronary artery disease, hypercholesterolemia and several uneventful anesthetics underwent combined kidney and pancreas transplant under general anesthesia (GA). Medications included insulin, dilthiazem, metoprolol, atorvastatin, clonidine, gabapentin and aspirin. GA consisted of midazolam, propofol (total dose of 400 mg), succinylcholine, isoflurane, fentanyl and cisatracurium. Perioperatively patient recieved a dose of mycophenolate mofetil, methylprednisolone and antithymocyte globulin. After the operation she was weaned of the ventilator while being sedated with propofol (20-50 mcg/kg/min). Blood sugar was well controlled with an insulin drip. Ten hours after surgery, the patient was diagnosed with compartment syndrome (CS) of both lower extremities and thrombosis of the pancreatic and iliac veins. After removal of the pancreatic graft, thrombectomy and fasciotomies, she was admitted to the SICU. Muscle enzymes peaked on postoperative day 1 (ALT 4800, AST 6994, CPK 25,064) and she developed CS of the upper extremities which required fasciotomies. Her SICU course was complicated by multiple organ system failure, however, she recovered with the exception of kidney function. Fasciotomies were closed and she was discharged to the floor.

Significance: Rhabdomyolysis with subsequent CS of all extremities requiring fasciotomies complicated the postoperative course of this patient after combined kidney and pancreas transplant. The underlying pathophysiology of this disorder remains unclear. Propofol infusion syndrome fits neither the time course nor the total administered dose. Malignant hyperthermia testing

was not done, however there was no high fever or acidosis. Rhabdomyolysis in diabetics has been attributed to hyperosmolality. Our patient was not hyperosmolar and blood sugar was well controlled. Statins are well known culprits for rhabdomyolysis either on their own or in connection with immunosuppressant agents (cyclosporine, mycophenolate mofetil). Combination of atorvastatin and mycophenolate mofetil and/or antithymocyte globulin in this fragile diabetic patient is a plausible explanation of the rhabdomyolysis. Overzealous response of immune system to surgery with subsequent capillary leak may also be a contributing factor.

Abstract# 415 Poster Board #-Session: P8-III

PROCALCITONIN IN THE EARLY POSTOPERATIVE COURSE AFTER LIVER TRANSPLANTATION. Guadalupe Aguirre-Avalos[1], Marco A. Covarrubias-Velasco[2], Jose O. Vazquez-Diaz[1], Karla Robles-Ramirez[1], Rogelio Maciel-Sandoval[3], Luis C. Rodriguez-Sancho[2], Hilario Coronado-Magana[1]. *[1]Intensive Care Unit, Hospital Civil de Guadalajara, Guadalajara, Jalisco, Mexico; [2]Transplant Unit, Hospital Civil de Guadalajara, Guadalajara, Jalisco, Mexico; [3]Clinical Pathology Laboratory, Hospital Civil de Guadalajara, Guadalajara, Jalisco, Mexico.*

Background: Orthotopic Liver Transplantation (OLT) patients have increased risk of nosocomial infections due to multiple factors. Early predictors for infection prior to availability of microbiologic testing would be useful in distinguishing between uncomplicated postoperative course (UCPC) and those with infectious complication. The present study determined the value of Procalcitonin (PCT) in the early postoperative course (EPC) of OLT.

Methods: Were included all patients who underwent OLT admitted to the Intensive Care Unit (ICU) from june 2005 to june 2006. The patients' EPC were monitored by PCT. Complicated postoperative course (CPC) was defined as a persistence or a reincrease of PCT levels in the clinical course and presence of bacterial infections. **Results**: Of 43 admissions to the ICU after OLT, 40 were monitored by PCT (23 were male and 17 female with a mean age of 47±12 yr). The underlying disease was viral hepatitis in 22, primary biliary cirrhosis in 5, cryptogenic cirrhosis in 4 and 9 had other diseases. Eleven (27%) had one or more preexisting medical problems. On the first day of admission, 5 (12%) patients presented infections disease. Infections ICU-acquired were in 9 patients. The median period between ICU admission and the acquisition infections was 5±2 days. UCPC had 25 (62%) patients. Of these, 2 had infections on the first day of admission. Peak PCT levels of 37±30.82 on the first day were observed in 24, following a continuous reduction progressively to normal. CPC had 15 patients with a reincrease of PCT. At he time of reincrease of PCT levels was associated with bacterial infection in 5, unknown in 5, after plasmapheresis in 4 and surgical procedures in 1. PCT concentrations varied among the patients with and without infection from 39.2±31.8 to 35.9±83.4 ng/mL, $p< 0.010$ on the first day. The mean length of ICU stay was 8±7 days. Only one died due to septic shock. **Conclusion**: A continuous reduction of PCT was associated with a complication-free clinical course and response to therapy. However, a reincrease of the PCT levels was related with infections and invasive procedures in only 66%.

Abstract# 416 Poster Board #-Session: P9-III

ANESTHESIA MANAGEMENT OF A LIVER RECIPIENT WITH MITRAL REGURGITATION. Rodrigo Diaz[1], Glauber Gouvea[1], Lucio Auler[1], Andre Soluri[1], Marcelo Enne[1], Lucio Pacheco[1], Alexandre Cerqueira[1], Jose Manuel Martinho[1], Jefferson Alves[1], Rodrigo Amil[1], Elizabeth Balbi[1]. *[1]Liver Transplantation Unit, Bonsucesso General Hospital, Rio de Janeiro, Brazil.*

In patients with mitral regurgitation (MR), the impedance to ventricular emptying is reduced. Consequently, MR enhances left ventricular emptying. Almost half of the regurgitant volume is ejected into the left atrium before the aortic valve opens. The volume of MR flow depends on a combination of the size of the regurgitant orifice and the pressure gradient between the left ventricule and the left atrium. Left ventricular systolic pressure and therefore the ventricular-atrial gradient depends on systemic vascular resistance (SVR). This gradient is increased by hypertension and decreased in shock. The MR impose a volume overload on the left ventricle and have many pathophysiologic properties, which create common objectives in their anesthetic management. Faster, fuller, and vasodilated are the watch-words for maintaning net forward flow in patients with MR. Nevertheless this may be particularly challenging in the context of a liver transplantation. We report the successful case of a patient with MR who underwent a liver transplantation at our hospital.

65y female, wtih HCV cirrhosis, Child B score, with a double mitral lesion with a predominancy of MR. She had a cross-sectional area of the mitral valve of 1.6cm, and a left AV pressure gradient of 10mmHg. She also had atrial fibrillation, wth a heart rate of 100beats/min. Total intravenous anesthesia was used with propofol, remifentanil and atracurium. The patient was monitored with EKG, SaO2, ETCO2, BIS, NMT, body temperature, urine output, invasive arterial pressure, pulmonary artery catheter, cardiac output, SVO2, EDVI and right ventricular ejection fraction. We also used the thromboelastography, and the blood gas analysis.

At the begining of the case we tried a couple of esmolol bolus followed by an infusion because she was tachycardic (125bpm) with no success. Indeed, only after an intravenous amiodarone infusion (150+50mg), we managed on bringing her heart beat back to 95bpm.

During the case, it was possible to notice that whenever the SVR and the blood pressure increased, a v wave peak was observed on the PAP line.

The surgical time was 5h and 30min, and the volume infused was restricted to 1,250cc of ringer solution and 500cc of HES.

At the end, she was kept intubated for 24h and was discharged from ICU on the 5th postoperative day.

Abstract# 417 Poster Board #-Session: P10-III

NOVEL USAGE OF BEVACIZUMAB (AVASTIN) IN HEREDITARY HAEMORRHAGIC TELANGIECTASIA REVERSING THE NEED FOR LIVER TRANSPLANTATION. Andrew Mitchell[1], Leon Adams[1], Gerard MacQuillan[1], Jonathon Tibballs[1], Rohan Vanden Driesen[1], Luc Delriviere[1]. *[1]WA Liver Transplant Service, Sir Charles Gairdner Hospital, Perth, Western Australia, Australia.*

Introduction

Hereditary haemorrhagic telangiectasia(HHT) can effect the liver and may lead to liver failure, portal hypertension, bile duct necrosis and High Output Cardiac Failure (HOCF). Treatment of Hepatic HHT with HOCF is currently via liver transplantation.

Bevacizumab is a human/mouse hybrid antibody to vascular endothelial growth factor and it inhibits angiogenesis. It is currently used in oncology for colorectal and lung cancer, and recently in neovascularisation of the macula .

We describe here bevacizumab's first use in HHT complicated by HOCF.

Method.

A 46 year old woman, with known hepatic HHT was assessed as a candidate for liver transplantation. Indications were HOCF, portal hypertension with resistant ascites and malnutrition . The patient had no other visceral manifestations of HHT. She was considered a poor candidate for liver transplantation due to poor nutritional status and cardiac failure.

The rationale for this first use of bevacizumab in HHT was to improve her condition by reducing HOCF through reversal of intrahepatic neovascularisation before considering transplantation.

Bevacizumab was given at a moderate dose of 5mg/kg(250mg) twice monthly for six courses by IV infusion.

The patient was assessed clinically, biochemically and by serial imaging of liver volume and cardiac output via Cardiac MRI, at 0, 3 and 6 months following initiation of treatment.

Results.

The patient had a dramatic clinical improvement. Post-infusion liver function tests were mildly deranged, but settled in the two weeks following each treatment without other toxicity. Ascites resolved in three months.The liver mass was subject to a twofold reduction. Cardiac output normalised over six months. From being bedbound in hospital, remarkably, the patient was able to return to work at the end of this therapeutic trial.

Liver Volume and Cardiac Output via MRI

Time on Avastin	Courses of Avastin	Liver Volume	Cardiac Output
0 months	0 courses	4807 ml	10.2 l/min
3 months	3 courses	3151 ml	6.3 l/min
6 months	6 courses	2269 ml	5.1 l/min

Conclusions

Bevacizumab has induced a strong biological response in this patient with HHT complicated by HOCF. The indications for liver transplantation resolved. Longterm follow-up of this patient is currently ongoing. A multicentre study collating these rare cases should be established.

Abstract# 418 Poster Board #-Session: P11-III

RECURRENT HEPATITIS C AFTER LIVER TRANSPLANTATION: ACCELERATED FIBROSIS PROGRESSION. Rodrigo S. Honorio[1], Evandro S. Mello[1], Venancio A. F. Alves[1], Fabiana R. Lima[1], Edson Abdala[2], Telesforo Bachella[2], Estela R. R. Figueira[2], Patricia R. Bonazzi[2], Daniela M. M. Gotardo[2], Marcel C. C. Machado[2]. *[1]Pathology, University of Sao Paulo Medical School, Sao Paulo, Brazil; [2]Surgery, University of Sao Paulo Medical School, Sao Paulo, Brazil.*

Introduction: Recurrent chronic hepatitis C is observed in great majority of transplanted patients and has been described as more severe than in non-transplanted patients. Several articles have shown that the liver damage by the HCV involves a progressive fibrogenic inflammatory pattern which lead to cirrhosis in a significant amount of infected people. In immunocompetent patients, the median interval between the infection time and cirrhosis is around 30 years. Conversely, in transplanted individuals this period is approximately 10 years. **Objective, Patients and Methods**: In order to calculate the rate of fibrosis progression (RFP) in our cases, we evaluated 48 patients who underwent a liver transplantation for hepatitis C end-stage liver disease between 1995 and 2004 and that were still under follow-up in 2006. All liver biopsies were reviewed acccording to a histopathologic protocol. Grading and staging were scored according to the method of Ishak. RFP was quantified in fibrosis units/years. Four patients were removed from the study because of histopathologic incomplete data and 3 were removed due to the absence of a follow-up biopsy after 1 year. Among the remaining patients, 29 were male and the median age was 50 years old. **Results:** The overall RFP was 0.6 and the median interval between transplantation and cirrhosis was estimated to 10 years. 22 patients were followed for more than 5 years (median follow-up time of 6.9 years) and underwent at least one liver biopsy after this period. 13.6 % of them presented cirrhosis and other 13.6% had fibrosis with nodular regeneration. Two of them did not present fibrosis. The median rate of fibrosis progression and the median time in years between the transplant and last biopsy were, respectively, 0.35 and 6.5 for those with F1, F2 or F3 stage (12 patients in total) and 0.80 and 7.2 for those with F4, F5 or F6 stage (8 patients in total). **Conclusion:** The rate of fibrosis progression in our study was similar to previous results in transplanted patients. Several factors have already been associated with the poor outcome of this patients. Identifying distinct patterns of evolution (rapid and slow "fibrosers") allow us to evaluate these factors more effectively.

Abstract# 419 Poster Board #-Session: P12-III

LIVER TRANSPLANTATION FOR HCV CIRRHOSIS – RESULTS IN RECIPIENTS WITH TACROLIMUS BASED IMMUNOSUPPRESSION. Marek Pacholczyk[1], Beata Lagiewska[1], Gajusz Gontarczyk[1], Leszek Adadynski[1], Agnieszka Perkowska-Ptasinska[2], Wojciech Lisik[1], Dariusz Wasiak[1], Tomasz Cieciura[2], Jakub Szalas[1], Andrzej Chmura[1]. *[1]General and Transplantation Surgery, Warsaw Medical University, Warsaw, Poland; [2]Transplantation Medicine and Transplantology, Warsaw Medical University, Warsaw, Poland.*

End stage liver diseases associated with hepatitis C (HCV) infection is the most common indication for liver transplantation (LTx). The recurrence of HCV infection measured by detection of HCV RNA in the serum or liver tissue is nearly universal. **The aim** of this study was to determine the clinical course of HCV recurrence in the recent series of LTx recipients on Tacrolimus based therapy.

Patients and methods.Between 2000-2006, 175 liver transplantations were performed at our institution. In 59 recipients (33,7%) HCV cirrhosis was the indication for transplantation. HCC was diagnosed in 7 of them. Pretransplant HCV RNA PCR was positive in 54 (91,5%) patients. Overall survival of HCV recipients (3-72 months follow-up time) was slightly lower (88,1%) in comparison to non HCV patients (90,3%). In HCV group of patients 42,8% of the cause of death was somehow related to primary disease: HCC spread, graft failure and fulminant HCV hepatitis. Apparent histological and clinical HCV recurrence was found in 47.5% recipients. Almost half of these (42,4%) presented symptoms of recurrence before the 6th month following LTx. Recurrent HCV disease was measured using the Ishak scoring. Antiviral rescue therapy administered at our institution consisted of INF-α (3 MU 3 times a week) plus Ribavirin 200mgs tds, replaced by Peg-INF (0.5-1.5μ/kg/wk) plus Ribavirin 200mgs tds since two years. **Results**. 22 out of 28 (78.5%) patients who developed recurrent disease responded to the combined treatment; 12% failed to respond despite the treatment; 9,5% discontinued the therapy for other causes (i.e. relapse into alcohol use). The sustained virological response was found in 23.8% of these recipients. One patient commenced early retransplantation for acute recurrent hepatitis.Combined therapy was not possible in this case due to profound pancytopenia.

Abstract# 420 Poster Board #-Session: P13-III

TREATMENT FOR RECURRENT HEPATITIS C INFECTION AFTER LIVER TRANSPLANTATION. Cassia R. G. Leal[1], Maricarmen C. C. Pan[1], Zulane S. T. Veiga[1], Kelly C. G. Flausino[1], Joyce Roma[1], Ana Carolina Gonzalez[1], Ivan Zyngier[1], Lucio F. Pacheco-Moreira[1], Joao Luiz Pereira[1], Elizabeth Balbi[1]. *[1]Liver Transplantation Unit, Bonsucesso General Hospital, Rio de Janeiro, Brazil.*

Background: Cirrhosis due to hepatitis C virus (HCV) infection is the current leading indication for liver transplantation (LT). Treatment approaches have ranged from treatment before LT, preemptive treatment immediately after LT, and treatment after the development of histologic hepatitis. Most clinicians wait until there is histological evidence of recurrent HCV disease to indicate therapy.This series reports a transplantation program's experience with the treatment of HCV infection after the development of histological hepatitis.

Methods: Between Mar/ 02 and Oct/06, patients with recurrent HCV were screened to determine if they were eligible for treatment. Liver function tests, HCV viral load, genotype and liver biopsies were done prior to treatment. HCV-RNA was repeated at 12 weeks, at 24 weeks, at the end of treatment (end of treatment response - EOTR), and 6 months after the end of treatment for patients who became HCV-RNA negative (sustained virological response - SVR). The treatment used varied according to patients characteristics, the year of treatment and drug availability. Contraindications to treatment were the same for patients before OLT. Treatment duration was 48 weeks for patients with genotype 1 and 24 for other genotypes.

Results: In this period 204 LT were done. 84 (41.1%) patients had VHC as the indication for LT. 19 patients were eligible for treatment (7 received two different treatments along this period), 5 patients have completed treatment, 8 remain on treatment and 12 were intolerant. The results and the treatment regimens for this group are shown in table 1.

Conclusion: Treating transplanted patients with Peginterferon + Ribavirina is feasible and do not seems to induce severe immunological alterations. The results of treatment with pegylated interferon + ribavirina from this small series is encouraging withSVR occurring in at least 60% of patients who completed treatment.Side effects in this group were a frequent cause of treatment discontinuation.

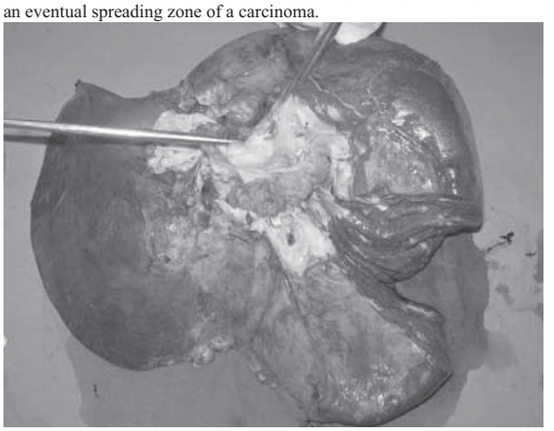
Treatement regimen	N	EOTR	SVR	Completed Treatmewnt	Discontinuation	On treatment
Riba	7	-	-	-	6	1
IFN/Riba	5	1	1	1	3	1
Peg/Riba	14	3	5	5	4	5

Abstract# 421 Poster Board #-Session: P14-III

OLT FOR LIVER NEOPLASMS OTHER THAN HCC: CASE REPORT. L. Miglioresi[1], G. M. Ettorre[1], R. Santoro[1], G. Vennarecci[1], M. Antonini[2], G. Visco[1], S. Sentinelli[3], M. Milella[4], E. Santoro[1]. *[1]Digestive Surgery and Liver Transplantation, Regina Elena Cancer Institute- IFO, Rome, Italy; [2]Intensive Care Unit, Regina Elena Cancer Institute-IFO, Rome, Italy; [3]Pathology Department, Regina Elena Cancer Institute, Rome, Italy; [4]Oncology Departement, Regina Elena Cancer Institute-IFO, Rome, Italy.*

A 38 years old man from Romania with a diffuse polyposis of the biliary tree was referred for OLT to our Centre. A year before the patient became jaundiced and was operated of an obstructive polyp of the biliary *carrefour* and cholecyst was removed. The histology of the polyp was a non infiltrating adenocarcinoma while intraoperative cholangiography showed a diffuse papillomatous disease of biliary tree. Liver was apparently cirrhotic at operating-theatre. A Kehr tube was leaved in place in the common bile duct. Afterwards the patient presented recurrent fever and jaundice and CT showed a liver abscess of 15 cm of diameter of the IV-V-VIII segments. An antibiotic treatment was started on the basis of hemocolture for Klebsiella P. and Enterococcus. The patient recovered and was transplanted with a HCV/HBcAb positive graft. Pathological evaluation of the explanted liver showed multifocal biliary papillomatosis with a major obstruction at the hilum for an adenocarcinoma infiltrating surrounding tissues. At 1 month from intervention the patient is in very good conditions with prothrombine time 88%, AST35 UI/L, ALT 319 UI/L, Total Bilirubin 1,18 mg/dl. Biliary papillomatosis is a rare disease that has to be considered as a pre-malignant disease; Lee et al. in a review published in 2004 in Cancer found 83% (48 patients out of 58) of malignant transformation on this type of biliary adenomas; survival

rates at 5 years are reported as 20-50%. Surgery is an option for resolving biliary obstruction but the recurrence rate is very high and above all there is the risk of transformation. OLT can be performed with good results if there no evidence of neoplastic transformation. Moreover some authors report duodenopancreatectomy combined with reciepient hepatectomy to resect an eventual spreading zone of a carcinoma.



Abstract# 422 Poster Board #-Session: P15-III

ANATOMICAL CONSIDERATIONS OF PRE-TRANSPLANT DONOR-RECIPIENT EVALUATION IN LIVING DONOR LIVER TRANSPLANTATION. Jinsub Chli[1], Man Ki Ju[1], Gi Hong Choi[1], Myoung Soo Kim[1], Hyung Jun Ahn[1], Hye Kyung Chang[1], Hyung Jung Kim[1], Kyung Ock Jeon[1], Soon Il Kim[1]. [1]*Department of Surgery, Yonsei University College of Medicine, Seoul, Korea.*

Adult living donor liver transplantation (LDLT) needs cautious approach for donor safety. In processing of potential donor-recipient evaluation, detail understanding of hepatobiliary anatomy and accurate measurement of possible graft volume are essential. We performed the potential donor-recipient evaluation process according to center protocol and ascertain the critical point and result of donor evaluation process.

Prospective analyses of 94 LDLT candidates (74 recipient and 94 donors) were performed from September 2005 to October 2006. The donor-recipient evaluation included computerized tomography (CT) scan, magnetic resolution imaging (MRI) scan of liver. Tomographic images were reconstructed by 3-dimensional anatomy and used as resource for calculation of liver volume and possible graft volume.

The percentage of anatomical variation in portal and hepatic artery was 20.2% and 21.3%. But the anatomical variation of hepatic vein and biliary system was common, which percentage of unusual anatomy was 41.5% and 33.0% respectively. Among 94 cases of donor evaluation, 52(55.4%) potential donor was unacceptable for LDLT. The leading cause of unacceptable donor was anatomical variation (n=24, 25.5%). The portal vein and hepatic artery anatomical variation that prone to cause surgical complication during donor hepatectomy was only 2 cases respectively. The hepatic artery variation didn't affect on the decision of acceptable donor. But the anatomical variation of hepatic vein especially middle hepatic vein drainage pattern and presence of inferior hepatic vein was major cause of unacceptable donor (n=20, 21.3%). Too small residual volume of donor (n=17, 18.1%), 'small-for-size'(n=5, 5.3%), fatty liver (n=5, 5,3%) and early cirrhotic change (n=1, 1.1%) was also critical cause of unacceptable donor. In 42 acceptable donor-recipient pair, 2 cases of LDLT were failed due to understaging of recipient hepatocellular carcinoma. In conclusion, anatomical variation of hepatic vein and small residual liver volume in donor is major critical point for donor evaluation. And pre-transplant cancer staging as a recipient evaluation is also another crucial point of LDLT decision.

Abstract# 423 Poster Board #-Session: P16-III

CHANGES IN SPLANCHNIC HEMODYNAMICS AFTER ADULT LIVING DONOR LIVER TRANSPLANTATION. THE ROLE OF SPLENIC ARTERY LIGATION. C. Fondevila, J. Ferrer, G. Martinez, A. Hessheimer, D. Calatayud, J. Marti, C. Ginesta, J. Fuster, R. Charco, P. Taura, J. C. Garcia Valdecasas. [1]*Surgery, Hospital Clinic, University of Barcelona, Barcelona, Spain.*

Objective. To prospectively evaluate splanchnic hemodynamics and the use of the splenic artery ligation (SAL) to modulate portal vein flow to partial grafts in adult living donor liver transplantation (ALDLT).

Patients and Methods. Twenty consecutive recipients of ALDLT were included between May 2003 and October 2006: 12 men, 8 women, mean age 55yrs (r=35-68). Transplant indications were HCV cirrhosis 8(40%), HCC 6(30%), alcoholic cirrhosis 4(20%), cryptogenic cirrhosis 1(5%), and PBC 1(5%). Eleven recipients were Child-Pugh C (55%) and 5 B (25%). In all recipients, the vena cava was preserved and a portocaval shunt (PS) was performed. Hepatic artery and portal vein flows, which were divided by liver mass (kg) and cardiac index (CI), were evaluated using electromagnetic probes at the beginning of the transplant (I), after completion of the PS, at portal reperfusion (PR), at arterial reperfusion (AR) and at the end of the procedure (F).

Results. The average graft weight was 734±115g, which represented an average of 1.09% of recipient body weight (r=0.88-1.65). Cold and warm ischemic times were 106±62 and 25±11 min respectively. Based on low hepatic artery flows (≤30mL/min/kg/CI), which were not due to anastomotic complications, and/or elevated portal vein flows (≥500mL/min/kg/CI), splenic artery ligation (SAL) was performed in 8 ALDLT recipients (40%). The table depicts the portal vein flows at each intraoperative time point, comparing them between the groups with and without SAL. SAL impacted portal vein flow by decreasing it an average of 27%. While portal flow in the SAL group was significantly higher at AR than in the group without, this difference was no longer significant after SAL. Likewise, SAL increased average hepatic artery flow from 27 to 32 mL/min/kg/CI, a difference of 22%.

Conclusions. Partial liver grafts in ALDLT are particularly susceptible to the adverse effects of the hyperdynamic splanchnic circulation and hemodynamic derangements that exists in patients with end-stage liver disease. SAL is an effective means of reducing high portal vein flow and simultaneously improving arterial flow in these grafts.

Portal Vein Flow (mL/min/kg/CI)

	Without SAL	With SAL	p
I	53±45	146±131	ns
PS	494±159	627±207	ns
PR	460±126	515±171	ns
AR	380±114	576±183	0.02
F	387±156	419±115	ns

Abstract# 424 Poster Board #-Session: P17-III

HEPATITIS-C RECURRENCE AND FIBROSIS PROGRESSION ARE NOT INCREASED AFTER SPLIT-LIVER TRANSPLANTATION; A SINGLE CENTER EXPERIENCE OF 289 PATIENTS. Maximilian Schmeding[1], Ulf P. Neumann[1], Bahra Marcus[1], Neuhaus Ruth[1], Neuhaus Peter[1]. [1]*General and Transplantation Surgery, Charite University Hospital, Berlin, Germany.*

Introduction:

Today hepatitis-C is the leading cause for liver transplantation and viral recurrence is almost universal. Implications have been raised that viral replication within the transplanted tissue might be increased in organs of reduced size leading to earlier graft fibrosis and consecutive organ failure. This is especially important in the setting of living-donor liver transplantation where the factor of donor risk always has to be taken into account.

In the current literature discussion of the data is controversial with many studies lacking routine liver biopsies.

Patients and Methods:

We performed retrospective analysis of 289 HCV-LTx (23 splits) patients transplanted at our institution between 1997 and 2005. Five patients in the split-liver group were HCV patients with large HCC beyond the Milan criteria. In the full-size group all patients with HCC met the Milan criteria.

Immunosuppresion was based on Tacrolimus or Cyclosporin and Steroids in all cases.

All patients received routine liver biopsies one, three and five years after transplantation as well as immediately before the initiation of anti-viral treatment if applied.

Patient- and organ-survival, intensity of HCV-recurrence and fibrosis progression were analyzed with respect to whole or split-liver transplantation.
Results:
Organ and patient survival was significantly better for full-size recipients than for split liver patients with p= 0.037 for organ survival and p= 0.037 for patient survival yet did not display significant differences when split-liver patients with large HCC beyond the Milan criteria were excluded from analysis (p less than 0.05).
First year fibrosis progression was 1.29 in full-size grafts and 1.07 in split-livers (not sign.).
Conclusion:
In our patient collective intensity of HCV recurrence was not increased in split-liver recipients compared to full-size recipients. Patient and organ survival were similar when patients with large HCC and early tumour recurrence and consecutive early post transplant death were excluded from analysis.
Split-liver transplantation can therefore be advocated for HCV patients.

Abstract# 425 Poster Board #-Session: P18-III

GW/RBW RATIO CORRELATES WITH TAC DOSE AND RENAL FUNCTION AFTER RIGHT LIVING RELATED LIVER TRANSPLANTATION. Jens Wilberg[1], Bernadette Kuepper, Katharina Thrum, Erik Baerthel, Utz Settmacher, Arno Kornberg. *[1]Klinik fuer Allgemein-, Visceral- und Gefaeßchirurgie, Universitätsklinikum der FSU Jena, Jena, Germany.*

Background:
Tacrolimus is mainly metabolized by the liver. After partial liver transplantation different Tac pharmacokinetics must be assumed, possibly influencing renal function. The aim of this study was to analyze the impact of transplant procedure-associated Tac levels and doses on initial and delayed renal function after full size and partial liver allografting.
Patients and methods:
A total of 55 adult patients after full size (group 1, n=29) and right living related liver transplantation (LRLT, group 2, n=25) were included in this prospective clinical trial. Tac was administered orally, starting between 6 and 10 mg/day in both groups. Tac dose was adjusted according to target trough Tac (T0) levels of 12-15 ng/dl. We defined ID as initial duration (days) until reaching T0 level, and CD as continuous Tac dose necessary to maintain T0 level for a minimum of 14 days. The impact of several clinical parameters (recipient/donor age, warm and cold ischemia, blood loss, anhepatic time, GW/BW, initial allograft function) on ID and CD was assessed. In addition, the impact of procedure-related Tac pharmacokinetics on initial and delayed renal function was analyzed by Cox regression.
Results:
Pre-transplant renal function was comparable between both groups. There was a significant difference in mean ID (group 1: 5,1 ± 2,8 days; group 2: 2,9 ± 1,3 days; *P*= 0,001) and CD (group 1: 10,8 ± 3,4 mg/day; group 2: 6,1 ± 3,1 mg/day; *P*<0,001). Early Tac dose adjustment did not prevent renal function deterioration in group 2 during first 3 weeks posttransplant (*P*<0,05). At last post-LT follow-up (mean: 38 months) rate of nephropathy was higher in group 2 (52% versus 31%). Graft weight/recipient body weight ratio tended to correlate with CD in group 2 (*P*=0,05).
Conclusion:
After right LRLT initial post-LT Tac dose should be significantly lower than after full size transplants. Early posttransplant Tac dose adjustment according to GW/RBW ratio might reduce incidence of delayed CNI-associated nephropathy after LRLT.

Abstract# 426 Poster Board #-Session: P19-III

LIVING DONOR LIVER TRANSPLANTATION UNDER ALEMTUZUMAB PRE-CONDITIONING AND TACROLIMUS MONOTHERAPY: TWO-YEAR OUTCOMES. Henkie P. Tan[1], Kusum Tom[1], Ngoc Thai[1], Paolo Fontes[1], Michael DeVera[1], Vivek Sharma[1], Joseph Donaldson[1], Igor Dvorchik[1], Thomas E. Starzl[1], Amadeo Marcos[1]. *[1]Thomas E Starzl Transplantation Institute, University of Pittsburgh, Pittsburgh, PA, USA.*

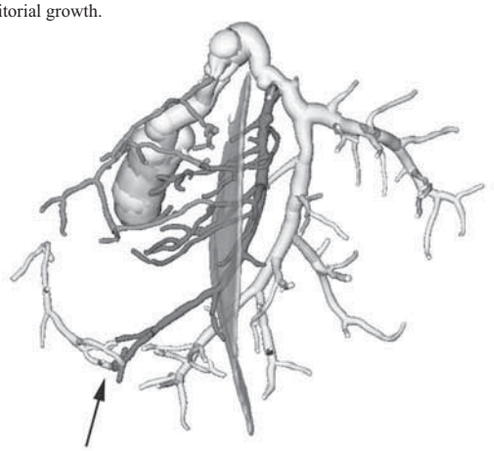
Introduction: Living donor liver transplantation was performed under a regimen of recipient pretreatment (alemtuzumab [Campath-1H, anti-CD52]) and minimal post-transplant immunosuppression (tacrolimus monotherapy) with subsequent weaning.
Methods: We performed 47 consecutive right lobe adult living donor liver transplantation (RLALDLT) from 6/10/03 to 6/13/06 with 30 mg alemtuzumab pre-conditioning and tacrolimus monotherapy. Nine RLALDLT recipients who received donor stem cells pre-transplantation were excluded. At 6 months post-transplant and every 2 to 6 months interval, we used clinical data to wean tacrolimus when possible (bid-->qd-->qod-->tiw-->biw-->qwk). The mean pre-operative MELD score was 12.4 (6 to 25), and the mean follow up was 24.3±10.9 months.
Results: Actuarial 1-, 2-, and 3-yr recipient and graft survivals were 93.6% and 91.4%, 88.2% and 86.0%, and 88.2% and 86.0%, respectively. At mean 2-yr follow-up, the mean total bilirubin was 0.83±0.54 mg/d. The cumulative acute cellular rejection (ACR) incidence was 0%, 4.3%, 8.5%, 8.5%, 10.6%, and 12.8% at 1, 2, 3, 4, 12, and 24 months , respectively. There was no graft loss from ACR. The mean rejection activity index was 4.5. Preweaning ACR was 10.6% and only 1 patient (2.1%) had postweaning ACR; all patients had steroid sensitive ACR. 34.1% of recipients had been weaned to space-dose monotherapy. Of importance in this protocol, at follow-up, at least 75.6% were still completely steroid-free since the time of transplantation. Ten recipients had 2 bile duct reconstructions. There were 31 (66%) duct-to-duct anastomosis and 16 (34.0%) Roux-en-Y anastomosis, and a total of 14 (29.8%) biliary complications. There were minimal recipients infectious complications, no PTLD, and no PTDM.
There were no live donor mortality, and minimal donor morbidities (1 or 2.1% major complication from san empyema, and 4.3% minor complications). There was no donor biliary complication, no surgical exploration, no blood transfusion (mean EBL 250 cc) and the mean donor hospital stay was 7 days.
Conclusion: This report represents the largest series to date of RLALDLT undergoing alemtuzumab preconditioning and tacrolimus monotherapy, and confirms the short-term safety and efficacy of this approach.

Abstract# 427 Poster Board #-Session: P20-III

REVASCULARIZATION OF MIDDLE HEPATIC VEINS IN THE DONOR AFTER LIVING RELATED LIVER TRANSPLANTATION. Andrea Schenk[1], Milo Hindennach[1], Holger Bourquain[1], Arnold Radtke[2], Tobias Schroeder[3], Massimo Malago[2], Christoph E. Broelsch[2], Heinz-Otto Peitgen[1]. *[1]MeVis Research, Center for Medical Image Computing, Bremen, Germany; [2]General Surgery and Transplantation, University Hospital, Essen, Germany; [3]Diagnostic and Interventional Radiology, University Hospital, Essen, Germany.*

Purpose: The drainage of segment 4 after donation of the right lobe including the middle hepatic vein (MHV) influences the regeneration of the remnant liver. Goal is to present first results of the analysis and visualization of postoperative data showing growth and revascularization of hepatic veins draining segment 4b in remnants.
Methods: Donor livers were resected following the course of the MHV, preserving the MHV for the graft. The first eight donors in a regeneration study with CT-scans pre- and postoperatively at day 10, and after 3, 6, and 12 months were analyzed and visualized with our new software. In this framework, the combination of images and and the matching of vessels from different time points allowed for the identification of revascularized 4b veins.
Result: In six donors revascularization of the segment 4b veins was found, in five cases these veins drained via left hepativ veins, in one case they were connected to veins of segment 4a only. Revascularization was found in images of month 3, 6 and 12, and was not visible in the first postoperative scans.

Conclusion: Revascularization of middle hepatic veins is an important factor in the regeneration of graft and remnant. Computer-assisted analysis and visualization help to identify these vessels and provide the basis for subsequent studies regarding drainage, revascularization, regeneration and territorial growth.



Visualization of the vascular system of the donor twelve month after LRLT. The liver has rotated to the right (resection line is visualized at the intraoperative position in the body) and the remnant veins show growth and revascularization of segment 4b with drainage via left hepatic veins (arrow).

Abstract# 428 Poster Board #-Session: P21-III

TRAINING IN LIVING DONOR LIVER TRANSPLANTATION – THE LIVER SURGERY TRAINER.

Christoph Logge[1], Jeanette Cordes[2], Konrad Muehler[2], Bernhard Preim[2], Christian Hillert[1]. *[1]Hepatobiliary Surgery, University Medical Center Hamburg, Hamburg, Germany; [2]Departement of Simulation and Graphics, University of Magdeburg, Magdeburg, Germany.*

Introduction: The absence of post-mortem donated organs led to an increase of Living Donor Liver Transplantation (LDLT). The extensive operation requires besides perfect anatomical knowledge a restricted indication of the donor and the recipient as well as a detailed operation planning. This can be facilitated by the employment of software assistants (*MeVisLab©*) for 3D reconstruction and operation simulation. So far no training systems for computer-assisted planning of LDLT exist. We developed the *Liver Surgery Trainer* based on the 4C/ID-model by Merriënboer. It is a case based training system for computer-assisted planning of liver surgery. The aim is to investigate the acceptance of the learning system as preparing training program for LDLT among specialised liver surgeons.

Material and Method: The focus of the system is on therapy decision making and operation planning. According to the 4C/ID-model, learning cases of different severity are offered. The 3D operation planning of LDLT consists of the definition of the resection plain, which is based on the analysis of the individual vascular and bile duct anatomy as well as on the accurate determination of the transplant volume and the volume of the donors prospective liver remnant. Patient selection and operation strategies can be trained by separated case embedded subtasks. The integration of *MeVisLab©* (Bremen) in the *Liver Surgery Trainer* (implemented in *Macromedia Director©*) via Active-X enables the embedded representation and interactive application of the 3D liver analysis and operation simulation of LDLT in the learning environment. The learner receives feedback of its task execution by confrontation of its result with one of an expert. **Conclusion**: The *Liver Surgery Trainer* can represent an important tool in education of liver surgeons in preparation of LDLT. It connects the evaluation of different operation strategies and indications validated by experts with practice of the new 3D analysis and visualisation software. The inhibition threshold to LDLT is to be further diminished and the safety of the donors and recipients to be further increased by purposeful practice of training programs. However the system can only complement not replace surgical training.

Abstract# 429 Poster Board #-Session: P22-III

ACCURACY OF PREOPERATIVE ESTIMATION OF SURGICAL ANATOMY AND GRAFT VOLUME USING THREE-DIMENSIONAL IMAGING RECONSTRUCTION AND VOLUMETRY IN LIVING DONOR LIVER TRANSPLANTATION.

Man Ki Ju[1], Myoung Soo Kim, Jinsub Choi, Gi Hong Choi, Hyung Jun Ahn, Hyun Jung Kim, Kyung Ock Jeon, Soon Il Kim. *[1]Depaartment of Surgery, Yonsei University College of Medicine, Seoul, Korea.*

The anatomical evaluation of donor is usually performed by the computerized tomography (CT) scan or magnetic resolution imaging (MRI) scan. Such tomographic images were reconstructed by 3-dimensional anatomy and used as resource for calculation of liver volume and possible graft volume. The purpose of this study is to ascertain the accuracy of three-dimensional imaging study and volumetry for prediction of graft anatomy and volume in LDLT. Twenty-two donors who planned the right lobe hepatectomy for LDLT were enrolled in this study prospectively. After full donor evaluation of hepatic artery, vein, portal vein and bile duct, we made supposed hepatectomy line along Cantlie's line. We determined the needs of mid-hepatic vein branch reconstruction by vein diameter (>5 mm). Using the commercial software for volumetry (VoxelPlus®2) (Medisis Co. Seoul, Korea), the total liver volume and graft volume were measured. The estimated graft weight was predicted from estimated graft volume on the basis of a 1:1 conversion factor.

We predicted the hepatic vein reconstruction for 5th segment, 8th segment and inferior hepatic vein in 19, 7 and 1 cases respectively. And we really performed venous reconstruction in 20, 11 and 2 cases respectively. The positive predictive rate of 5th segment venous reconstruction was superior to those of other venous reconstruction. Neither mortality nor surgical complication after donor hepatectomy occurred. The estimated total liver volume and graft volume were 1,252.1±194ml and 811.4±134ml respectively. So the graft to recipient weight ratio and residual liver volume ratio of donor were 1.28±0.25 and 35.52±2.48%. The real graft weight which was measured after cold perfusion was 779.8±141.0 g. The real graft weight was significantly correlated with estimated graft volume ($p<0.0001$, $r^2=0.827$). The majority of cases (18/22, 81.8%) showed the minimal disparity between estimated and real value (less than 10%). The pre-operative donor evaluation using 3-dimensional reconstruction imaging and volumetry supplies the reliable surgical information for LDLT.

Abstract# 430 Poster Board #-Session: P23-III

PREOPERATIVE MAGNETIC RESONANCE CHOLANGIOPANCREATOGRAPHY (MRCP) IMAGING ALLOWS TO STRATIFY RISK OF BILIARY COMPLICATIONS IN RIGHT LOBE LIVING DONOR LIVER TRANSPLANTATION (LDLT).

Randeep Kashyap[1], Peter Abt[1], George Tsoulfas[1], Manoj Maloo[1], Peter Horton[1], Saman Safadjou[1], Maureen Graham[1], Ashokumar Jain[1], Mark Orloff[1], Adel Bozorgzadeh[1]. *[1]Solid Organ Transplantation and Hepatobiliary Surg, University of Rochester, Rochester, NY, USA.*

Background: Accurate preoperative assessment of biliary anatomy in live donor hepatectomy may be helpful to assess the suitability of a graft as well as to stratify risk of biliary complications in perioperative period.

Aim: To assess the role of preoperative MRCP for defining biliary anatomy and to stratify risk of biliary complications in live donor liver transplantation (LDLT).

Methods: A retrospective review of MRCP's from 36 living liver donors was performed and biliary anatomy was classified per Couinaud schema.

Results: Preoperative MRCP demonstrated anatomic variations that excluded 3 potential donors due to multiple ducts or unexpected findings. 36 living liver donors underwent MRCP, and subsequentl right lobectomy. 66.6% had type A biliary anatomy, 8.3% type B, 11.1% type C, 8.3% type D, and 2.7% both E and F. Intraoperative cholangiography demonstrated a strong correlation with MRCP (p=0.00) and intraoperative findings (p=0.00). The overall rate of biliary complication in recipients of right lobe liver grafts was 45% for type A, 33% for type B, 25% for type C, and 100% for type D, E and F (p=0.0.06)

Conclusion: MRCP reliably identified variant biliary anatomy. The preoperative MRCP demonstrated congruence with the intraoperative cholangiogram and with the intraoperative biliary anatomy. MRCP is helpful in predicting risk of biliary complications in recipients, and identifies donors that would otherwise be excluded intraopertively by cholangiography, thus limiting the risk of unnecessary operation.

Abstract# 431 Poster Board #-Session: P24-III

PREDICTIVE FACTORS OF EARLY ALLOGRAFT LOSS IN ADULT LIVING DONOR LIVER TRANSPLANTATION.

Eduardo A. Fonseca[1], Eduardo Carone[1], Carla Matos[1], Rogerio Alves[1], Vincenzo Pugliese[1], Alcides A. Salzedas[1], Joao Seda Neto[1], Andre Godoy[1], Gilda Porta[1], Renata S. Pugliese[1], Irene K. Miura[1], Vera Baggio[1], Mario Kondo[1], Paulo Chapchap[1]. *[1]Liver Transplantation, Hospital do Cancer/Hospital Sirio Libanes, Sao Paulo, Brazil.*

The number of adult patients undergoing living donor liver transplantation (LDLT) has increased. The recipients' disease severity and technical aspects of LDLT can provide tools to estimate the risks of the procedure. The aim of this study was to analyze the predictive factors of early allograft loss after adult LDLT. From November/1997 to September/2006, 64 adult patients underwent LDLT. To identify the predictive factors of early graft loss two groups were compared: patients with grafts functioning beyond 3 months (n = 50), and either graft loss or patient death earlier than 3 months post-transplant (n = 14). The variables analyzed were: Graft to Recipient Weight Ratio (GRWR < 1% or > 1%), graft types (Right Lobe without median hepatic vein – RL or Left Lobe – LL), Model for End-Stage Liver Disease (MELD score <18 or > 18), United Network for Organ Sharing status (UNOS 2b vs 3), Child -Turcote score (Child C vs A + B), and hyponatremia. Variables which had a p value ≤ 0,10 on a univariate analysis were included in the multivariate analysis, as follows: MELD score > 18 (p value = 0,001), and RL < 1% (p value = 0,032). In the multivariate analysis MELD score > 18 and RL < 1% were independent variables associated with early graft loss in adult LDLT. Early (< 3 months) recipient and graft survival were 84.4% (54/64) and 78.1% (50/64), respectively. For this series, our cumulative patient survival was 71.9% (median follow-up: 15.6 months and range: 0 – 108 months). 4 patients were retransplanted due to vascular complications, and the cumulative graft survival was 65.6% This model may be useful to inform the high-risk candidates for adult LDLT.

Abstract# 432 Poster Board #-Session: P25-III

PREOPERATIVE MR CHOLANGIOGRAPHY OF POTENTIAL LIVING DONORS FOR LIVER TRANSPLANTATION.

Yong Jin Kwon, Kwang Soo Lee, Oh Jung Kwon. *[1]Surgery, HanYang University Hospital, Seoul, Korea.*

Purpose: Living donor liver transplantation is more technically challenging than cadaveric whole liver transplantation. Knowledge of the multiple and frequent variations in the anatomy of the biliary tree is absolutely essential to perform living donor liver transplantation. We reviewed MR cholangiography(MRC) for variations of hepatic duct and evaluated the feasibility of MRC as both conventional cholangiography and endoscopic retrograde cholangiography for making a preoperative evaluation of the donor candidates for a living donor liver transplantation.

Materials and Methods: Between Febuary 2005 and November 2006, 100 potential living donors underwent MR cholangiography at HanYang University Hospital. 53 were male, and 47 were female. We analyzed biliary anatomy of 100 potential living donor lives according to the Couinaud classification system. MRC findings were correlated with conventional cholangiographic and endoscopic retrograde cholangiographic findings (available in 25 cases).

Results: Variations of hepatic duct were divided into type A (normal: n = 56, 56%), type B (trifurcation at the confluence: n = 17, 17%), type C (either of the right sectoral ducts drains into the common hepatic duct: n = 21, 21%), type D (either of the right sectoral ducts drains into the left hepatic duct: n = 5, 5%), type E (absence of hepatic duct confluence: n = 1, 1%), type F (right posterior sectoral duct into the cystic duct: n = 0, 0%). MRC findings were concordant with the conventional cholangiographic and endoscopic retrograde cholangiographic findings in 24 of 25 (96%) cases.

Conclusion: So many variations of the biliary tree exist that the 'normal' anatomy is present in only 56% of people. A thorough understanding of anatomical variations is essential to improve and maintain the excellent results of living donor liver transplantation. MRC might play a role as a comprehensive imaging technique for the biliary anatomy in making a preoperative evaluation of potential living donors for liver transplantation.

Abstract# 433 Poster Board #-Session: P26-III

OUTCOME OF 140 LIVING DONORS FOR LIVER TRANSPLANTATION: SINGLE-CENTER EXPERIENCE IN BRAZIL.

Sergio Mies[1], Thomson M. Palma[1], Vinicius M. R. Silva[1], Thiago Beduschi[1], Andrea Kondo[2], Ana Olga N. G. F. Mies[1], Ana Suely C. Zan[1], Bianca Della-Guardia[1], Carlos E. S. Baia[1], Eloiza H. Quintela[1], Leonardo R. Ferraz[1], Marcio D. de Almeida[1], Margareth P. Lallee[1], Osvaldo I. Pereira[1]. *[1]Liver Unit, Albert Einstein Hospital, Sao Paulo, SP, Brazil; [2]Haemmatology, Albert Einstein Hospital, Sao Paulo, SP, Brazil.*

Introduction: The shortage of deceased organ donors in Brazil prolonged waiting time up to 4 years and brought a mortality rate of approximately 50% for patients on the list in places like São Paulo. This situation created a need for living donor grafts. However, concerns regarding donor safety must be always in perspective.

Objective: To present the outcomes of 140 living donors submitted to 139 right lobectomy and one left lobectomy.

Method: Data was collected from patient's hospital files.

Results: Between January 14th, 2002 and June 19th, 2006, the Liver Unit performed a total of 140 living-donor transplants. Donors were selected after a multi-step consent process was accomplished. The patients were 89 males (63.6%), with a median age of 32.6 years. In 110 cases (78.5%) the donor was a family relative and in 60 (54.5%) the donor was a son or a daughter. The median hospitalization time was 6 days (range 5-32 days). Peri-operatively, no donors received non-autologous banked blood, six (4.3%) received autologous blood. Only one donor received banked blood in the postoperative period. The complication rate during the first 30 days postoperatively was 20%. The most serious complication was a sepsis from unidentified agent or origin that required intensive care, surgical intervention and prolonged hospitalization (32 days). Three patients had deep venous thrombosis with pulmonary embolism and two of them underwent placement of inferior vena cava filter. One donor had postoperative bleeding and needed surgical intervention. The most common complication was biliary leak appearing on 14 patients (10%) and was treated conservatively. All donors are currently alive and well, and have returned to their normal daily activities.

Conclusions: With careful donor selection and specialized patient care, low morbidity rates can be achieved.

Abstract# 434 Poster Board #-Session: P27-III

USE OF CHOLEDOCHAL VARIX AS A PORTAL INFLOW IN DIFFUSE PORTAL VEIN THROMBOSIS DURING ADULT LIVING DONOR LIVER TRANSPLANTATION.

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Portal vein thrombosis (PVT) is a common sequela of longstanding portal hypertension with severe cirrhosis. Management options to revascularize the liver graft in patients with PVT range from thrombectomy to venous jump graft. In patients with extensive PVT including superior mesenteric vein, carvoportal hemitransposition is suggested as an alternative option in cadaveric donor liver transplantation. However, carvoportal hemitransposition is not applicable in living donor liver transplantation (LDLT) using partial liver graft because adequate portal inflow is vital for partial liver graft regeneration. We report a case of adult LDLT using choledochal varix as a portal inflow in a patient with extensive PVT and prominent choledochal varix. **(Case)** A 50 year-old Korean male patient with hepatitis B cirrhosis and repeated variceal bleeding was admitted for LDLT. Three-dimensional CT showed severe stenosis and extensive thrombosis of portal and superior mesenteric vein with choledochal varix. All the splanchnic venous flow was drained into liver through the choledochal varix. The diameters of recipient portal vein and choledochal varix were 5 mm and 10 mm, respectively. The donor was 24 year-old son. We procured right lobe graft from donor. The stenosed portal trunk of recipient was ligated, and recipient bile duct underneath the choledochal varix was closed with running suture. Portal vein of the graft was anastomosed to the appropriate level of choledochal varix. The patient was discharged 1 month after LDLT without any complications. **(Conclusion)** It was possible to use choledochal varix as a portal inflow in diffuse PVT, and this is probably the world-first report using choledochal varix as a portal inflow during adult LDLT.

Abstract# 435 Poster Board #-Session: P28-III

LIVING DONOR LIVER TRANSPLANTATION USING EXTENDED RIGHT LOBE GRAFT. Bum-Soo Kim[1], Sung-Gyu Lee[1], Shin Hwang[1], Kwang-Min Park[1], Ki-Hun Kim[1], Chul-Soo Ahn[1], Deok-Bog Moon[1], Tae-Yong Ha[1], Gi-Won Song[1], Ki-Myung Moon[1], Dong-Hwan Jung[1], Je-Ho Ryu[1], Hyo-Jun Lee[1], Jung-Ik Park[1]. *[1]Department of Surgery, Asan Medical Center, Seoul, Korea.*

(Background and Aims) Right lobe graft with middle hepatic vein (MHV) was introduced to resolve the potential problem of congestion in anterior segment. Technical improvement in adult-to-adult living donor liver transplantation (LDLT) have led to the use of right lobe grafts to overcome the problems encountered with 'small-for-size graft'. The major controversy remains that the venous drainage from anterior segment substantially depends on tributaries of the MHV, and deprivation of such tributaries may critically influence the postoperative graft function. (Material and Methods) From March 1998 to July 2006, 10 patients had received a right lobe graft with MHV. MHV was transected proximal to a major segment IVb hepatic vein whereas possible to preserve the venous drainage in the liver remnant. (Results) There was no donor death. One donor had postoperative bleeding. In all donors, the segment IVb hepatic vein was sacrified. The liver function was normal on postoperative day 7. The mean GRWR was 0.83 (0.68-1.16). In the view of hepatic vein reconstruction of extended right lobe grafts, we performed direct right hepatic vein anastomosis and separate reconstruction of MHV without interposition vein graft in the first 5 cases. Quilt venoplasty had been performed in another 5 cases. All recipients had patent middle hepatic vein and no graft congestion in the anterior segment. (Conclusion) LDLT using the extened right lobe liver graft can the extend the limit on the size of adult recipient and may be a viable option even when the donor is relatively small compared with the recipient.

Abstract# 436 Poster Board #-Session: P29-III

FIRST DUAL LEFT LOBE LIVER TRANSPLANTATION IN TURKEY. Burcin Taner[1], Murat Dayangac[1], Baris Akin[1], Deniz Balci[1], Zahide Kurt[1], Omer Ayanoglu[1], Cihan Duran[1], Refik Killi[1], Suleyman Uraz[1], Yildiray Yuzer[1], Yaman Tokat[1]. *[1]Department of Surgery, Florence Nightingale Hospital, Istanbul, Turkey.*

Living donor liver transplantation has emerged as treatment of choice in countries where availability of deceased donors is very limited. In Turkey, even though progress has been made in the last several years, organ donation remains low. As a result several centers in Turkey now perform adult to adult living liver transplants (LDLT). Here, we describe indication and result of the first dual left lobe adult to adult liver transplant in Turkey.

The recipient is a 47 year old female with Hepatitis B related cirrhosis and 3 cm hepatocellular cancer in segment 8. A routine metastatic work-up with thorax CT and bone scan were negative. Her alfa-feto protein was 22 at the time of initial presentation. Because of her cirrhosis and hepatocellular carcinoma, she was offered a LDLT. Donor 1: 23 year old man with same blood type and no previous health problems underwent evaluation for donation. MRCP showed a complex anatomy of right intra- and extrahepatic ducts. Donor 2: 28 year old man with same blood type and no previous health problems was then evaluated with the same protocol tests. He was found to have increased total and indirect bilirubin, 2.3 mg/dl and 1.7 mg/dl, respectively. Further evaluation showed Gilbert's disease. With less than optimal two donors for right lobe donation and no other donor available, a decision was made to use both donors for dual left lobe liver transplantation. The first left lobe liver graft is orthotopically implanted at the left position. The second graft is heterotopically positioned in the right upper quadrant fossa and rotated 180^0. The left lobe graft is too small to place in the right fossa; therefore a tissue expander is placed in right upper quadrant. The grafts were 333 and 358 grams. Neither of the donors had any morbidity, both donors were dismissed from the hospital on post-operative day 5. Maximum total bilirubin of Donor 2 reached 4.4mg/dl which then dropped to a plateau of 1.8 mg/dl. The recipient remained in the hospital for 14 days. She did not have any post-operative morbidity. CT scans of the recipient obtained on postoperative days 7-14-21 showed enlarging viable grafts.

Donor safety is of utmost importance in LDLT. When an optimal donor is not available for right lobe donation, dual left lobe donation can be entertained in countries where deceased donor organ availability is limited.

Abstract# 437 Poster Board #-Session: P30-III

THE IMMUNOLOGICAL ROLE OF LIPID TRANSFER/METABOLIC PROTEINS IN LIVER TRANSPLANTATION TOLERANCE. Yu-Fan Cheng[1,2], Toshiaki Nakano[2], Shigeru Goto[2,3], Chia-Yun Lai[2], Li-Wen Hsu[2], Seiji Kawamoto[4], Yu-Chun Lin[2], Ying-Hsien Kao[2], Kuei-Chen Chiang[5], Naoya Ohmori[5], Takeshi Goto[5], Shuji Sato[5], Bruno Jawan[2], Kazuhisa Ono[4], Chao-Long Chen[2]. *[1]Radiology, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung, Taiwan; [2]Liver Transplantation Program, Chang Gung Memorial Hospital-Kaohsiung Medical Center, Chang Gung University College of Medicine, Kaohsiung, Taiwan; [3]Iwao Hospital, Yufuin, Oita, Japan; [4]Department of Molecular Biotechnology, Graduate School of Advanced Sciences of Matter, Hiroshima University, Higashi-Hiroshima, Japan; [5]Faculty of Pharmaceutical Sciences, Josai International University, Chiba, Japan.*

Aims. In a rat tolerogenic orthotopic liver transplantation (OLT) model, recipient serum after OLT (post-OLT serum) has been reported to prevent allograft rejection. A previous proteomic study indicated that apolipoprotein E (apo-E), which is an important factor for cholesterol transportation, is expressed at the latter tolerogenic phase after OLT. It has also been known that adipose tissue-derived adipokine, adiponectin, is an essential factor for fatty acid catabolism. This study aimed to characterize the role of lipid transfer/metabolic proteins in liver transplantation tolerance.

Methods. To identify the apo-E and adiponectin in post-OLT serum, Western analyses and enzyme-linked immunosorbent assay (ELISA) were performed, respectively. The immunosuppressive activities of those factors were evaluated by inhibition of the mixed lymphocyte reaction (MLR).

Results. Western analyses showed that the mobility of apo-E was shifted at the latter tolerogenic phase after OLT in a natural tolerance model, and a similar phenomenon was confirmed in the serum of a drug-induced tolerance model (rejection model + cyclosporin A (CsA); 15 mg/kg/day, 0 to 14 days) after cessation of CsA. Further study revealed that neutralization of modified apo-E in post-OLT serum reduced the immunosuppressive activity. Additionally, plasma adiponectin was significantly elevated at the latter phase after OLT, and possessed MLR-inhibitory activity.

Conclusion. These results suggest that the mobility shift of apo-E and/or the up-regulation of adiponectin may be necessary for overcoming the rejection, recovering the liver allograft function, and following tolerance induction in experimental OLT models, and may be useful as one indicator to surmise the prognosis after liver transplantation.

Abstract# 438 Poster Board #-Session: P31-III

EFFECTIVENESS OF THE USE OF RABBIT ANTI-THYMOGLOBULIN FOR THE TREATMENT OF ACUTE CELLULAR REJECTION IN LIVER TRANSPLANTATION. Daniel G. Maluf[1], Robert A. Fisher[1], Luciana Mas[2], Valeria R. Mas[1], Adrian H. Cotterell[1], Marc P. Posner[1]. *[1]Surgery, Hume Lee Transplant Center, VCUHS, Richmond, VA, USA; [2]Biologia Molecular, Hospital Privado, Cordoba, Argentina.*

Background: Our goal was to investigate the safety and efficacy of Rabbit anti-Thymoglobulin (RATG) for the treatment of acute cellular rejection (ACR) in liver transplant (LT) recipients.

Methods: Twenty-six LT recipients, with biopsy-proven ACR during a two-year period consented and participated in this study. Patients were randomized into two arms of treatment. Ten patients were treated with ST (500mg methylprednisolone for 3 days, followed by a 3-month prednisone taper) and 16 patients were treated with RATG at 1.5 mg/kg/day for 5-7 days (pre-medication consisted of hydrocortisone 100 mg, Diphenhydramine 25 mg, and Acetaminophen 500 mg). All patients were re-biopsed to evaluate histological response to treatment. Banff criteria was use to grade ACR, as mild (RAI <3), moderate (RAI 3-6) and severe (RAI >6).

Results: The mean follow-up was 36 +/- 2.1 months in the ST group and 30 +/- 1.8 months in the RATG group. Patient demographics and transplant characteristics were similar between groups. Immunosuppressant protocols consisted of a CNI based immunosuppressant (CsA or Tc) plus mycofenolate mophetil and steroids. Rejection episodes occurred at a mean of 10.3 +/- 4.1 months in the ST group and 11.7 +/- 5.0 months in the RATG group post-transplantation. Severity of ACR was similar between groups. Post-treatment biopsy at 4 weeks revealed that 8/10 patients (80%) treated with ST showed complete resolution of ACR ant 2 patients required re-treatment. Post-treatment biopsy at 4 weeks revealed that 14/16 patients (88%) treated with RATG showed complete resolution of rejection and the remaining

2 patients showed complete histological resolution at 8 weeks without additional intervention. There were no significant differences in infections or malignancies post-treatment between the groups. The actuarial 1 and 3 year patient survival rates were 90% and 58% for ST group and 81% and 57% for RATG group, respectively (*p*=NS). The actuarial 1 and 3 year graft survival rates were 80% and 58% for ST group and 81% and 57% for RATG group, respectively, (*p*=NS).

Conclusion: RATG appears to be a safe and effective therapy compared to steroids to treat ACR in liver transplant recipients. Future randomized control studies are needed to further evaluate this finding.

Abstract# 439 Poster Board #-Session: P32-III

SAFE USE OF SIROLIMUS IN PATIENTS AFTER LIVER TRANSPLANTATION (LTX) ACCORDING TO THE GERMAN CONSENSUS RECOMMENDATIONS FOR SIROLIMUS IN LIVER TRANSPLANTATION.

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Background: Due to improved surgery and CNI based immunosuppression after LTX, patient's survival increased during the past decades. Therefore side effects of the long term CNI therapy become clinically more relevant. Impaired renal function, hypertension and diabetes are the most often seen CNI complications. For patients after kidney transplantation the use of mTOR-Inhibitors is already established. To further evaluate the probable benefit of mTOR-Inhibitors in LTX patients we studied the use of sirolimus at our centre.

Methods: 29 Patients were switched to sirolimus (20/29 mono therapy; 9/29 add on therapy) between 4 weeks and 21 years after LTX according to the German consensus recommendations for sirolimus in liver transplantation. All relevant data for the decision for sirolimus therapy and the corresponding follow-up data were analysed retrospectively.

Results: Primary indications for sirolimus use were impaired kidney function in 48% of patients studied, 34% with history of malignancy prior to LTX (9/10 HCC; 1/10 carcinoid), 7% with diabetes, 7% with miscellaneous indications, and 4% with hypertension. In all patients kidney function improved markedly with an increased GRF of on average 11.33 ml/min. In the subgroup of patients with malignancies 2/10 developed HCC recurrence and one patient with carcionid recurrence was observed. In the hypertension group only 2/8 patients showed improved blood pressure. Blood glucose levels returned to normal in 5/25 patients while 7/25 still need insulin therapy. During sirolimus therapy with average trough levels of 5.3ng/ml, only one patient discontinued therapy after she developed a severe allergic skin reaction.

Discussion:

Prevention of long term side effects form CNI-Inhibitors seems to be an upcoming goal in LTX aftercare. Besides combination therapy with the possibility to reduce the CNI dosing, the switch to an mTOR-Inhibitor might be an interesting alternative. In our cohort all patients improved their kidney function after being treated with sirolimus. In addition, in 20 patients a mono mainstay therapy was performed without any suspicion to rejection. Indications like malignancies, hypertension and diabetes seem to need further investigations.

Abstract# 440 Poster Board #-Session: P33-III

THREE YEAR FOLLOW-UP OF LIVER TRANSPLANT PATIENTS AFTER CONVERSION TO SIROLIMUS.

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Background

Immunosuppression with Calcineurin Inhibitors (CNI) following orthotopic liver transplantation (OLT) is associated with nephrotoxicity. The aim of this study was to assess the long-term effect of conversion to Sirolimus (SRL) from CNI after OLT

Methods

101 patients (pts) were switched to a SRL based CNI free protocol from their former CNI based immunosupression between 2001 and 2006. For this study all patients with complete 3y follow up were analyzed n=11 . SRL was started with a mean loading dose of 3.72mg/d (2 to 5mg), CNIs were stopped. Target trough level was 3 to 6 ng/ml. Drug levels were measured on day 4.

Indication for switch was anticipated improvement in renal function in patients with a Serum Creatinine (SCr) higher than 1.5 mg/dl. SCr was measured at time of switch and at 3, 6, 12, 24 and 36 months. Data were collected prospectively and reviewed retrospectively. Per sample T-test analysis was performed.

Results

Median time between OLT and conversion was 27.57(3.49;55.50 q1;q3)mo.

Median SRL maintainance dose was 1.31 mg/d (0.5 – 3mg)

Mean creatinine at time of switch was 2.25 (+/-0.86)mg/dl vs 2.01 (+/-0.92)mg/dl (p=0.017) vs. 2.01 (+/-1.0)mg/dl at 6mo (p=0.044) vs. 2.25 (+/-1.14) mg/dl at 12mo (p=0.989) vs. 2.69 (+/-1.69)mg/dl at 24 mo (p=0.325) and vs. 2.81 (+/-1.95) mg/dl at 36 mo (p=0.22) respectively.

Subgroup analysis for patients with a eGFR (MDRD) greater than 40ml/min/1,73m2 at time of switch n=6 was performed.

Mean creatinine at time of switch was 1.59 (+/-0.48)mg/dl vs 1.29 (+/-0.36)mg/dl (p=0.04) vs. 1.17 (+/-0.35)mg/dl at 6mo (p=0.064) vs. 1.47 (+/-0.47)mg/dl at 12mo (p=0.357) vs. 1.34 (+/-0.55)mg/dl at 24 mo (p=0.084) and vs. 1.49 (+/-0.66) mg/dl at 36 mo (p=0.588) respectively.

Discussion

Conversion from CNI to SRL showed a significant short-term beneficial effect, but did not prove to be beneficial in 36mo long-term follow up. Subgroup analysis showed the same beneficial short-term effect and a trend for stabilized SCr at 12, 24 and 36 months. Larger randomized trials will be necessary to validate these findings.

Abstract# 441 Poster Board #-Session: P34-III

CONVERSION OF CALCINEURIN INHIBITORS TO SIROLIMUS IN LIVER TRANSPLANT RECIPIENTS.

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Sirolimus (SRL) is an immunosuppressive agent with less nefrotoxicity and neurotoxicity than calcineurin inhibitors (CI). The usage in liver transplant recipients is not common and is not approved in many countries like USA and Brazil. The objective of this study is to evaluate the evolution of the patients converted to SRL in our group. Were retrospectively studied the renal function of 17 patients that use SRL isolated or in conjunction with another immunosupressor. The indication for conversion was renal disfunction in 16 patients and neurotoxicity in one. The serum creatinine (Cr) and the creatinine clearance (CrCl) were evaluated before and after conversion in different periods. The mean age is 62 years, being 11 men. Living donor liver transplantation was performed in 7 patients (41%). The indication for transplant was cirrhosis HCV (47%), HBV (24%), alcohol (12%), deficiency of α_1- antitrypsin (6%), autoimmune hepatitis (6%) and polycystic liver disease (6%). In one case was performed liver-kidney transplantation. The mean time to conversion was 52 months after the transplant (7 to 184 months). The immunosuppressants before conversion was CI + mycophenolate (MMF) in 16 cases (tacrolimus 73%, cyclosporine 27%) and tacrolimus isolated in 1 patient. The immunosuppressants after conversion was SRL isolated in 3 cases (18%), SRL+MMF in 9 cases (53%), SRL+MMF+CI in 2 (12%), SRL+IC in 3 patients (18%). All patients received hypolipidemic agents. Improvement or stability of the renal function was observed in 12 patients (71%) and progression of the renal disfunction was observed in 5 patients (29%). In 4 of the 5 patients with CI and SRL (80%) shows impairment of the CrCl. Related complications to SRL were found in 5 patients (31%). Two presented chronic rejection (controlled with low doses of tacrolimus). Peripheral edema was observed in 2 patients, in one of them was severe enough to interrupt the treatment with SRL. One of the patients that presented rejection needed hemodialysis. Strangely, one of the patients presented severe diabetes, requiring interruption of the SRL for the glycemic control. In conclusion, the use of SRL can improve or interrupt the progression of the renal disfunction in special situations. This is more evident in the patients maintained without CI.

Abstract# 442 Poster Board #-Session: P35-III

CLINICAL DIAGNOSIS OF BACTERIAL INFECTIONS FOLLOWING 106 CASES OF LIVER TRANSPLANTATION.

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[Objective] To summarize the experience of prevention of bacterial infections following liver transplantation in our center. **[Methods]** A total of 106 cases with liver transplantation in our center were retrospectively analyzed, with the purpose of investigating the clinical manifestation of bacterial infections, and discussing the features of them. **[Results]** Among the 106 cases, 35(33%) were diagnosed as bacterial infection, 11(31.4%) from them were finally dead. And as the outcomes following culture, 55(47.8%) were G+, 49(42.6%) were G-. **[Conclusion]** With the development of liver transplantation, bacterial infection has become the major cause for the mortality, the importance of the diagnosis and treatment related to it should be better noticed.

Abstract# 443 Poster Board #-Session: P36-III

LIVER RETRANSPLANTATION FOR HEPATITIS C, DO EXTENDED CRITERIA DONORS AFFECT OUTCOME?

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Introduction: The use of extended criteria donors is controversial. In the setting of retransplantation, the use of ECDs is further complicated by the increased technical demand of the operation and by the physiologic stress placed on the graft. The aims of this study are to investigate the effects of ECD grafts on retransplantation in patients with hepatitis C.

Methods: The UNOS liver transplant dataset was analyzed for all adult, non-status 1, liver retransplantations occurring in the U.S. since February 2002. ECD criteria included: age>59y, BMI>34.9, AST/ALT >500, maximum bilirubin >2.0, HCV or HBc positivity, DCD, cold ischemia time>12h, the use of pressors at the time of donation, culture positive infection, extensive alcohol abuse or cocaine use, non-basal cell skin cancer, and diabetes mellitus. Survival curves related to ECD criteria were analyzed. Multivariate regression models were constructed to analyze the independent predictors of 30, 90, 360 day, and overall mortality.

Results: 358 retransplants for hepatitis C were analyzed. There were 164 (45.8%) recipients who received livers with at least one ECD criteria. The mean recipient age was 50.5 and 51.8y (p=0.11), and the mean MELD was 28.0 and 26.5 (p=0.11), respectively, for patients receiving non-ECD and ECD grafts. The interval between transplants was 1187 days for the non-ECD recipients and 1299 for ECD recipients (p=0.43). Kaplan-Meier estimated overall survival was 70.8% in non-ECD and 70.9% in ECD recipients (p=0.91). Multivariate proportional hazards modeling demonstrated increased donor age to be the only statistically significant donor variable predicting overall increased mortality (HR 2.2, 95%CI 1.1- 4.2, p=0.02).

Conclusions: This data suggests that HCV positive recipients can tolerate retransplantation with ECD grafts with little impact on overall survival in selected cases. However, the use of livers from donors age>59 has a significantly negative impact on patient survival in retransplantation in HCV recipients. The interval of time between transplants may reflect a selection bias excluding patients with rapid recurrence of hepatitis C, further prospective studies are needed to investigate specific donor-recipient matching issues.

Abstract# 444 Poster Board #-Session: P37-III

EXCELLENT LONG-TERM OUTCOME USING SEVERE STEATOTIC LIVER GRAFTS FOR TRANSPLANTATION.

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Background: While there is an urgent need to increase the pool of available liver grafts, cadaveric livers with severe steatosis (>60%) are discarded for orthotopic liver transplantation (OLT) by most centres.

Methods: We analyzed patients receiving liver grafts with severe steatosis between January 2002 and March 2006. Primary end points were the incidence of primary graft non-function (PNF), and graft and patient survival. Secondary end points included primary graft dysfunction (PDF) and histological assessment of steatosis in follow-up biopsies. We also conducted a survey on the use of grafts with severe steatosis among leading European liver transplant centres.

Results: 19 liver grafts with severe steatosis were used for cadaveric OLT. The median degree of total liver steatosis was 90% (range: 65-100). Indications for OLT were: amyloidosis (n=1), fulminant liver failure (n=3) and various causes of liver cirrhosis (n=15). The median MELD score for patients with cirrhosis was 24 (range: 12-24). PDF and PNF occurred in 6 patients (33%) and in one patient (5%), respectively. Patient and graft survival after OLT were 94% at 1 and 3 years. Postoperative histological assessment demonstrated that the median total amount of liver steatosis decreased significantly (median: 90 to 15%, p<0*001). Our survey showed that all, but one, European centres, currently reject liver grafts with severe steatosis for any recipient.

Conclusions: Due to the urgent need of liver grafts, severely steatotic grafts should be no longer discarded for OLT. Maximal effort must be spent in minimizing the duration of ischemia and optimizing perioperative management when dealing with these high-risk organs.

Abstract# 445 Poster Board #-Session: P38-III

HEPATITIS B VIRUS DNA DETECTION IN ANTI-HBc POSITIVE DONORS GRAFTS.

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Backgound and Methods: The lack of organs for transplantation justifies the use of liver grafts serologically compromised since pre-established safety parameters are followed. Many centers in the world have been using liver grafts from anti-HBc positive/HBsAg negative donors, using lamivudine as a preemptive treatment for indeterminate time to minimize hepatitis B risk to receptors.The aim is to verify the presence Hepatitis B virus (HBV) DNA directly on liver grafts from anti-HBc positive donors and its possible risks to receptors. Nine liver needle biopsy samples collected during surgery (before revascularization) from March to September 2006 from anti-HBc positive/HBsAg negative donors. Biopsy fragments were immediately transferred to tubes containing 300ul of Brazol (LGC, Brazil) after collection in order to preserve nucleic acids. Viral DNA was extracted following manufacturers instructions and submitted to real time PCR for HBV DNA detection, with primers covering the S region of HBV genome, which amplify all known HBV genotypes (A-H). As reaction controls "TaqMan Exogenous Internal Positive Control Reagents" and "Pre Developed TaqMan Assays Reagents Human PO" (Applied Biosystems, EUA) kits were used. The first kit amplifies an exogenous DNA and access the presence of inhibitors in the sample and the former kit is utilized to control the extraction step. Both controls must be positive to validate a result.

Results: HBV DNA was detected in three of nine samples (33.3%). Only one sample result could not be validated, as the internal control did not amplify. All grafts receptors were preemptively treated with lamivudine and none of them develop clinical or serological Hepatitis B infection after liver transplantation.

Conclusion: In this study, 33.3% (3/9) of liver grafts samples from anti-HBc positive donors were also positive for HBV DNA, showing that HBV DNA presence was not rare in this small casuistic. These initial findings reinforces the need of further studies to better understand the clinical significance as well as the potential benefit for receptors of determining the HBV DNA status in the grafts before transplantation to guide the use of lamivudine preemptive treatment.

Abstract# 446 Poster Board #-Session: P39-III

ASSESSMENT OF CADAVERIC LIVERS DISCARDED FROM TRANSPLANTATION. A CORRELATION BETWEEN CLINICAL AND HISTOLOGICAL PARAMETERS. Jaroslaw Czerwinski[1,6], Agnieszka Perkowska[1], Andrzej Mroz[1], Beata Lagiewska[1], Leszek Adadynski[1], Magdalena Durlik[1], Maciej Glyda[2], Marek Pacholczyk[1], Paczek Leszek[1], Wojciech Polak[3], Zbigniew Sledzinski[4], Janusz Walaszewski[6], Dariusz Wasiak[1], Zbigniew Wlodarczyk[5], Wojciech Rowinski[1], Andrzej Chmura[1]. *[1]Dep. of General and Transplant. Surg., Med. Univ. of Warsaw, Warsaw, Poland; [2]Dep. of Transplant., District Hospital, Poznan Juraszow, Poland; [3]Dep. of Vascular and Transplant. Surg., Med. Univ. of Wroclaw, Wroclaw, Poland; [4]Dep. of General and Transplant. Surg., Med. Univ. of Gdansk, Gdansk Debinki, Poland; [5]Dep. of Transplant., Med. Univ. in Bydgoszcz, Bydgoszcz Sklodowskiej, Poland; [6]Polish Transplant Coordinating Center, Poltransplant, Warsaw, Poland.*

In Poland 70% of cadaveric livers are discarded from tx basing on donor clinical data. The aim was to evaluate, what microscopical changes were in these not procured for tx livers, and whether at least some of them could have been used for the isolation of hepatocytes.

In 100 donors disqualified from liver donation, liver biopsy was taken. The following tissue risk factors were considered: portal tracts and interstitial inflammation, piecemeal necrosis, macro and microvesicular steatosis, acidophilic degeneration, canalicular and intracellular cholestasis, fibrosis, iron storage in hepatocytes. Specimens were classified: "not suitable microscopically for tx (Gr. A) when major changes were found, "possibly suitable for tx" (less pronounced changes, Gr. B), "possibly suitable for tx" (Gr. C –minimal microscopical changes).

Donor factors were assessed: age, BMI, alcohol ingestion, ICU stay, hypotension, dopamine dose, sodium, bilirubin, AST, ALT, INR. Microscopical changes in the liver were correlated to donor risk factors.

Results

In 46% of tissues severe morphological changes (piecemeal necrosis, interstitial fibrosis, macrovesicular steatosis) were found (Gr. A). In 35% of biopsies only minimal changes were found (Gr. C).

The analysis of clinical parameters shown that majority of them did not correlate with histological changes. Only for livers from donors with history of alcohol, bilirubin > 2 mg/dl and AST/ALT > 150 U/l the incidence of severe histological changes was significantly higher.

Conclusions

From histological point of view appr. 35% of livers discarded from tx due to donor risk factors could have been harvested for tx as marginal organs or used for hepatocytes isolation.

Abstract# 447 Poster Board #-Session: P40-III

MARKERS OF HEPATITIS TYPE B IN THE POPULATION OF DECEASED LIVER DONORS IN POLAND. Jaroslaw Czerwinski[1,2,3], Piotr Malanowski[2], Dariusz Wasiak[1,3], Anna Grzybowska[1], Dominika Gutowska[1], Artur Kwiatkowski[3], Marek Pacholczyk[3], Andrzej Chmura[3], Janusz Walaszewski[2], Piotr Malkowski[1]. *[1]Dep. of Surgical and Transplantation Nursing, Medical Univ. of Warsaw, Warsaw, Poland; [2]Polish Transplant Coordinating Center, Poltransplant, Warsaw, Poland; [3]Dep. of General and Transplantation Surgery, Medical Univ. of Warsaw, Warsaw, Poland.*

In Poland HBsAg pos. donors are excluded from donation. From anti-HCV pos. only kidneys are offered to specifically matched anti-HCV pos. recipients. Anti-HBc pos. tests do not limit kidney or heart donation, but in liver transplantation anti-HBc pos. donors are a major problem. The aim of study: to assess the frequency of HBsAg and anty-HBc pos. tests in population of referred and actual organ donors and utilized liver donors.

The numbers of referred, effective and utilized liver donors were counted in the period 2001-05. The numbers of HBsAg, anti-HBc and HCV tests totally performed and tests with pos. and neg. results were calculated for all groups.

Results 3146 possible donors were referred, 2583 became effective. In 780 of them (30%) livers were procured. HBsAg was evaluated in 2878 and was pos. in 31 cases (1,1%). 21 donors were excluded, in 10 kidneys were procured.

The presence of anti-HBc was tested in 681 of 3146 referred (22%), in 610 of 2583 effective (24%) and in 274 (35%) liver utilized donors. Positive results were respectively in 113 (16,6%) of referred, 86 of effective (14,1%) and in 17 of utilized liver donors (6,2%). We confirmed that anti-HBc positive donors are high-risk for liver tx and reduce the number of tx livers; the index of liver donations was higher in the group of donors with known – neg. anti-HBc (257 out of 524 donors = 49%) than in the group of donors with known – pos. anti-HBc (17 out of 86 = 20%). Only 6,2% of tx livers were obtained from anti-HBc pos. donors (in kidneys - 14,1% organs were pos.). We also calculated that the index of liver donation was signif. higher in the group of donors with evaluated anti-HBc status (274 out of 610 donors = 45%) than in the donors with unknown (506 out of 1973 donors = 26%).

In the number of 780 liver donors, in 274 (35%) anti-HBc at the time of retrieval was known. 506 livers (65%) were retrieved without knowledge of anti-HBc status. In these cases the chance take an action to reduce the possibility of viral transmission is highly limited.

Abstract# 448 Poster Board #-Session: P41-III

LIVER TRANSPLANTATION FOR INCIDENTAL CHOLANGIOCARCINOMA: LARGE SINGLE CENTER EXPERIENCE. George Tsoulfas[1], Randeep Kashyap[1], Peter Abt[1], Ashokumar Jain[1], Peter Horton[1], Manoj Maloo[1], Saman Safadjou[1], Maureen Graham[1], Mark Orloff[1], Adel Bozorgzadeh[1]. *[1]Solid Organ Transplantation and Hepatobiliary Surgery, University of Rochester, Rochester, NY, USA.*

Introduction: Although cholangiocarcinoma carries a very poor prognosis and is for the most part considered a contraindication for liver transplantation, there is a debate as to whether the results are different when it is discovered as an incidental finding. The goal of this study is to evaluate the outcome of patients with an incidental finding of cholangiocarcinoma in their native hepatic explant.

Methods: A retrospective study of 1173 liver transplants, between the years 1998 and 2006, at our center revealed 170 transplants performed for malignancy, of which 7 had an incidental finding of cholangiocarcinoma. Median follow-up was 3.4 years and all patients received adjuvant chemotherapy under protocol.

Results: Four of the recipients were female and 3 male, with a mean age of 51.9 years and a MELD score of 16.6. All the tumors were intrahepatic. Characteristics of the tumors are presented in the Table. Four of these tumors were well-differentiated, two were moderately-differentiated and one was poorly-differentiated. There was recurrence in 3 patients at less than a month, 6 and 58 months respectively and two patients passed away, both from metastatic disease. Overall one and five year survival was 71% and 57% respectively.

Conclusion: Our experience indicates that acceptable patient long-term survival may be possible for appropriately selected patients with cholangiocarcinoma, an otherwise universally fatal disease. This should prompt a re-evaluation of the role of liver transplantation in the treatment for cholangiocarcinoma.

	Number of patients
Stage III, IV	4/7 patients
Vascular invasion	2/7 patients
Mean tumor size	6.7 cm
Positive margins	2/7 patients

Abstract# 449 Poster Board #-Session: P42-III

FIVE YEAR FOLLOW-UP AFTER LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA. Andres Valdivieso[1], Jorge Ortiz De Urbina[1], Mikel Gastaca[1], Maria Jesus Hernandez[1], Jose Ramon Fernandez[1], Javier Bustamante[1], Milagros Testillano[1], Maria Jesus Suarez[1], Miguel Montejo[1]. *[1]Liver Transplant Unit, Hospital de Cruces, Bilbao-Baracaldo, Vizcaya, Spain.*

Limits of hepatocellular carcinoma (HCC) with cirrhosis for liver transplantation (LT) are being discussing presently.We report our experience with LT for HCC under Milan criteria

From February 96 to October 05 we performed 566 LT on 536 patients.HCC with cirrhosis was the main reason of LT in 133 cases.

Males were 81%, and the average age was 58±7 years.Hepatitis C virus cirrhosis (HCV)(52.5%) and alcoholic cirrhosis (36%) were the main underlying diseases.Child-Pugh classification was:A-52.5%,B-32.5%,C-15%.

Only 5 patients had α.pheto protein higher than 200ng/ml.Average stay on the waiting list was 114 days, without any advantage over the other patients. While on the waiting list, 62.5% were treated with TACE and/or PEI.
Tacrolimus and steroids were the immunosuppressive drugs mainly used(90%). Median ICU and hospital stay was 3 and 15 days, respectively. In the explanted liver,70% still fulfilled the Milan criteria,while 16% fulfilled San Francisco criteria and 14% were out of the former criteria.Microvascular incvasion was seen in 21 livers.
Tumor recurrence appeared in 12 patients (9%).The average time of recurrence was 18 months (2-44.5 m) and the average survival after recurrence was 20 months (5.5-53 m).Recurrence was surgically removed in 5 patients: one patient, with lymph node retroduodenal recurrence is alive 41 months after resection;the other 4 patients,with recurrences in liver(2) and adrenal gland(2),died at 6,33,36 and 53 months.Average survival of resected patients was 31.5% months.
The follow-up was 1864±947 days(r 437-3925).Hospital mortality was 2.25% and overall mortality was 25%. Ten patients died of tumor recurrence: 5 fulfilled Milan criteria in the explanted liver,1 fulfilled San Francisco criteria,and 4 did not fulfilled both criteria.
Actuarial survival at 1, 5 and 7 years was 95%, 81% and 78%, respectively. Patients with alcoholic cirrhosis had better survival than HCV cirrhotic patients at 1, 5 and 7 years (96%, 87.5% and 85.5% vs 94%, 77% and 71%, respectively).
CONCLUSION: Liver transplantation is an excellent treatment for hepatocellular carcinoma under Milan criteria, even if these criteria are exceeded after surgery. HCC on HCV cirrhosis has worse survival than alcoholic cirrhosis. An increase in survival was seen when recurrence could be resected (31.5 vs 20 months).

Abstract# 450 Poster Board #-Session: P43-III

LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA: EXPERIENCE IN A SAUDI POPULATION.

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Purpose: To present our experience with deceased donor liver transplantation (DDLT) and living-donor liver transplantation (LDLT) for hepatocellular carcinoma (HCC).

Patients and Method: Between April 2001 and November 2006, a total of 117 LT procedures were performed (73 DDLTs and 44 LDLTs) in 113 patients (4 re-transplants). Out of the 113 recipients, 19 patients (16.8%) were transplanted with a suspicion of HCC (12 DDLTs and 7 LDLT). All 19 recipients had liver cirrhosis (17 viral-related and 2 cryptogenic). In l6 patients; the diagnosis of HCC was based mainly on radiological suspicion; and in 3 patients the diagnosis was confirmed by pretransplant biopsy. Milan's criterion was exceeded in only one patient.

Results: Male/female ratio was 13/6, median age was 55 years (range, 5-64), and median MELD score was 16 (range, 9-40). Alpha-Feto-Protein was ≥ 250 in only 5 patients (26%). Histopathological examination of explanted livers confirmed HCC in 17 patients, while 2 patients had incidental cholangiocarcinoma; mean tumor size was 4 cm (range, 2-6); mean tumor number was 2 lesions (range, 1-4); no extra hepatic spread and no macrovascular invasion seen in any of the explanted livers. After a mean follow-up period of 503 days (range, 28-1988), the overall patient and graft survival rates were 78.9% and 73.7% respectively; and the overall disease-free patient and graft survival rates were 73.7% and 68.4% respectively. Two patients died within one week posttransplant due to primary non function; this was attributed to the our trend to use marginal donors in HCC patients. 3 out of the remaining 17 patients (17.6%) had late tumor recurrence (recurrence was diagnosed at 10, 13 and 18 months posttransplant); two out of the 3 recurrences occurred in the cholangiocarcinoma patients; while the third patient who suffered recurrence had a large multifocal HCC exceeding the Milan's criteria. Two patients out of the 3 who suffered recurrence died from advanced tumor within few months of diagnosis.

Conclusions: In our experience, DDLT and LDLT for HCC within the Milan's showed good long-term outcomes. On the other hand; LT for HCC outside the Milan's criteria and for cholangiocarcinoma showed bad outcome with late tumor recurrence. The use of marginal donors in HCC patients might compromise the outcome in this group of patients.

Abstract# 451 Poster Board #-Session: P44-III

LIVER TRANSPLANTATION OUTCOME FOR HEPATOCELLULAR CARCINOMA LIMITED TO MILAN CRITERIA AND FOR EXTENDED CRITERIA.

Maria L. Zanotelli[1], Guilermo Kiss[1], Ana L. Gleisner[1], Mario H. Meine[1], Tomaz M. J. Grezzana[1], Ian Leipnitz[1], Eduardo S. Schlindwein[1], Claudio A. Marroni[1], Ajacio M. Brandão[1], Guido P. C. Cantisani[1]. *[1]Transplante de Figado, Santa Casa de Porto Alegre, Porto Alegre, RS, Brazil.*

The adoption of Milan criteria to select candidates with hepatocellular carcinoma (HCC) has resulted in improved patients survival after liver transplantation (LT), with equal or better results than when performed for nonmalignant indications. However, there are patients with HCC lesions beyond Milan criteria that have good results when submitted to LTx. The aim of this study was to analyse the patient's survival and post-transplant disease-free survival comparing HCC within and outside Milan criteria.
Methods: We retrospectively studied 111 patients submitted to LT for HCC and cirrhosis. The majority of patients were male (80,72.1%) and the mean age was 56.54±8.2 years. Hepatitis C Virus was implicated in 94 (84.7%) cases and 31 (27.9%) patients had incidental tumors. Eighty four (75.7%) patients fulfilled the Milan criteria at time of LT.
Results: Compared with patients that fulfilled the Milan criteria, patients outside this criteria had similar age, sex and Child distribution. At pathologic evaluation, the tumors from the outside criteria group were more likely to have vascular invasion (4.8% vs 14.8%, p=0.100), poor differentiation (20.8% vs 45.8%, p=0.02), satellite nodules (20.2% vs 40.7%, p=0.04) and absence of tumor capsule (40.5% vs 14.8%, p=0.02). The Milan criteria was a strong predictor of overall and disease-free survival in univariate analysis. However, in the group of patients outside the Milan criteria, the 3-year disease-free survival was 80% for patients with no vascular invasion or satellite nodules and with good histological differentiation compared to 26.5% in patients with at least one unfavorable pathologic feature (p= 0.07). Eight out of 27 (29.6%) patients had no vascular invasion, satellite nodules neither poor differentiation at pathologic evaluation of the native liver.
Conclusion: the Milan criteria represents a strong prognostic discriminator for patients with HCC treated with LT. Nevertheless, the criteria could be expanded to include at least an aditional 30% of patients with HCC with long-term results that are comparable to those patients within the Milan criteria. Unfortunetely, important favorable prognostic indicators can only be determined at pathologic evaluation of the native liver.

Abstract# 452 Poster Board #-Session: P45-III

SYSTEMIC ADJUVANT CHEMOTHERAPY FOR STAGE III OR IV HEPATOCELLULAR CARCINOMA POST LIVER TRANSPLANTATION IMPROVES SURVIVAL.

Gary S. Xiao[1], Sheng Tai[2], Paulo Fontes[1], T. Clark Gamblin[1], David A. Geller[1], Wallis Marsh[1], Michael A. Nalesinik[3], Brian I. Carr[1], Michael E. De Vera[1]. *[1]Thomas E. Starzl Transplantation Institute, Department of Surgery, University of Pittsburgh Medical Center, Pittsburgh, PA, USA; [2]Hepatobiliary Surgery, The Second Affiliated Hospital of Harbin Medical University, Harbin, Heilongjiang, China; [3]Thomas E. Starzl Transplantation Institute, Transplant Pathology, University of Pittsburgh Medical Center, Pittsburgh, PA, USA.*

BACKGROUND: The effectiveness of systemic adjuvant chemotherapy for liver transplantation (OLT) in patients with advanced hepatocellular carcinoma (HCC) is unproven.
AIM: In this study, we assessed the long-term recurrence-free survival of patients with advanced HCC who were treated with adjuvant chemotherapy after OLT at our institution.
METHODS: Thirty-seven patients with cirrhosis and advanced HCC (pathologic TNM stage III or above) who underwent OLT between May 1989 and December 2005 were treated with systemic chemotherapy post OLT. There were 29 males/8 females, all Caucasian, with a mean age of 55.7 ± 8 years (range, 38-73 years) and an average follow-up of 55.5 ± 39 months (range, 6 to 185 months). Vascular invasion was present in 25 cases (13 gross invasion, 12 microscopic invasion). The pathologic TNM staging in 14 patients was stage IIIA, and in 23 subjects was stage IVA. Chemotherapeutic regimen was either 5-fluorouracil-based or cisplatin (plastinol)-based, the latter with or without adriamycin (doxorubicin).

RESULTS: The 1 year, 5 year, and 10 year recurrence-free survival was 86%, 51% and 44%, respectively. Sixteen patients are currently alive, including 13 of 25 (52%) patients with vascular invasion. Of 21 patients who died, five had lung metastasis, four had liver recurrence, and three had liver and lung involvement. Nine deaths were non-cancer related.
CONCLUSIONS: Adjuvant systemic chemotherapy post OLT in patients with advanced HCC markedly improves long-term recurrence-free survival compared to historical data.

Abstract# 453 Poster Board #-Session: P46-III

HCC IN LIVING DONOR LIVER TRANSPLANTATION – DO WE NEED FURTHER MODIFICATIONS WITH THE MILAN CRITERIA? Choon Hyuck David Kwon[1], Gyu-seong Choi[1], Jae Berm Park[1], Doo Jin Kim[1], Sung-Joo Kim[1], Jae-Won Joh[1], Suk-Koo Lee[1]. *[1]Department of Surgery, Samsung Medical Center, SunkynKwan University, Seoul, Korea.*
Background) The tumor biology of hepatocellular carcinoma (HCC) affects recurrence after liver transplantation (LT) but the most selection guidelines are only based on tumor size and number and many centers have attempted modifying the Milan criteria (MC), especially in living donor settings. **Purpose)** The aim of the study is to evaluate the possibility of modifying the selection criteria with focus on tumor biology in living donor LT setting. **Methods**) One-hundred-forty patients who survived more than 3 months after living donor LT with the diagnosis of HCC between November 1999 and May 2006 were included in the study. The operability of the patients was decided based upon Milan criteria but LT beyond the criteria was performed when the patient and/or the guardian requested even after thorough explanation. Absolute contraindication includes evidence of invasion to major vessel on image study and/or extrahepatic metastasis. Hepatitis B was the cause in 92.9% of the patients and the median follow up duration was 27.7 months. **Results)** There was no difference between patients within or beyond Milan criteria (p=0.509). Patients with tumor size =< 5cm and alpha fetoprotein(αFP) =< 400ng/mL had better prognosis compared to size > 5cm, and αFP > 400ng/mL (p=0.035 and 0.003, respectively). However, multiple tumors had a better prognosis compared to patients with less than 3 tumors. Patients with =<5cm and αFP) =< 400ng/mL have a 5 year survival of 86.8% and those outside the criteria, 51.6% (p=0.001). **Conclusion)** Accordingly, patient selection by maximal tumor size of 5cm regardless of tumor numbers and αFP level of 400ng/mL without restriction of tumor numbers may result in a better patient selection criteria.

Abstract# 454 Poster Board #-Session: P47-III

HEPATOCELLULAR CARCINOMA IN THE SETTING OF LIVER TRANSPLANTATION – AN INITIAL EXPERIENCE. Jose T. Valenca Junior[1], Gleydson Cesar O. Borges[1], Ivelise Regina C. Brasil[1], Katia F. Vasconcelos[1], Douglas H. Campos Filho[1], Fernanda P. Cavalcante[1], Paulo Everton G. Costa[1], Joao Batista M. Vasconcelos[1], Jose Huygens P. Garcia[1]. *[1]Centro de Transplante de Figado do Ceara, Federal University of Ceara, Fortaleza, Ceara, Brazil.*
OBJECTIVE: To define the incidence and characteristics of Hepatocellular Carcinoma (HCC) in the explanted liver of patients who underwent liver transplantation (LTX). METHODS: One hundred and ninety patients were transplanted in our center between May 2002 and November 2006. A retrospective review of the patients with histopathologic diagnosis of HCC was performed. RESULTS: The incidence of HCC in the histopathologic exam was 11.6% (22 patients). Of those, 4 (18.2%) were incidentally found tumors. There were 18 men and 4 women with a median age of 57.8 years. Hepatitis virus C was involved in 68% of the cases. Eight patients (36.3 %) presented a solitary nodule, 10 (45.4%) had 2 or 3 nodules, and 4 patients (18.2%) had more than three nodules. The maximal diameter of the largest tumor was not larger than 3 cm in 8 patients (36.3%), from 3 to 5 cm in 12 patients (54.5%) and exceeded this size in 2 patients (9.1%). The nodules' number was underestimated in 68% by the imaging studies. Alpha-fetoprotein (AFP) levels were normal (up to 15ng/ml) in 15 patients (68.2%), between 15 and 50ng/ml in 5 (22.7%) and exceeded 100ng/ml in 2 patients. The histopathological grade of differentiation of the tumors was assessed as "well" in 4 patients (19%), moderate in 16 (76.2%), and poor in 1 (4.7%). Four tumors showed microscopic invasion. Mean time between the diagnosis of HCC and LTX was 14 months and only 3 patients were transplanted after the implementation of Model of End Stage Liver Disease (MELD). Two patients (9%) had post-transplant HCC recurrence and both died within a few months. Both had micro vascular invasion and in one of them 4 nodules were found in the explanted liver. CONCLUSION: In our study, AFP levels had low sensibility in the pre-operative diagnosis of HCC. The images studies weren't as reliable as explants' histopathologic exam in the analyze of nodules' size and numbers. Most patients received LTX during Child-Pugh criteria for liver allocation, this way there might have been increase in nodules' size and number between the patient's last image study and LTX procedure. We predict that with the implementation of MELD in Brazil, after July 2006, the patients with HCC will receive LTX faster and with better outcomes.

Abstract# 455 Poster Board #-Session: P48-III

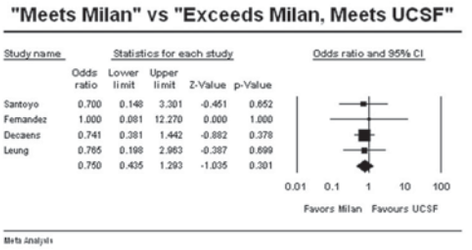
EXTRAGASTROINTESTINAL STROMAL TUMOR AND LIVER TRANSPLANTATION – CASE REPORT. Ilka F. S. F. Boin[1], Marilia I. Leonardi[1], Raquel Stucchi[1], Jazon R. Almeida[1], Luiz S. Leonardi[1]. *[1]Unit of Liver Transplantation, Faculty of Medical Science - Unicamp, Campinas, São Paulo, Brazil.*
INTRODUCTION: Gastrointestinal stromal tumors (GIST) are the most frequent mesenchymal tumors of the gastrointestinal tract.Rare cases are identified outside the GI tract and are collectively known as extragastrointestinal stromal tumors (EGISTs).
AIM: To report an EGIST case in a liver transplantation patient.
METHOD: A 64-year-old man was presented to our service with hepatic cirrhosis due to chronic type B hepatitis and alcoholism. He also had a 3.5 cm hepatocarcinoma diagnosed at liver segment III. He was submitted to orthotopic liver transplantation by the piggyback technique 15 months before. Histopathologic findings include moderately differentiated trabecular hepatocellular carcinoma (Edmondson Steiner grade 2) with 3.5 cm diameter located at segment III and another small well-differentiated hepatocellular carcinoma with 2 cm diameter (Edmondson Steiner grade 1) at segment V. Starting the second day after surgery, he received lamivudine 150mg daily and began immunosupression with a tacrolimus (FK506) dosage of 0.1mg/kg/day. Two months later, mycophenolate sodium was introduced because of impaired renal function, in order to reduce the tacrolimus dosage. He also had diabetes mellitus and systemic arterial hypertension after liver transplantation. Four months later he noticed a nodule in the perineum. On digital rectal examination a hardened, mobile and painless 3 cm subcutaneous node localized on the right lateral quadrant, 2 cm distant from the anus became evident. Tumor markers including carcinoembryonic antigen (CEA), prostate-especific antigen and CA19-9 values were all within normal limits. A surgical resection with 1 cm margin was performed.
RESULTS: The histopathologic report revealed a 5.0 x 3.0 cm fusocellular gastrointestinal stromal tumor (GIST). Five mitosis per 50 high powered fields were present. The immunohistochemical study showed: CD117 + / CD34 + / S100 +/ Desmin –/ 1A4 +; compatible with GIST. A computerized tomography was taken and showed no evidence of metastasis, lymphadenopathy or any other abdominal or perineal lesion. After six months, at present moment, the patient continues being asymptomatic, with no evidence of GIST recidive.
CONCLUSION: Surgical resection was the treatment of choice and was performed with the intention to performing complete en bloc resection of the tumor. This the first case reported.

Abstract# 456 Poster Board #-Session: P49-III

INTERPRETING "NO SIGNIFICANT DIFFERENCE" BETWEEN MILAN AND UCSF CRITERIA: A META-ANALYSIS OF LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA. Thomas D. Johnston[1], Roberto Gedaly[1], Hoonbae Jeon[1], Dinesh Ranjan[1]. *[1]Transplantation Section, University of Kentucky, Lexington, KY, USA.*
Findings of "No significant difference" or p-value > 0.05 are often interpreted as indicating clinical or practical equivalence. An alternative, and indistinguishable, explanation is type II error: incorrectly rejecting a true hypothesis, often on the basis of an "underpowered" study with insufficient subject numbers.
The success of the Milan criteria for hepatocellular carcinoma in expanding the indications for liver transplantation has spawned a debate as to whether even more "liberal" criteria might produce acceptable results. The UCSF criteria have been demonstrated to show a statistically significant improved 3-5 year patient survival, as compared to tumors exceeding the criteria. We performed an extensive literature search for studies in which direct comparisons could be made for 3-5 year patient survival between patients meeting the Milan criteria and patients exceeding it but meeting the UCSF criteria. The resulting cumulative meta-analysis is detailed below.

The strongest evidence for an assertion of clinical equivalence between these groups would be p < 0.05 but with an odds ratio near 1.0—statistically but not clinically significant. However, the number of subjects needed to achieve this rises exponentially as the odds ratio approaches 1.0. Almost as compelling is a consistent pattern of studies, as evidenced by the stability of the odds ratio between studies and the p value smaller in the combined studies than in each individual. This suggests that adding subjects, which reduces the risk of type II error, does not alter the odds ratio (≈0.75), which, as expected, slightly favors Milan criteria.

Of note, whenever possible, we used the pathologic stage based on findings in the explant as the basis for criteria inclusion. The problem of pre-transplant, or clinical, under-staging is a serious, but distinct, problem than requires separate exploration. We conclude that there is good evidence suggesting equivalent patient survival between patients meeting the Milan criteria and those meeting the somewhat more expansive UCSF criteria.



Abstract# 457 Poster Board #-Session: P50-III

LIVER RETRANSPLANTATION (ReLT) OUTCOME IN A SINGLE INSTITUTION. A 18-YEAR EXPERIENCE. Ramon Charco, Josep Marti, Calatayud David, Ferrer Joana, Antonio Rimola, Miquel Navasa, Constantino Fondevila, Jose Fuster, Juan Carlos Garcia-Valdecasas. *[1]Liver Transplantation Unit, IMDiM, Hospital Clinic, Barcelona, Spain.*

The aim was to analyze the outcomes ReLT and to identify a group with a high risk of poor outcome.

PATIENTS AND METHODS

From 1988 to 2006, 1,226 LT were performed. 108 (8.8%) were ReLT. Main indications for ReLT were: PNF, 21(19.4%); arterial, 16(14.8%); biliary, 11(10.2%); chronic rejection (ChR), 24(22.2%); viral recurrence, 21(19.4%). Prior to ReLT, mean Rosen score and MELD were 1.9±0.8 and 19.±8 respectively. Eighty six patients had a high Rosen score. ReLT were classified as urgent (wk 1), 25; semi-urgent (wk 1 – mo 3), 20; and non-urgent (> mo 3), 63. Patients were divided in two periods: 1) before 1995 and 2) after 1995. Mean follow-up was 8.9 y, with a minimum follow-up of 6 m.

RESULTS

ChR was the main ReLT indication period 1 (18/43, 41.8%) and viral and cholestatic disease recurrence (19/65, 29.2%) in 2. Although there were no differences in mean Rosen score and MELD between the periods, intraoperative red-cell requirements were higher in the period 1 vs 2 (15±17 and 8±7U, respectively; $p<0.05$). Furthermore, in period 1, higher post-ReLT infection and postoperative stay was found in comparison with 2 (76.6 vs 55.3%, and 45.5±36.7 vs 30.6±21.12d, respectively; $p<0.02$). Postoperative mortality were 25.6 in period 1 and 13.8% in period 2, p:ns.

Rosen score was higher in the non-urgent group in comparison with the urgent (2.12±0.41 vs 1.34±0.64, $p<0.0001$). On the contrary, MELD score was higher in the urgent vs non-urgent group (26.5±10.7 vs 16.7±6.1, $p<0.0001$). Intraoperative red-cell requirements were higher in the non-urgent group compared with the semi-urgent and urgent groups (14.4±14, 6.7±4.0 and 4.8±5.7U, respectively; $p<.001$).

Overall 1-, 5- and 10-year ReLT survivals were 72, 63 and 58% respectively. One- and 5-year patient survivals were 75% and 68% vs 68% and 56% for periods 1 and 2, respectively ($p<.0001$). No differences in 1- and 5-year survivals were found in patients retransplanted for viral recurrence in comparison with the remaining non-urgent indications (70 and 57% vs 72 and 60%, respectively). One- and 5-year ReLT survivals according high, medium and low Rosen scores were 75 and 70%, 78 and 62%, and 78% and 68%, respectively ($p<.05$).

CONCLUSIONS

Results of ReLT improved over the time. Patients with a high Rosen score or HCV rrecurrence have to be retransplated due to the excellent survival achieved.

Abstract# 458 Poster Board #-Session: P51-III

THE POST-TRANSPLANT OUTCOME OF VERY ILL PATIENTS WITH HIGH MELD SCORES IN ADULT-TO-ADULT LIVING DONOR LIVER TRANSPLANTATION. Nam-Joon Yi[1], Kyung-Suk Suh[1], Hae Won Lee[1], Eung-Ho Cho[1], Woo Young Shin[1], Jai Young Cho[1], Jung-Hwan Yoon[2], Kuhn Uk Lee[1]. *[1]Surgery, Seoul National University College of Medicine, Seoul, Korea; [2]Internal Medicine, Seoul National University College of Medicine, Seoul, Korea.*

Background: Adult-to-adult living donor liver transplantation (ALDLT) has been evolving over the past decade. It has been known that ALDLT recipients had shown comparable outcome to the deceased donor recipients because of being better risk candidates. However, outcome of very ill patients with high MELD score is fairly elusive in ALDLT.

Patients and Methods: Between 1999 and 2005, 214 recipients at our center were underwent ALDLT. Based on pre-transplant MELD, recipients were stratified as low risk (≤25, Group L, n=132) and high risk (>25, Group H, n=82). Mean MELD scores were 17.1 in Group L and 33.1 in Group H, respectively. Primary end points were patient one-year survival. Mean post-transplant follow-up was 31.3 months.

Results: In pre-transplant recipients' dada, Group H had more uncontrolled ascites (52.4%), encephalopathy (64.6%), and UNOS status 2A (40.2%) than Group L (28.8%, 32.6%, 5.3%) ($p<.05$). Hepatitis B infection was the most common original disease in the both Group L (79.5%) and in Group H (75.6%). However, accompanying hepatocellular carcinoma was more common in Group L (54.5%) than in Group H (18.3%) ($p=.000$). The 2 groups were not different in terms of donor demographic, graft factors, or intraoperative data. Mean hospital stay were 1.1 months in Group L and 1.6 months in Group H, respectively ($p=.000$). One-year patient survival was 86.4% in Group L and 81.7% in Group H, respectively ($p=.311$).

Conclusion: ALDLT recipients with high MELD scores (25) were associated with more hospital stay but their one-year survival rate was acceptable compared to the others with low MELD score.

Abstract# 459 Poster Board #-Session: P52-III

OUTCOME OF PATIENTS TRANSPLANTED FOR ALCOHOLIC LIVER DISEASE – ANALYSIS OF THE EUROPEAN LIVER TRANSPLANT REGISTRY (ELTR). Patrizia Burra[1], Marco Senzolo[1], Rene' Adam[2], Vincent Karam[2], Giacomo Germani[1], James Neuberger[3], for ELITA. *[1]Department of Surgical and Gastroenterological Sciences, University of Padova, Padova, Italy; [2]ELTR, Centre Hepato-Biliaire, Paul Brousse Hospital, Paris, France; [3]Liver Unit, Queen Elizabeth Hospital, Birmingham, United Kingdom.*

Alcoholic liver disease (ALD) remains a major indication for liver transplantation (LT) with similar or better outcome to other indications

The aim of our study was to compare survival between patients transplanted for ALD and patients transplanted for ALD with concomitant viral infection (ALD+HCV, ALD+HBV), viral related (HCV, HBV) or cryptogenic cirrhosis (CRY).

Data from 10009 ALD, 1126 ALD+HCV, 313 ALD+HBV, 6739 HCV, 3680 HBV and 2700 CRY patients transplanted between 1998-2005 were collected from the ELTR. Six and 12-month graft survival estimates and relative risks accompanied by their respective 95 % CI were reported. Kaplan Meier estimates, log rank tests, Cox proportional hazard models and Holm´s procedure were used.

Mean recipient age was significantly higher in HCV compared to the other groups. The majority of patients in all groups were males. Mean donor age was significantly higher in ALD+HBV compared tothe other groups but ALC+HCV. The majority of donors were males. Initial IS was CyA in 51% and TAC in 49% of ALD patients, and was similar in the other groups.

The 6 and 12-month graft survival after LT for ALD was 86 and 81% respectively similar to that for ALC+HCV (84%, 80%), ALD+HBV (88%, 86%), HCV (82%, 76%), HBV (84%, 80%) and significantly better than for CRY LT patients (75%, 72%). CRY patients however had urgent indication to transplant and UNOS status 1+2 at transplant in a significantly higher proportion compared to the other groups. Amongst causes of deaths, ALD patients showed almost double incidence of de novo tumours (11%) and PTLD's (1.4%) compared to viral and cryptogenic groups.

One and 5-year graft survival of ALD patients grafted before 1990 was 65% and 49%; between 1990 and 1995 was 80% and 67%; between 1995 and 2000 was 82% 69%, between 2000 and 2005 85% and 72% respectively, therefore improving over the years. On the contrary, graft survival remained similar over the years in patients transplanted for HCV cirrhosis.

Liver transplantation for ALD demonstrates 6 and 12 month survival similar to viral but definitively better than cryptogenic cirrhosis. The improvement of results of transplantation for ALD over the years was not seen in the HCV group.

Abstract# 460 Poster Board #-Session: P53-III

NON-HEART BEATING DONOR LIVER TRANSPLANTATION: EXPERIENCE IN THE NETHERLANDS AFTER INTRODUCTION OF A RESTRICTIVE NATIONAL PROTOCOL. Jeroen Dubbeld[1], Robert Porte[3], Bart Hoek v[2], Ahmet Demirkiran[4], Geert Kazemier[4], Herold Metselaar[5], Maarten Slooff[5], A. Berg vd[6], Jan Ringers[1]. *[1]Surgery, Leiden University Medical Center, Leiden, Netherlands; [2]Hepatology, Leiden University Medical Center, Leiden, Netherlands; [3]Surgery, University Medical Center Groningen, Groningen, Netherlands; [4]Surgery, Erasmus Medical Center, Rotterdam, Netherlands; [5]Hepatology, Erasmus Medical Center, Rotterdam, Netherlands; [6]Hepatology, University Medical Centre Groningen, Groningen, Netherlands.*

Background

Non-heart beating donors (NHBDs) may provide a feasible option to expand the donor pool of organs for transplantation purposes. In 2001 we introduced a national protocol for multi-organ donation (MOD) for accepting organs from NHBDs in the Netherlands. This report describes the outcomes of liver transplantation of NHBD grafts using this protocol.

Methods

The national non-heart beating MOD protocol includes several criteria, which have been used in order to select suitable donors for liver, lung, kidney and pancreas. Between October 2001 and January 2006 fifty livers procured from controlled NHBDs were transplanted. Retrospective evaluation of these transplantation procedures is described.

Results

In a period of 50 months 50 livers were retrieved from NHBDs, from which forty-eight were transplanted in the Netherlands. Mean follow up was 17 months. One year patient and graft survival were 81% and 67 % respectively. Primary sclerosing cholangitis was associated with increased incidence of biliary complications. In total nine (19%) re-transplantations were performed. Protocol violations resulted in worse outcome. Unexpectedly, introduction of NHB-MOD has not led to an increase of the total amount of available livers for transplantation, since in this same time period a significant decrease of heart-beating donation was observed.

Conclusion

The results of introduction of a NHB-MOD protocol in the Netherlands show that this is a viable source of livers suitable for transplantation. If these procedures are done according to a strict protocol, results are comparable with results obtained with heart-beating donation.

Abstract# 461 Poster Board #-Session: P54-III

ETIOLOGY, CLINICAL SEVERITY AND HEALTH-RELATED QUALITY-OF-LIFE (HRQOL) IN CIRRHOTIC PATIENTS IN WAITING LIST FOR LIVER TRANSPLANTATION. Carla A. Taroncher[1], Ana Luiza M. Gleisner[1], Maria Lucia Zanotelli[1], Guido P. C. Cantisani[1], Ajácio B. M. Brandão[1], Marcelo P. A. Fleck[2], Claudio Augusto Marroni[1]. *[1]Grupo de Transplante Hepático Adulto, Complexo Hospitalar Santa Casa, Porto Alegre, Rio Grande do Sul, Brazil; [2]Departamento de Psiquiatria e Medicina Legal do Rio Grande do Sul, Universidade Federal do Rio Grande do Sul, Porto Alegre, Rio Grande do Sul, Brazil.*

Background : Increasing interest is being given to health- related quality of life (HRQOL) in chronic diseases. Many chronic liver diseases generally run a rather steady course with phases of improvement and deterioration. The variables far most often included in the prognostic models for cirrhosis, such as the Child Turcott Pugh classification (CTP) as well as the model for end-stage liver disease (MELD), are indicators of late stage disease. The aim of this study is to determine if there is an association between the etiology and the clinical severity of the liver disease with the HRQOL.

Methods: HRQOL was determine in 112 cirrhotic patients in waiting with the use of WHOQOL-bref and the SF-36 questionnaires. Clinical and demographic data were collected during the interview and complemented by review of medical records, when MELD and CTP scores were calculated.

Results: Patients had a mean MELD score of 13.8 points and 86% were either Child A or B while the remainder 14% were Child C. The mean scores (± SD) were 56.7± 26.0 in the physical, 49.7 ± 22.5 in the general health, 68.6 ± 23.1 in the mental and 67.6 ± 29.3 in the social components of the SF-36 domains. There was no correlation between the MELD score and either HRQOL questionnaire (p=0.5). In contrast, CTP scores were significantly associated with the physical and social functioning domains of SF-36 ($p<0.05$) and with the physical health domain of WHOQOL-bref ($p<0.05$).

Conclusions: Even though most patients in this study would be considered to have a mild liver disease, their self-reported HRQOL was substantially lower than the expected for the general population. As previously shown, the CTP score was more closely associated with the HRQOL than the MELD score. In the absence of an immediate risk of death, other instruments such as HRQOL questionnaires and CTP scores may complement the MELD score in providing a global evaluation of the cirrhotic patients in the waiting list for transplant.

Abstract# 462 Poster Board #-Session: P55-III

OUTCOME COMPARISON OF LIVER TRANSPLANT PATIENTS WITH MODERATE/SEVERE PORTOPULMONARY HYPERTENSION VS. AVERAGE PATIENT POPULATION. Lindsay S. Rogers[1], Kate B. Newman[1], Linda Jennings[2], Mohammad L. Ashfaq[2], Gary L. Davis[2], Goran B. Klintmalm[2], Michael A. E. Ramsay[1]. *[1]Anesthesia and Pain Management, Baylor University Medical Center, Dallas, TX, USA; [2]Baylor Regional Transplant Institute, Baylor University Medical Center, Dallas, TX, USA.*

Moderate and severe portopulmonary hypertension (PPH) can no longer be considered an absolute contraindication to orthotopic liver transplantation (OLT). At Baylor University Medical Center, 86 out of 3,433 patients who underwent evaluation for OLT between 1997 and 2005 had a clinical suspicion of PPH; 30 patients (10 mild, 8 moderate, 12 severe) were confirmed to have PPH by right heart catheterization. Sixteen of the 20 with moderate-to-severe PPH (mPAP ≥35) were otherwise considered suitable liver transplant candidates and were treated with vasodilation therapy. Eleven of these patients underwent OLT.

Selected outcomes for these 11 patients were compared to an average value taken from all cadaveric liver transplants from January 1998 - present. The outcomes of patients diagnosed with PPH pre-transplant were not significantly different when compared to the average liver transplant patient (ALTP) group.

The mPAP immediately following liver transplantation was significantly different between the two groups ($p\leq.0001$). The PPH group had a median mPAP of 36 while the ALTP group had a median mPAP of 21. Hemodynamic support in the form of intraoperative vasopressors was necessary in 36% of the PPH patients.

The initial and total number of days in the ICU were not significantly different between the two groups; the median total ICU stay for the ALTP group was two days while the median for the PPH group was three days; and the PPH group (13 days) had a lower number of transplant-related hospital days when compared to the ALTP group (14 days).

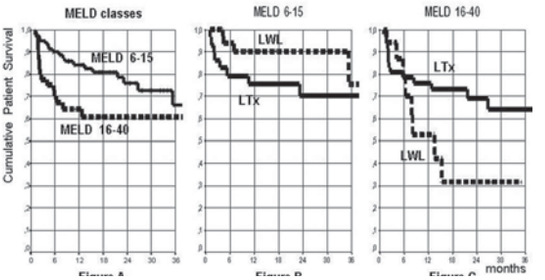
Eight of the 11 liver transplant patients with PPH are alive and doing well. There was no statistical significance when comparing patient survival rates between the PPH and ALTP groups; survival rates were determined by Kaplan Meier analysis and compared using the log-rank test. The survival rate at Year 5 was 72% for both the PPH and ALTP groups. Our research indicates that liver transplant patients with moderate or severe PPH who respond to therapy by reducing their PPH or by improving right ventricular performance may undergo OLT safely.

Abstract# 463 Poster Board #-Session: P56-III

DIFFERENT SURVIVAL BENEFIT BETWEEN LIVER TRANSPLANTATION AND WAITING LIST IN RELATION TO DIFFERENT MELD CLASSES. AN INTENTION TO TREAT ANALYSIS. Alfonso W. Avolio[1], Massimo Siciliano[2], Salvatore Agnes[1], Antonio Gasbarrini[2], Gianluigi Caracciolo[2], Raffaella Barbarino[1], Marco Castagneto[1]. *[1]Dpt of Surgery-Transplantation Service, Catholic University, Rome, Italy; [2]Dpt of Internal Medicine, Catholic University, Rome, Italy.*

MELD is today the reference method to score and classify end-stage liver disease in relation to the need of transplantation in the majority of transplant programs. Even if several studies emphasized the prognostic significance of MELD in patients listed for liver transplantation (LTx), few of them used the intention to treat (ITT) analysis.

Patients and Methods. We reviewed patients who entered liver transplant waiting list (LWL) in relation to the ITT analysis during the last 3 years. Patients with hepatocellular carcinoma were included. 126 consecutive adult patients were classified in two classes in according to their MELD score as follows: LOW MELD class (MELD 6-15, N=81) and HIGH MELD class (MELD 16-40, N=45).
Results. Patients with LOW MELD presented ITT survival better than patient with HIGH MELD (84 vs 64%; 76% vs 61%; and 66% vs 61% at 12, 24, and 36 months respectively, p<0.05, fig. A). In both classes, outcomes were also analyzed in relation to LTx. In the LOW MELD class, the patients who remained on the LWL presented better outcome than the LTx patients (91% vs 76%; 91% vs 71%; and 75% vs 71% at 12, 24, and 36 months respectively, fig. B). In HIGH MELD class, the patients on the LWL presented better outcome than the LTx patients only during the first five post-operative months, but an opposite behavior was observed at the sixth month (77% vs 53%; 69% vs 32%; and 64% vs 32% at 12, 24, and 36 months respectively, fig. C).



In our experience, the ITT patient survival was dependend on the MELD score. Although patients with low MELD seemed to go better after LTx, the transplant benefit was evident only in HIGH MELD patients. We suggest to transplant patients only if the MELD is equal to or higher than 16.
Patients with lower MELD score should be evaluated for LTx but they should be transplanted only when the MELD score reaches 16.

Abstract# 464 Poster Board #-Session: P57-III

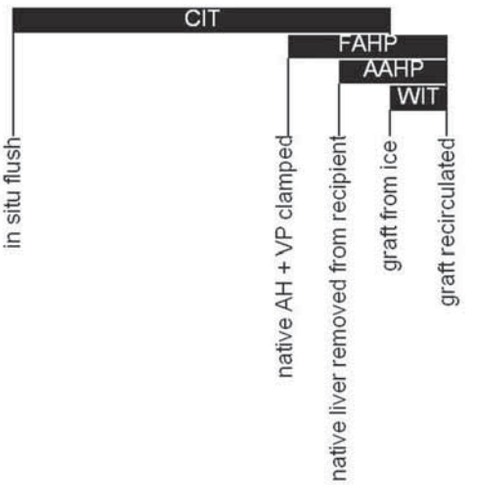
NON-ANASTOMOTIC BILIARY STRICTURES AFTER LIVER TRANSPLANTATION: NOVEL INSIGHTS IN PRESENTATION AND PATHOGENESIS. Carlijn I. Buis[1], Robert C. Verdonk[2], Eric J. vd Jagt[3], Christian S. vd Hilst[1], Maarten J. H. Slooff[1], Elizabeth B. Haagsma[2], Robert J. Porte[1]. *[1]HPB and Liver Transplantation, University Medical Center Groningen, Groningen, Netherlands; [2]Hepatology; [3]Radiology.*

Background: Non-anastomotic biliary strictures (NAS) are a serious complication after orthotopic liver transplantation (OLT). The exact pathogenesis is unclear. However, previous studies have strongly suggested two major groups of risk factors: a) preservation injury (ischemia / reperfusion) -related factors and b) variables related to immunological processes. The time of presentation, severity and anatomical localization of NAS after OLT varies widely among different patients.
Aim: To identify risk factors for, and performed a comprehensive analysis of the anatomical localization and the severity of NAS at the time of initial presentation in a large group of liver transplant recipients with long-term follow-up.
Methods: A total of 487 adult liver transplants performed between 1986 and 2003 were studied. All imaging studies of the biliary tree were reviewed. Localization of NAS at first presentation was categorized into 4 anatomical zones of the biliary tree. Severity of NAS was semi-quantified as mild, moderate or severe. A large number of donor, recipient and surgical variables were analyzed to identify risk factors for NAS.
Results: NAS developed in 81 (16.6%) of the livers. Thirty-seven (7.3%) were graded as moderate to severe. In 85% of the cases, anatomical localization of NAS was around or below the bifurcation of the common bile duct. A large variation was observed in the time interval between OLT and first presentation of NAS (median 4.1 months; range 0.3-155 months). NAS presenting early (≤ 1 year) after OLT was strongly associated with preservation-related risk factors and most frequently located in the central bile ducts. NAS presenting late (> 1 year) after OLT was found more frequently in the periphery of the liver and associated with immunological risk factors.
Discussion: By separating cases of NAS based on the time of presentation after transplantation, we identified significant differences in risk factors, indicating different pathogenic mechanisms depending on the time of initial presentation. Early NAS is strongly correlated with ischemia related risk factors, whereas Late NAS is more associated with immunologically related risk factors. These finding have important implications for the development of new strategies to prevent or treat NAS.

Abstract# 465 Poster Board #-Session: P58-III

INFLUENCE OF THE LENGTH OF THE ANHEPATIC PHASE ON OUTCOME AFTER PRIMARY LIVER TRANSPLANTATION. A. J. C. IJtsma[1], C. S. van der Hilst[2], E. M. TenVergert[2], M. T. de Boer[1], K. P. de Jong[1], P. M. J. G. Peeters[1], R. J. Porte[1], M. J. H. Slooff[1]. *[1]Surgery, University Medical Center Groningen, Groningen, Netherlands; [2]Office for Medical Technology Assessment, University Medical Center Groningen, Groningen, Netherlands.*

During the anhepatic phase, toxic products and cytokines accumulate in the splanchnic circulation. These might have negative effects on the graft after recirculation. The aim of this study was to assess the influence of the functional and anatomic anhepatic phase duration (FAHP and AAHP) on outcome after liver transplantation.



Adult primary liver transplant recipients, transplanted with the piggyback technique using post-mortem heart-beating donors between 1994 and 2004 were analysed. Follow-up was completed until December 2005. Six patients were excluded due to missing data or peroperative death. The study group consisted of 177 patients.
Study parameters were analysed using chi square test and Kaplan-Meier analysis with log rank-test. ROC curves were constructed to determine optimal cut-off values for FAHP and AAHP. Graft dysfunction was defined as initial poor function (IPF; ASAT > 2000 U/l and PT > 16 seconds on days 2-7).
Median FAHP was 98 minutes (45 – 321). Median AAHP was 76 minutes (37 – 321). IPF occurred in 21 patients (12%).
In patients with an FAHP below 120 minutes the incidence of IPF was 10 out of 115 (8.7%) while in patients with an FAHP over 120 minutes this was 11 out of 55 (20%) (p<0.04). In patients with an AAHP below 100 minutes the incidence of IPF was 11 out of 131 (8.4%) while in patients with an AAHP over 100 minutes this was 10 out of 38 (26%) (p<0.004).
One year patient survival in patients without IPF was 91% versus 67% in patients with IPF (p<0.001). One year graft survival in patients without IPF was 86% versus 67% in patients with IPF (p<0.011).
A direct relation between FAHP or AAHP and patient or graft survival could not be established.
In conclusion, this study shows that patients with a prolonged functional (> 120 minutes) or anatomical (> 100 minutes) anhepatic phase have a significantly higher incidence of IPF. Patients with IPF had a significantly worse patient and graft survival.

Abstract# 466 Poster Board #-Session: P59-III

PREVALENCE AND TREATMENT OF DECREASED BONE MINERAL DENSITY IN EARLY PERIOD AFTER LIVER TRANSPLANTATION: IS IT WORTH TO ADD BISPHOSPHONATES TO CALCIUM AND ACTIVE VITAMIN D SUPPLEMENTATION?

Ewa Nowacka-Cieciura[1], Anna Sadowska[1], Tomasz Cieciura[1], Olga Tronina[1], Teresa Baczkowska[1], Arkadiusz Urbanpwicz[1], Marek Pacholczyk[2], Beata Lagiewska[2], Andrzej Chmura[2], Witold Chudzinski[3], Magdalena Durlik[1]. *[1]Transplantation Medicine and Nephrology, Medical University of Warsaw, Warsaw, Poland; [2]General and Transplantation Surgery, Medical University of Warsaw, Warsaw, Poland; [3]General, Vascular and Transplantation Surgery, Medical University of Warsaw, Warsaw, Poland.*

Reduced bone mineral density (BMD) is a common problem before and after organ transplantation (Tx). The highest bone loss occurs during the first 3-6 months post-operatively, concomitantly with increased bone turnover. The optimal therapy for patients (pts) with osteoporosis or osteopenia is not known.

Methods: Baseline (mean 3 months after Tx) BMD determinations were obtained in 28 adult liver transplant recipients. In all but 4 pts with T score <-1,0 alendronate or risedronate was started. All patients received calcium (Ca) and active vitamin D (vitD). The aim of the study was to evaluate the BMD changes and bone resorption marker - serum pyridinoline crosslinks (PYD), in pts under bisphosphonates (bisph) treatment (group A, n=14) versus control (group B, n=14). The follow-up period lasted 18 months. Results: At baseline osteoporosis was found in 8 pts (29%), osteopenia in 11 pts (39%). There was no difference between the groups according to menopause, diabetes, and the history of cholestatic liver disease. In group A there was 5,2% increase in lumbar BMD; BMD changed from 0,93±0,09 to 0,98±0,09 g/cm^2, however it did not reach statistical significance. We did not observe deterioration in group B: the average lumbar BMD at baseline and in the end of the study were: 1,14±0,21 and 1,15±0,22 g/cm^2, respectively. No significant changes were observed in BMD at femur in both groups. Significant decrease in serum PYD was observed not only in group A (from 3,89±0,59 to 2,39±0,45 nM/L, p<0,05), but also in group B (from 5,30±3,46 to 2,98±0,34 nM/L, p<0,03). Conclusion: Reduced BMD was observed in 68% liver transplant recipients early after Tx. The combination of bisph, Ca and vitD seems to be more effective than Ca and vitD in prevention of bone loss after liver Tx. The rate of bone turnover decreases under both types of therapy.

Abstract# 467 Poster Board #-Session: P60-III

NON-ANASTOMOTIC BILIARY STRICTURES AFTER LIVER TRANSPLANTATION: MANAGEMENT, OUTCOME, AND RISK FACTORS FOR DISEASE PROGRESSION.

Robert C. Verdonk[1], Carlijn I. Buis[2], Eric J. van der Jagt[3], Annette S. H. Gouw[4], Abraham J. Limburg[1], Maarten J. H. Slooff[2], Jan H. Kleibeuker[1], Robert J. Porte[2], Elizabeth B. Haagsma[1]. *[1]Department of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, Netherlands; [2]Department of Surgery, University Medical Center Groningen, Groningen; [3]Department of Radiology, University Medical Center Groningen, Groningen; [4]Department of Pathology, University Medical Center Groningen, Groningen, ,.*

Background: Non-anastomotic biliary strictures (NAS) after orthotopic liver transplantation (OLT) are associated with high retransplant rates. To date, it is not known which patients with NAS will progress to severe liver disease and which patients will have an asymptomatic course.

Aim: To describe the treatment, and identify risk factors for radiological progression of bile duct abnormalities, recurrent cholangitis, biliary cirrhosis and retransplantation in patients with NAS.

Methods: We retrospectively studied 81 cases of NAS. Radiological features of strictures were classified according to severity and location. Management of strictures was recorded. Possible prognostic factors for bacterial cholangitis, radiological progression of strictures, development of severe fibrosis/cirrhosis and graft and patient survival were evaluated.

Results: Median follow up after OLT was 7.9 years. NAS were most prevalent in the extrahepatic bile duct. Twenty-eight patients (35%) underwent some kind of interventional treatment, leading to a significant improvement in biochemistry. Progression of disease was noted in 68% of cases with radiological follow-up. Radiological progression was more prevalent in patients with early NAS and one or more episodes of bacterial cholangitis. Recurrent bacterial cholangitis (> 3 episodes) was more prevalent in patients with a hepaticojejunostomy. Severe fibrosis or cirrhosis developed in 23 cases, especially in cases with biliary abnormalities in the periphery of the liver. Graft but not patient survival was influenced by the presence of NAS. Thirteen patients (16%) were re-transplanted for NAS.

Conclusion: Especially patients with a hepatico-jejunostomy, those with an early diagnosis of NAS, and those with NAS presenting at the level of the peripheral branches of the biliary tree, are at risk for progressive disease with severe outcome. With these findings it is possible to predict the outcome of newly diagnosed non-anastomotic strictures after liver transplantation.

Abstract# 468 Poster Board #-Session: P61-III

OUTCOMES OF LIVER TRANSPLANTATION (OLT) IN THE MORBIDLY OBESE.

C. Quintini[1], F. Aucejo[1], K. Hashimoto[1], K. Hirose[1], T. Diago Uso[1], S. Nakagawa[1], N. Sopko[1], J. Rosenblum[1], B. Eghtesad[1], D. Kelly[1], C. Winans[1], D. Vogt[1], J. Fung[1], C. Miller[1]. *[1]Department of Surgery, Liver Transplant Program, Cleveland Clinic Foundation, Cleveland, OH, USA.*

INTRODUCTION. Morbid obesity (MO) is a problem seen with increasing frequency among candidates for OLT. MO is considered a relative contraindication for OLT in some centers without clear evidence to support such a practice. Our aim is to describe outcomes for OLT in patients with a BMI> 40kg/m^2 in a single center.

MATERIALS AND METHODS. Between 1/2004 and 6/2006, 285 OLTs were performed in 267 patients. 15/267 patients with a BMI>40 were compared to all other OLT patients with a BMI< 40. We analyzed patient and graft survival, operative time, blood transfusion requirements, and post operative events (ICU and overall length of stay LOS, surgical complications, infections). We also analyzed the post transplant weight records of our study group at 1-3 and 6 months.

RESULTS. Results are summarized in tab 1. Median follow up was 17 months (range 3-32 mos). Log rank test showed comparable actuarial patient and graft survival in the two groups (p=0.7). There was no statistical difference between the groups in terms of surgery time, blood products transfused, ICU and hospital Lenghts of stay, surgical complications and episodes of infections. 2/15 patients were retransplanted in the study group vs 14/252 in the BMI < 40 group (p=ns). In the BMI > 40 group, 11/15 patients (73%) reported a dramatic weight loss at 3 mos after the transplant with a statistically significant decrease in overall mean BMI, 43.7±3.6 vs 34.2 ±4.3 (p=0.003). After 3 mos the weight curve plateaued.

CONCLUSIONS. Outcomes of OLT in the morbidly obese are no worse than those of other patients undergoing OLT. BMI is often artificially elevated in end-stage cirrhotics due to severe fluid retention. These patients exhibit rapid weight loss following transplantation that is likely due to extracellular fluid loss from the improved homeostatic milieu provided by the new liver and possible improvement in renal function.

Table 1

	BMI<40	BMI>40	P value
OVERALL SURVIVAL	235/267 (88.0%)	13/15 (86.7%)	ns
GRAFT SURVIVAL	236/281 (84.0%)	13/17 (76.5%%)	ns
MELD SCORE	21.94±6.29	20.4±4.83	ns
SURGERY TIME (minutes)	506±70 min	556±76 min	ns
PRBCs (Units)	7.7±7.5	8.0±7.15	ns
ICU LOS (Days)	5.4±8.8	5.8±5.7	ns
HOSPITAL LOS (Days)	16.5±14	21±14.6	ns
WOUND INFECTIONS (pts/%)	29/272 (10.6%)	2/15 (13.3%)	ns

Abstract# 469 Poster Board #-Session: P62-III

HEMODYNAMIC CHANGES DURING ORTHOTOPIC LIVER TRANSPLANTATION MEASURED BY LIDCO MONITOR.

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The aim of this study was to analyze hemodynamic recordings collected during OLT and determine whether there is any pattern that allows the prediction of postoperative events. CO, CI, SV, SVI, SVR, SVRI, MAP and HR data were collected using a lithium dilution cardiac output (LiDCO™plus) monitor for 100 consecutive adult OLT patients. The number of observations recorded typically ranged from 10,000 to 40,000, depending on the duration of surgery. An initial graph was plotted by considering the average values at each heartbeat. A locally weighted regression, or LOESS smoother, was used to give a more easily interpreted graph. Patients were then grouped with respect to quality of graft (marginal vs normal) and survival at 30 days (survivors

vs no survivors). Differences between hemodynamic variables at the start and end of surgery were compared using a paired t-test and a Wilcoxon test. Differences between groups were compared using a permutation test with 500 simulations in which subjects were randomized to the groups, with the simulated test statistics then being compared to those of the data. Data collected at the start of surgery were significantly different from those at the end of surgery for all variables except MAP. There were no significant differences between groups.

Mean (median) differences between hemodynamic values at the start and end of surgery in 100 patients undergoing OLT.

CI	CO	HR	MAP	SV	SVI	SVR	SVRI
–5.87**	–6.44**	–6.50**	0.14†	–4.55*	–4.54*	4.62*	6.02**
(–6.31**)	(–6.16**)	(–6.36**)	(0.08†)	(–4.38*)	(–5.09**)	(4.95**)	(5.91**)

* p<0.0001, ** p<0.00001, † p>0.1.between start and end of surgery

This analysis of intraoperative hemodynamic data reveals that the hyperdynamic state (characteristic of end-stage liver disease), typified by high CO and low SVR, resolved at the end of surgery. These are important findings because it has generally been accepted that these changes resolve 2 weeks post OLT. However, beat-to-beat monitoring did not reveal significant hemodynamic instability following transplantation of marginal grafts. Furthermore, intraoperative hemodynamic changes did not predict patients who did not survive OLT.

Abstract# 470 Poster Board #-Session: P63-III

ASSOCIATION OF CENTER VOLUME WITH OUTCOME AFTER LIVER TRANSPLANTATION IN SÃO PAULO STATE. Francisco Monteiro[1], Luiz A. Pereira[1], Rogerio C. Afonso[2], Ben-Hur Ferraz-Neto[2]. *[1]Transplant Center, Secretariat of Health, Sao Paulo, Brazil; [2]Liver Transplantation Unit, Albert Einstein Jewish Hospital, Sao Paulo, Brazil.*

Background and Methods: For several medical interventions, increasing experience results in improved outcome and centers performing a high number of procedures demonstrate better outcome when compared to low volume centers. The aim of this study was to analyze the impact of volume on liver transplantation (LTx) outcome. We analyzed data collected prospectively from Transplant Center of Secretariat of Health, São Paulo State, Brazil, of 1357 liver transplants performed in 1263 patients from January 2002 to July 2006. Transplant centers were divided in three groups according to the volume of transplants performed per year: Group 1 – up to 20 LTx; Group 2 – 20 to 40 LTx and Group 3 – over 40 LTx. The outcome compared was based on patient and graft survival at 1, 3 and 5 years after liver transplantation among 3 groups.

Results: From all transplants analyzed, 54% (n=733), 23,9% (n=324) and 22,1% (n=300) were performed at high, medium and low volume centers, respectively. Patient survival rate at 1, 3 and 5 years were respectively, 64,2%, 57,3%, 55,9% at low volume centers, 65,6%, 60,4%, 58,9% at medium volume centers and 73,9%, 69,2%, 67,6% at high volume centers (p<0,0008). Graft survival rate at 1, 3 and 5 years were respectively, 61,5%, 54,9%, 52,6% at low volume centers, 62,4%, 54,8%, 53,5% at medium volume centers and 68,2%, 63,9%, 62,4% at high volume centers (p<0,0111).

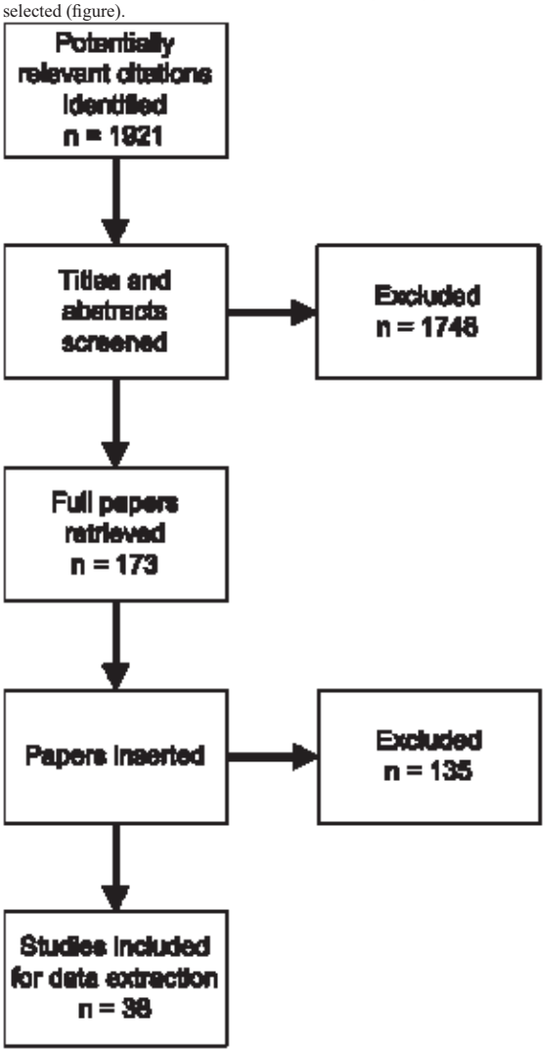
Conclusion: In São Paulo, increasing experience at centers performing liver transplantation is associated with better outcome.

Abstract# 471 Poster Board #-Session: P64-III

COST-EFFECTIVENESS IN LIVER TRANSPLANTATION – A SYSTEMATIC REVIEW. Christian S. van der Hilst[1], Alexander J. C. IJtsma[2], Danielle M. Nijkamp[2], Jan T. Bottema[2], Maarten J. H. Slooff[2], Elisabeth M. TenVergert[1]. *[1]Office for Medical Technology Assessment, University Medical Center Groningen, University of Groningen, Groningen, Netherlands; [2]Department of Surgery, Section of Hepatobiliary Surgery and Liver Transplantation, University Medical Center Groningen, University of Groningen, Groningen, Netherlands.*

Liver transplantation (LTx) is one of the most expensive procedures generating major health benefits. Different studies have been conducted on the cost-effectiveness with varying results. Aim of this study was to gain insight into the differences in study outcome.

A protocolized systematic review was performed. All relevant citations between 1990 and 2006 were retrieved from 8 databases by using the keywords: liver transplantation, cost, costs, cost-effectiveness, cost-utility. From a total of 1921 citations 38 studies with primary cost data were selected (figure).



Results showed that differences in cost-effectiveness were due to differences in hospital charges, insurance charges, and real costs. In addition to this, diversity in procedures and surgical techniques as well as variation in countries/ health systems and year of study attributed to these differences. However, the most important difference between these studies was due to the different phases of LTx taken into account for the determination of costs (table).

Liver transplantation phase	phase included	mean cost €	cost min €	cost max €
Living donor evaluation	3 (8%)	3,530	1,980	4,590
Living donor operation	4 (11%)	20,870	17,420	25,030
Recipient screening/ waiting	8 (21%)	12,290	4,710	18,310
Transplantation	34 (89%)	37,910	6,380	76,990
ICU & ward	29 (76%)	62,020	10,170	122,740
Follow-up (year 1)	16 (42%)	17,280	10,750	32,040
Follow-up (year 2-10)	5 (13%)	9,240	7,300	11,220

To conclude, differences between studies on cost-effectiveness of LTx are large and can be attributed to methodology, logistics, timing, location, and most importantly, the cost items included. Therefore, results on cost-effectiveness in LTx should be interpreted with caution.

Abstract# 472 Poster Board #-Session: P65-III

CORRELATION BETWEEN MEASURE GLOMERULAR FILTRATION RATE AND ESTIMATE GLOMERULAR FILTRATION RATE BEFORE AND AFTER ORTHOTOPIC LIVER TRANSPLANTATION. Alfeu M. Fleck, Jr.[1], Claudio A. Marroni[1], Ajacio B. M. Brandao[1], Guido P. C Cantisani[1], Maria Lucia L. Zanotelli[1], Osvaldo E. Anselmi[2], Clarice Luz[2]. *[1]Grupo de Transplante Hepatico Adulto ISCMPA, Irmandade da Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil; [2]Servico de Medicina Nuclear, Irmandade da Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil.*

Background: Chronic liver diseases may be followed by renal impairment, with incidence between 10 and 25%. Some diagnostic methods are used to renal function evaluation. Most used are serum creatinine and endogenous creatinine clearance. However, in patients with chronic liver disease and in liver transplanted patients these methods are not accurate. Frequently are used mathematics formulas to estimate glomerular filtration rate (GFR). Most used is Cockcroft/Gault formula. Nevertheless, this method may be imperfect. The gold-standard method for renal function evaluation is the GFR measure using radioisotopes.

Objective*:* Compare the GFR using ^{51}Cr-EDTA with estimate GFR through the Cockcroft/Gault formula, before and after Orthotopic Liver Transplantation (OLT).

Patients and Methods: Evaluated liver transplant adult patients, followed from pre-OLT to the first three months after OLT, with simultaneous evaluation of GFR using ^{51}Cr-EDTA and estimate GFR through the Cockcroft/Gault formula (calculated), before OLT, one month post-OLT and three months post-OLT.

Results*:* 30 patients were evaluated. The average age was 55 years old and 66,7% were male. Indication for OLT was HCV cirrhosis in 73,3%. Before OLT, the average GFR using ^{51}Cr-EDTA was 73,78 ± 34,76 mL/min (28,3 - 159,1), while the calculated GFR through the formula was 91,63 ± 30,58 mL/min (38,1 - 137,3), *p=0,02*. One month post-OLT, the mean GFR using ^{51}Cr-EDTA was 43,93 ± 13,74 mL/min (22,4 - 73,1) and the calculated GFR was 62,06 ± 22,18 mL/min (21,3 - 112), *p<0,001*. Three months post-OLT, the mean GFR using ^{51}Cr-EDTA was 42,93 ± 13,24 mL/min (12,9 - 73,7), while the calculated GFR was 62,6 ± 19,07 mL/min (23,1 - 98,7), *p<0,001*. Significant differences were observed between GFR measured through ^{51}Cr-EDTA and calculated GFR through the Cockcroft/Gault formula, before and after OLT.

Conclusions: The GFR measure through ^{51}Cr-EDTA doesn't correlate with the estimate GFR through the Cockcroft/Gault formula, before and after OLT. The estimate GFR through the Cockcroft/Gault formula is not a precise test to evaluate renal function, before and after OLT.

Abstract# 473 Poster Board #-Session: P66-III

AUDIT AND PREDICTIVE FACTORS FOR ALCOHOL CONSUMPTION POST LIVER TRANSPLANTATION – MUST TRY HARDER? Vibhakorn Shusang[1], Laura Marelli[1], Pinelope Manousou[1], Liz Shepherd[1], David Patch[1], Andrew K. Burroughs[1]. *[1]Surgery, Royal Free Hospital, London, United Kingdom.*

Background : Alcoholic liver disease(ALD) is the second most common indication for liver transplantation(LT) in UK. However, recidivism does occur leading to graft injury and loss, and negative publicity.

Uncertainty remains about the extent of a recidivism after LT for ALD, primarily due to poor assessment methodology.

Aims : Determine prevalence and pattern of alcohol consumption in alcoholic cirrhotis undergoing LT.

Methods : Cross sectional study with formal interview was conducted in survivors of LT transplanted between Jan 1989 – Oct 2005 by a clinical nurse specialist in alcohol and liver transplantation.

Results : 139 transplanted. 50 died. 14 not available for interview- abroad/lost to follow up leaving 75 as study group : 81% male, mean age 54 years.

Pre transplant: 37 % living alone, 58% unemployed, 38% spent most time in the community; while 20% were predominantly in patients. Average alcohol use was 192 units/week. Average duration of abstinence prior to LT was 18 months; 29% had undergone some form of alcohol aversion therapy;. 48% had history of alcohol dependence in first degree relatives; 20% had psychological disease.

Post transplant: mean follow up 59 months, average duration for abstinence 33 months ; 33 reported some alcohol use post LT ; average consumption 7.8 units/week. Pattern of drinking classified as none, occasional, regular and harmful was 53%, 19%, 15%, and 13% respectively: of these 23% underwent treatment. 5% refused treatment.72% no treatment. 8% had new diagnosis of psychological disease , 20% required hospital admission regarding alcohol use. Pretransplant variables of age, marital status, employment, period of abstinence, treatment for alcoholism pretransplant, family history of alcoholism, psychiatric history did not predict abstinence post LT (p>0.05). Univariately prediction of drinking post LT was whether patients were abstinent at home or hospital bound, and family history of alcohol abuse (p=0.005, 0.013 respectively).

Conclusions : Even in a carefully analysed group of patients, it is hard to identify factors that reliably predict abstinence post LT. Patients who are abstinent because they are "too sick to drink" are more at risk of relapse.The context of abstinence needs to be considered.

Abstract# 474 Poster Board #-Session: P67-III

THE RISK ASSOCIATED WITH PLATELET TRANSFUSION IN LIVER TRANSPLANTATION. Marieke T. de Boer[1], Christian S. van der Hilst[2], Ilona T. Pereboom[1], Ans A. Hagenaars[3], Herman G. D. Hendriks[3], Maarten J. Slooff[1], Robert J. Porte[1]. *[1]Department of Hepatobiliary Surgery and Liver Transplantation, University Medical Center Groningen, Groningen, Netherlands; [2]Office for Medical Technology Assessment, University Medical Center Groningen, Groningen; [3]Department of Anesthesiology, University Medical Center Groningen, Groningen, Netherlands.*

Background: Low platelet counts are frequently observed in patients undergoing orthotopic liver transplantation (OLT). Platelet transfusions may be indicated in patients with excessive bleeding. Recent studies in cardiac surgery, however, have suggested that intraoperative transfusion of platelets is associated with serious adverse outcomes. In addition, experimental studies have shown that platelets contribute to reperfusion injury of the liver. Aim of this study was to evaluate the impact of platelet transfusion on outcome after human OLT.

Methods: A series of 433 adult patients undergoing a first OLT between 1989 and 2004 were included in this study. Risk factors for graft and patient survival were analyzed, using univariate and multivariate analysis (stepwise Coxs proportional hazards model). Propensity scoring analysis was used to verify results of the logistic regression.

Results: The proportion of patients receiving transfusion of any blood component decreased from 100% in the period 1989-1996 to 74% in the period 1997-2004. The following variables were identified as independent predictors for one-year patient survival: indication for transplantation, transfusion of platelets, and transfusion of RBC. These risk factors were independent from well-accepted indices of disease, such as the MELD score and the Karnofsky score. After stratification based on propensity scores (C-index, 0.86), platelet transfusion remained a strong predictor of one-year patient survival (HR 2.2; 95% CI 1.1 – 4.3, p= 0.018).

Conclusion: This study indicates that platelet transfusions are an independent risk factor for survival after OLT. These findings have important implications for transfusion practice in liver transplant recipients.

Abstract# 475 Poster Board #-Session: P68-III

VARIABLES RELATED TO SURVIVAL AFTER LIVER RETRANSPLANTATIONS IN ADULTS. Umberto Maggi, Paolo Reggiani, Ernesto Melada, Paolo Bertoli, Giorgio Rossi. *[1]Centro Trapianti Fegato, Fondazione Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena, Milano, Italy.*

AIM

Liver retransplantation (RETX) is a major problem. Due to the scarsity of organs this procedure remains often an ethical problem. Many mathematical scores have been performed to identify risk factors for survival. In our study our aim is to identify variables related to post-RETX survival and which is the best ·window of time· to perform a liver retransplanation in adult recipients.

PATIENTS AND METHODS

Since January 1995 through December 2006 in our Unit we perform 364 cadaveric liver transplantations (LT) including 42 retx in adult patients. 3 second retx were also included.

RETXs were performed between postoperative day (POD) 1 through 7000 from previous LT.

Various variables were collected for analysis and related to post RETX survival: among them, indication to RETX, UNOS class, MELD score, Donor age. Moreover according to different post-operative days from previous LT in which RETX were performed, in three groups of RETX were identified: RETX performed within 15 days from previous LT; then (Group 2) between POD 15 and 200; and over 200 (Group 3). So 11 RETX occurred within 15 days from RETX, 14 from 15 through POD 200 and 17 over POD 200 (as long as POD 7000). Kaplan Meyer survival analyses were performed and the Log rank test was used to compare survival curves. Statistical significance was considered if P < .05.

RESULTS

52% RETX grafts are functioning, 48% were lost. 1-3-5-10 years grafts actuarial survival for all RETX grafts are 56, 50, 50, 50%.

Among variables included in the analysis, Donor age had a statistical significance (p=.007).

Considering time from previous LT, survivors in three segments of time (1,2 and 3) were respectively 3/11 (27%), 11/14 (78%) and 8/17 (47%). At POD 3000 graft actuarial survival for Groups 1, 2 and 3 was respectively 27, 77 and 44%.

So the Best survival was achieved in Group 2.

Log rank test on the three survival curves shows a statistical difference (P = .01).

CONCLUSION

Donor age has a statistical significance in survival after RETX. A retransplantation performed between POD 15 and 200 has best chances of success. Later retransplantation have mild results while worst results occur in very early retransplantation.

Abstract# 476 Poster Board #-Session: P69-III

PROFILE OF ORTHOTOPIC LIVER TRANSPLANT (OLT) PATIENTS WITH CRYPTOGENIC CIRRHOSIS. Claudio A. Marroni[1], Alex Schwengber[1], Christina G. S. Fraga[1], Camila Benfica[1], Ajacio B. M. Brandao[1], Alfeu Fleck, Jr.[1], Maria L. Zanotelli[2], Guido Cantisani[2]. *[1]Internal Medicine - Hepatology, FFFCMPA, Porto Alegre, Rio Grande do Sul, Brazil; [2]Grupo de Transplante Hepatico de Adultos, Complexo Hospitalar Santa Casa de Misericordia de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil.*

Background: Cirrhosis is defined as cryptogenic when it is impossible to define its etiology as viral, metabolic, immunolgical or due to hepatotoxic substances. Nonalcoholic steatohepatitis (NASH) can be responsible for some cases of unknown etiology, being dyslipidemia, obesity and diabetes mellitus (DM) the main risk factors.

Aims: Analyse the profile of OLT patients with cryptogenic cirrhosis between 1995 and 2006, correlating the features of these patients and their risk factors for NASH.

Patients and Methods: Records of 34 cryptogenic cirrhosis transplant patients were reviewed. Body Mass Index (BMI), total cholesterol levels, triglycerides levels, fasting glucose levels were analyzed in this group of patients.

Results: Cryptogenic cirrhosis is responsible for 5,63% of the recommendations for OLT at CHSCMPA. Average age was 51 years old. Males were 67,64%. The hepatocellular carcinoma was present in 17,6% of the native organs. The BMI was less than 25 in 35.29%, between 25 and 30 in 44,11% and more than 30 in 17,64%. The total cholesterol levels were below 200mg/dL in all patients. Glucose intolerance and DM was present in 25% of the patients. Comparing this data to the levels of glucose, cholesterol, triglycerides and the BMI in the first year following the OLT, we found a higher incidence of DM and glucose intolerance (45%). Hypercholesterolemia and hypercholesterolemia was found in 27% and 31,18%, respectively. BMI distribution did not modify after OLT. The survival rate was 88,2% in 1 and 5 years.

Conclusion: Most patients are overweight and present cholesterol levels within the normal range. Glucose intolerance and/or diabetes was prevalent and the patients developed worse glucose blood levels control after OLT, even without alteration in the BMI. The long-term survival rate in this group is excellent.

Abstract# 477 Poster Board #-Session: P70-III

PROSPECTIVE ANALYSIS OF QUALITY INDICATORS ON A PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION CENTER. Renata Pugliese[1], Vincenzo Pugliese[1], Gilda Porta[1], Irene K. Miura[1], Vera Baggio[1], Eduardo Carone[1], Joao Seda Neto[1], Alcides A. Salzedas[1], Eduardo Antunes[1], Teresa Guimaraes[1], Andre Godoy[1], Paulo Chapchap[1]. *[1]Surgery, Hospital do Cancer, Sao Paulo, Brazil.*

Liver transplant is the treatment of choice for patients with liver failure. The liver transplant program in the Hospital do Cancer, Sao Paulo, Brazil started in 2001. Since 2004, results and survival of the pediatric LDLT were prospectively monitored and quality indicators dictated by ISO 9000-2001 were analysed. From May/2004 to November/2006, five periods of 6 months were chosen for follow-up. Quality indicators based on the literature and respective goals were: 1 month (90%) and 1 year (80%) patient survival, donor survival (100%), re-transplants (5%), re-operations (10%), incidence of biliary complications (5% donors and 10% recipients), incidence of vascular complications (3%), intra-operative blood transfusion (20 ml/kg), time on the waiting list, and hospital stay. Table 1 shows the number of transplants, 1 month and 1 year patient survival, , retransplants and re-operations for each period. Early retransplantation rate was 5%. Recipients had 3% of biliary stenosis and 3% biliary leaks. Donors had 3% biliary leaks from the cut surface. Recipients had 5% HAT, 2% PVT, and 5% HAT+PVT. Recipients median intra-operative blood transfusion was 21 ml/kg (range 0-166 ml/kg). Donors median ICU stay was 1 day (range 1-3 days). Recipients' median ICU stay was 1 day(range 1-47 days). Donors median hospital stay was 5 days (range 2-52 days). Recipients median hospital stay was 11 days (range 2-51 days). Median time on the waiting list was 3 months (range 0.3 to 39 months). In summary, quality indicators are usefull to evaluate and monitor the results and survival in our transplant center in order to keep continuos suveillance and high quality assistence to our patients.

Table 1

	first period	second	third	fourth	fifth	all periods studied
1 month survival	92.9%	95.5%	95.5%	100%	88%	94%
1 year survival	92.9%	86.4%	86.4%	94.1%		89%
reoperations	14.3%	22.7%	13.6%	17.6%	12%	16%
retransplant	0	4.5%	13.6%	5.9%	12%	8%
number of transplants	14	22	22	17	25	100

Abstract# 478 Poster Board #-Session: P71-III

ASSOCIATION BETWEEN PORTOPULMONARY HYPERTENSION AND HEPATOPULMONARY SYNDROME IN CIRRHOTICS, CANDIDATES TO HEPATIC TRANSPLANTATION. Eduardo Garcia[1], Alessandra I. Zille[1], Jose S. Moreira[1], Ajacio B. M. Brandao[2], Claudio A. Marroni[2], Maria L. Zanotelli[1], Guido Cantisani[1]. *[1]Department of Pneumology, Complexo Hospitalar Santa Casa de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil; [2]Hepatic Transplantation Group, Complexo Hospitalar Santa Casa de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil; [3]Internal Medicine, FFFCMPA, Porto Alegre, Rio Grande do Sul, Brazil.*

Introduction The vascular disorders shown in patients with chronic liver disease are of different types, such as hepatopulmonary syndrome, in which there's a presence of intrapulmonary capillary vasodilation, and portopulmonary hypertension, with high pressures in the pulmonary arterial system. These two disorders may be present in the same patient, but only a few reported cases exist. The prevalence of pulmonary hypertension varies between 0,13 to 0,73% in a general population; the prevalence of pulmonary hypertension in cirrhotic patients can be superior to 2% of the cases.

Aim To determine the prevalence of hepatopulmonary syndrome and portopulmonary hypertension in the same patient, within a group of cirrhotic patients that will be submitted to hepatic transplant.

Methods In a group of 148 patients with a diagnosis of chronic liver disease that are candidates for hepatic transplant, patients presenting with primary pneumopathies and cardiopathies were excluded, resulting in 112 patients and they were subjected to chest radiography; gasometric analysis of arterial blood; calculation of the alveolo-arterial gradient; transthoracic doppler echocardiogram with measurement of tricuspid regurgitation jet and systolic pulmonary arterial pressure; determination of the presence of intrapulmonary shunt by infusion of saline solution into a brachial vein. Pulmonary hypertension was considered as being present in those cases in which tricuspid regurgitation was higher than 40 mmhg, while

hepatopulmonary syndrome was considered present in those cases in which the alveolo-arterial gradient was higher than 15 mmhg with positive shunt study confirmed by echocardiogram.
Results: The two vascular disorders were found in the same patient in 13 cases (11,6%) of the group under study. Association between portopulmonary hypertension and hepatopulmonary syndrome in cirrhotics, candidates to hepatic transplantation
Conclusion The association between the two disorders in the group studied is high (11,6%) when compared to data available in literature.

Abstract# 479 Poster Board #-Session: P72-III

LIVER TRANSPLANTATION IN ADULTS PATIENTS IN THE ARGENTINEAN PUBLIC HEALTH ORGANIZATION. TEN YEARS OF EXPERIENCE AT THE ARGERICH HOSPITAL. Pedro L. Trigo[1], Gabriel Aballay[1], Pablo Barros Scheloto[1], Gustavo A. Braslavsky[1], Nora G. Cejas[1], Fernando Duek[1], Graciela Cueto[1], Diana Rodriguez[1], Carlos Quarin[1], Cristina Romero[1], Gabriel Raffin[1], Alejandra Oks[1], Javier Lendoire[1], Oscar Imventarza. *[1]Liver Transplant Unit, Hospital Dr. Cosme Argerich, Ciudad Autonoma de Buenos Aires, Buenos Aires, Argentina.*
Introduction: In 1992 the Argentinean´s public health organization started a program for liver transplantation in adults patients without economical resource. **Aims:** Evaluate the etiological profile, sex, age, graft and patients survival and the retransplantation rate in the adults patients transplanted in the first 10 years in the liver transplan unit at Argerich Hospital.
Patients and Methods: From July 1995 to July 2005, 300 orthotopic liver transplantation were done in 278 patients. The etiology, sex, age, retransplantation rate, one and five years(y) graft and patients survival were analized.
Results: 118 patients (42,4%) were female, 7.6% were retransplanted. The graft and patient survival, and the detail of the principal etiology were described in the table. **Discussion:** In contrast to great series the fulminant hepatic failure is the first indication with almost 20% of the transplants. As in the rest of the world virus C has a great impact in our means being the second cause of transplant. The low 5 years survival of the patients with these two etiologies is in relation to the multi organic commitment of the first disease and to factors not absolutely clear that they affect anywhere in the world to the transplanted by hepatitis C. It is to emphasize the impact that has in our center the familial amiloidotic poly neuropathy, this is because our unit is a national center of derivation of this rare disease as for the patients with fulminant hepatic failure.

Results

	n	%	Mean Age	1 y G. S.	5 y G.S.	1 y P.S.	5 y P.S.
Total	278	100	40.0	74	64	75	65
FHF	55	19.8	34.8	69	62	69	63
HCV	51	18.3	48.2	73	57	75	57
PBC	44	15.8	45.4	89	80	86	81
AH	35	12.6	28.8	83	75	83	75
OH	21	7.6	47.3	76	71	76	71
Cry	16	5.8	32.0	75	67	75	67
FAP	14	5.0	38.6	84	76	86	78
PSC	12	4.3	34.8	83	74	83	74

G.S: graft survival, P.S: patient survival, FHF: fulminant hepatic faillure, HCV: hepatitis C virus, PBC: primary biliary cirrhosis, AI: autoimmune hepatitis, OH: alcoholic cirrhosis, Cry: Cryptogenic cirrhosis, FAP: familial amyloidotic polyneuropathy, PSC: primary sclerosing cholangitis

Abstract# 480 Poster Board #-Session: P73-III

BEYOND THE FIRST 100 LIVER TRANSPLANTS: EXPERIENCE AND OUTCOME. Mohammed Al-Sebayel[1], Hatem Khalaf[1], Mohammed Al-Sofayan[1], Mohammed Al-Sagheir[1], Ayman Abdo[1], Yasser El-Sheikh[1], Yasser Medhat[1], Hamad Al-Bahili[1], Ahmed Al-Jedai[1]. *[1]Liver Transplantation, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia.*
Purpose: Herein we present our experience with both deceased donor Liver Transplantation (DDLT) and living-donor Liver Transplantation (LDLT).
Patients and Method: Between April 2001 and November 2006, 117 LT procedures were performed (73 DDLTs and 44 LDLTs) in 113 patients (4 re-transplants). The LDLT group included 35 right lobe donations, 8 left lateral segments, and one whole left lobe.
Results:
In the DDLT group; male/female ratio was 35/38, adult/pediatric ratio was 70/3, and median age 43 years (range, 11-64). After a median follow-up period of 34 months (range, 0.5-67), the overall patient and graft survival rates was 84.9%. Deaths were due to primary non-function in 3 patients, central pontine myelinolysis in one patient, hepatic artery thrombosis (HAT) in one patient, chronic rejection in one patient, and recurrent HCV infection in 3 patients.
In the LDLT group; male/female ratio was 28/16, adult/pediatric ratio was 35/9, and median age 47 years (range, 2-63). After a median follow-up period of 22 months (range, 4-49), the overall patient and graft survival rates were 88.6% and 79.5% respectively. Graft failure and deaths were due to HAT in two patients, portal vein thrombosis in 2 patients, uncontrollable bleeding in one patient, small-for-size-syndrome in 3 patients, and biliary complication in one patient. Four patients were successfully re-transplanted using cadaveric organs.
Biliary complications were significantly higher in the LDLT group compared with the DDLT group, 22.6% vs. 4.1% respectively (p-value <0.05). Vascular complications were also significantly higher in the LDLT group compared with the DDLT group, 9 % vs. 4.1% respectively (p-value <0.05).
Live Donors morbidities included; sever liver dysfunction in 2 donors; bile leak in one donor; biloma in one donor, incisional hernia in two donors; skin dehiscence in one patient treated, pressure induced alopecia areata in 3 donors, neurapraxia of the right arm in one donor, and unsatisfactory scars in 5 donors,. No donor mortality encountered in our experience.
Conclusions: Both DDLT and LDLT are being successfully performed at King Faisal Specialist Hospital and Research Center with good outcomes. Our early experience indicates poorer graft survival as well as higher rate of biliary and vascular complications in the LDLT group.

Abstract# 481 Poster Board #-Session: P74-III

RESULTS IN 100 CONSECUTIVE LIVER TRANSPLANTS IN A MEXICAN PROGRAM. Marco A. Covarrubias-Velasco[1], Luis C. Rodriguez-Sancho[1], Eduardo Solano-Peralta[1], Hector E. Montes-Munoz[1], Salvador Castillo-Baron[2], Marisela Correa-Valdez[2]. *[1]Transplant Unit, Hospital Civil de Guadalajara, Guadalajara, Jalisco, Mexico; [2]Anaesthesia, Hospital Civil de Guadalajara, Guadalajara, Jalisco, Mexico.*
Purpose: The goal of this report is to present our experience with one hundred orthotopic liver transplants (OLT) in adults at the largest liver transplant program in Mexico**. Methods:** Our analysis included all consecutive liver transplants performed between March 2003 and November 2005, and we looked into demographic data of the recipients, patient and graft survival and postoperative complications among other variables. Since our center also performs liver transplants from living donors, we only included transplants from deceased donors for this report. **Discussion:** a total of 102 consecutive livers were transplanted in 98 recipients. There was no significant difference between gender (58% males and 41% females) with a mean age of 48±12 years with ranges of 18-68. Hepatits C virus infection and primary biliary cirrhosis were the most common indications for OLT with 42% and 13% of the cases respectively, followed by autoimmune hepatitis and non-alcoholic steato-hepatitis (10.7% and 9.8%), and being the rest of liver diseases from miscellaneous causes. Postoperative bleeding and biliary complications were seen in 9.8% and 22.4% of cases respectively. Hepatic artery thrombosis incidence was 3.9%. Our standard immunosuppression was with cyclosporine, mycophenolate mofetil and prednisone, and 23% of the patients were treated for acute rejection. Patient survival rate was 92.15% at one month and 87.2% at one year. Liver transplantation in our institution has good long term results according to the outcomes generally accepted among the international transplant community. Our survival and morbidity rates are comparable with those from other centers in developed countries.

Abstract# 482 Poster Board #-Session: P75-III

RESULTS OF A LIVER TRANSPLANT UNIT AFTER 4 YEARS OF ACTIVITY. LEARNING CURVE EFFECT. Jesus M. Villar[1], Karim M. Granero[1], Maria T. Villegas[1], Maria J. Alvarez[1], Ana Garcia[1], Flor Nogueras[2], Maria D. Espinosa[2], Alfonso Mansilla[1], Daniel Garrote[1], Jose A. Ferron[1]. *[1]Liver Transplant Unit. General and Digestive Surgery Department, Hospital Universitario Virgen de las Nieves, Granada, Spain; [2]Division of Hepatology, Service of Gastroenterology, Hospital Virgen de las Nieves, Granada, Spain.*
OBJECTIVES. Outcomes related to standards are of critical significance for a newly created liver transplant unit. We pretend to evaluate our results, valuing the effect of the learning curve in these outcomes.
MATERIAL AND METHODS. We have analysed several epidemiological and clinical variables of patients transplanted during the time of activity of the unit, divided in three portions: April 2002 to March 2004 (period 1), April 2004 to May 2005 (period 2) and June 2005 to November 2006 (period 3).

The data have been processed by SPSS 12.0 program, using for continuous variables the one-factor ANOVA test, and chi square test for discontinuous variables. The significance level was stated at 0.05.
In this time, 109 cadaveric-donor liver transplants have been performed in 107 patients (37 in period 1, 36 in period 2 and 36 in the third). The recipient mean age was 51.7 years; with a male / female ratio near 2/1. The transplant indication was cirrhosis in 74.3 % of cases (35.8 % alcoholic, 14.7 % due to HCV, 9.1 % mixed alcohol - viruses, 4.6 % HBV, 10.1 % other causes), HCC in 17.4 % and acute liver failure in 5.5 %. In two patients (1.8 %), the indication was retransplant for chronic rejection, and polycystic liver disease in one patient (0.9 %).
The mean waiting list time was 122.7 days, the average MELD score was 18.5. In relation to biliary reconstruction, in 95.3 % of cases, a duct-to-duct anastomosis was performed, with T-tube in the first 17 (16 %), and without tube in 84 (79.3 %). In five, a choledochojejunostomy was performed.
RESULTS. They are summarized in the next table.

	Period 1	Period 2	Period 3	Overall	p
Mean hospital stay in days	28.4	24.8	18.9	24.1	0.04
Reoperation rate (%)	19.4	10.8	2.7	11	0.07
Biliary complications rate	36.1	29.7	11.1	25.7	0.04
Vascular complications rate	27.7	8.1	8.3	14.7	0.02
Rejection rate	27.7	24.3	13.8	22	0.33
Three-months infectious complications rate	44.4	35.1	27.7	36.7	0.33
Three-months mortality rate	13.8	8.1	8.8	10.2	0.67
One-year mortality rate	16.6	16.6	9	15.6	0.76

CONCLUSIONS: Learning curve effect was evident related to vasculobiliary complications rate and hospital stay. A tendence to better outcomes is seen in the remaining items, without statistical significance.

Abstract# 483 Poster Board #-Session: P76-III

A MODEL TO DEMONSTRATE THE ECONOMIC BENEFITS OF GASTROENTEROLOGY FELLOWSHIP PROGRAMS. Tracy Giacoma[1], Reem Ghalib[1], Cheryl Levine[1], Alejandro Meija[1], Roozbeh Rassadi. *[1]Liver Institute, Methodist Medical Center, Dallas, TX, USA.*

Background:
As the recent prediction of the supply of U.S. physicians changed from that of a surplus to a shortage, health care systems have been evaluating the geographic need for physician specialists. For many years, Medicare has funded graduate medical education (GME) through two mechanisms: Direct Medical Education (DME) payments and Indirect Medical Education (IME) payments. Since October 1, 1997, each hospital's approved medical residency training full time equivalents (FTE's) were limited or capped and annual inflations on the Medicare GME payments have been insufficient or capped. The limitation in financial support by Medicare for GME has induced the hospital systems to reduce the number of trainees or to not expand graduate medical educational programs. It has therefore, become important to substantiate the economic benefits to an institution of initiating or expanding Gastroenterology Fellowship programs outside the Medicare funding of the past.
Aim: Our goal was the development of a model to demonstrate the economic benefits of a Gastroenterology Fellowship program that can be used to justify the support for the addition of this specialty education at an institution. This model was designed to identify the geographic and population based need for the services and the associated revenue.
Methods:
-Determined cost for supporting the GI Fellowship program.
-Determined available funding by other non profits or foundations.
-Compared and summarized economic data based on the collections for billing directly for GI fellow services, increased productivity and volume of procedures by current GI physicians, expenditures associated with adding more expensive providers for the same services, recruitment and retention expenses and other available funding sources versus the program expenses.
-Applied and validated model in an institution.
Conclusion: This model was able to predict the economic benefits of adding a new GI Fellowship program to an organization. This model can apply to other medical specialist educational programs that demonstrate a geographic and population need for the specialty service.

Abstract# 484 Poster Board #-Session: P77-III

LIVING DONOR LIVER TRANSPLANTATION FOR WILSON DISEASE: 50 CASES DURING 8 YEARS. Serguei V. Gautier[1], Olga M. Tsiroulnikova[1], Andrey V. Filin[1], Edward F. Kim[1], Alexey V. Semenkov[1], Olga I. Malomooge[1]. *[1]Transplantation Department, National Research Center of Surgery, Moscow, Russian Federation.*

End stage liver cirrhosis in patients with Wilson disease is common indication for liver replacement. The purpose of the study is to summarize the results of treatment of these patients with living donor liver transplantation (LDLT). Since December 1998 till December 2006 50 patients with verified Wilson disease underwent 51 LDLT with right hepatic lobe. Seventeen patients were adults (7 males and 10 females) with mean age 22.2 ± 1.7 (18 - 47) years. Thirty three patients were teenagers (15 males and 18 females) with mean age 14 ± 0.4 (9 - 17) years. All patients had Child C liver cirrhosis, 14 (28 %) of them demonstrated urgent indications for transplantation. Ten patients had different degree of Wilson neurological disturbances. Donors were AB0-identical or compatible relatives of patients. Six patients had graft weight to recipient body weight ratio (GWRWr) less than 0.8%. GWRWr in other cases was 0.8% - 2.4%. Early postoperative mortality was observed once on the 19th postoperative day due to spontaneous rupture of varicose veins in splenic hilus with intraabdominal bleeding. All the rest recipients (98%) survived and were discharged from hospital with good liver function including 6 recipients with small-for-size grafts. Three patients died during the first year due to stroke (1) and septic complications (2). One patient died after 18 mo. postoperatively because of melanoma. Immunosuppressive protocol in 10 patients with Wilson neurological disturbances included minimal doses of calcineurin inhibitors due to their neurotoxicity and steroids. Eight recipients demonstrated normalization of neurological status including 1 with severe neurological disturbances. In 2 other patients with severe neurological changes calcineurin inhibitors were withdrawn and conversion to mycophenolate mofetil was performed. In one of them the degree of neurological symptoms decreased. The other one survived 3 years and died because of neurological deterioration. So, 44 (88%) of recipients are alive with follow-up from 6 mo. to 8 years with good function of their first grafts except 1 who was successfully retransplanted with other living related graft after 3 years because of biliary complications. The results of LDLT for Wilson disease are generally good including patients with mild neurological disturbances.

Abstract# 485 Poster Board #-Session: P78-III

OUTCOMES OF LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA IN CIRRHOTIC PATIENTS DEPENDS ON ALPHA FOETOPROTEIN EVOLUTION DURING WAITING LIST. Eric Vibert, Salvatore Marco Iacopinelli, Vincent Karam, Chady Salloum, Daniel Azoulay, Denis Castaing, Didier Samuel, Rene Adam. *[1]Centre Hepato-Biliaire, Hopital Paul Brousse (APHP), Villejuif, France.*

ntroduction: The incidence of the cinetic of alpha foetoprotein during the waiting time for liver transplantation (LT) for hepatocellular carcinoma (HCC) is still unexplored. This study analyses the outcome of cirrhotic patients transplanted for HCC according to the evolution of AFP before LT.
Methods: An AFP increase was defined according to preliminary results as a progression of AFP level >15 ng/ml (2N), monthly. From 1987 to 2005, among 257 cirrhotic patients transplanted for HCC, 153 with an abnormal AFP level during the waiting time were analysed: 26 (16%) were transplanted during a period of AFP increase (I Group) and 127 (83%) were transplanted during a period of low increase or decline of AFP level (NI Group). The 2 groups were compared with regards to preoperative and histological data. A uni- and multivariate analysis of prognostic factors of overall survival (OS) and disease-free survival (DFS) was made.
Results: Excepted for pre-transplant AFP level, the 2 groups were similar for patients and tumor characteristics (age, sex, cause and severity of cirrhosis, waiting time, number and size of tumours, respect or not of Milan criteria and number of preoperative chemoembolizations(CE)). At univariate analysis, OS and DFS were both decreased by a number of tumours > 3, a number of CE > 2 and an AFP increase. In addition, OS was decreased by no viral liver disease and DFS was decreased by a maximal tumour diameter >3 cm. At multivariate analysis, 2 prognostic factors were retrieved for OS: no liver disease (RR=2.2; p=0.01) and AFP increase (RR=2.1;p=0.02), and 3 prognostic factors were retrieved for DFS : AFP increase (RR=3.1; p=0.0056), number of tumours > 3 (RR=2.45; p=0.03) and number of CE > 2 (RR=2.3;p=0.03). The 3-year and 5-year OS were 80% and 76%, in NI group versus 60% and 54% in I group (p= 0.02), respectively. The 3-year and 5-year DFS were 85% and 83% in NI

group versus 61% and 55% in I group (p=0.004). At histological analysis of the specimen, maximal diameter of tumours, and rates of vascular invasion and satellite nodules were significantly higher in I group.
Conclusion: The AFP evolution during waiting time of LT, is clinically more relevant than its static value and it seems to be a major predictive factor easily available for the outcome of LT for HCC.

Abstract# 486 Poster Board #-Session: P79-III

IS LIVER TRANSPLANTATION SUITABLE FOR OLD PATIENTS? Andres Valdivieso[1], Jorge Ortiz De Urbina[1], Mikel Gastaca[1], Miguel Montejo[1], Maria Jesus Hernandez[1], Javier Bustamante[1], Jose Ramon Fernandez[1], Milagros Testillano[1], Maria Jesus Suarez[1]. *[1]Liver Transplant Unit, Hospital Cruces, Bilbao, Vizcaya, Spain.*

Liver shortage and the increased number of old patients waiting for a liver transplantation (LT) make necessary to know the results of LT for these patients. We report our experience in this field with a follow-up of 5 years.
From February 96 to October 05 we performed 566 LT on 536 patients.88 patients were 65 years and older
Males were 60, and average age was 66±1.3 years(r 65-70).The main underlying diseases were hepatitis C virus cirrhosis (HCV)(50%) and alcoholic cirrhosis(32%). Hepatocellular carcinoma(HCC) was the most frequent reason of LT (39%), most of them associated toVHC cirhhosis (70.5%). Child-Pugh stage was:A-27%, B-36.5%, C-35%. Average time on the waiting list was 110±87 days (r 0-409), without any advantage or disadvantage over other patients.
Immunosuppression was mainly based on Tacrolimus (84%) and steroids. Acute cellular rejection was 16%, none of them steroid resistant. Median stay in ICU was 4 days and 17 days in the hospital.
Follow-up was 1919±950 days (r 456-3768).There were no retransplantations. Morbidity was mainly due to: renal impairment 60%, infection 39.5%, neurologic symtoms 40%, bone disease 32%, biliary complications 8%, and vascular complications 3.5%.De novo tumor appeared in 8% of cases.
Peroperative (<30 days) mortality was 3.4%, dying exclusively of cardiac disease. Overall mortality was 23.8%, mainly due to HCV recurrence (28.5%), cardiac disease (19%) and infection (14%).
The 1,3,5 and 7 year survival was 91%, 82%, 80.5% and 76%, respectively. Regarding HCV cirrhosis, the survival at 1,3,5 and 7 years was 86%, 73%, 73% and 66%, respectively, and survival for alcoholic cirrhosis at 1,3,5 and 7 years was 100%, 96.5%, 93% and 89%, respectively.
CONCLUSION: There is no reason to deny LT for 65 year and older patients because the results are good at short and long term. VHC also decrease significantly the survival (p<0.05%) in this group of patients.

Abstract# 487 Poster Board #-Session: P80-III

RESULTS OF URGENT LIVER RETRANSPLANTATION IN THE STATE OF SÃO PAULO, BRAZIL. Ben-Hur Ferraz-Neto[1], Rogerio C. Afonso[1], Francisco Monteiro[2], Maria P. V. C. Zurstrassen[1], Renato Hidalgo[1], Marcelo B. Rezende[1], Sergio P. Meira-Filho[1], Fernando Pandullo[1], Luiz E. P. Fonseca[1], Luiz A. Pereira[2]. *[1]Liver Transplantation Unit, Albert Einstein Jewish Hospital, Sao Paulo, Brazil; [2]Transplant Center, Secretariat of Health, Sao Paulo, Brazil.*

Background and Methods: Liver transplantation is a life-saving procedure for patients with end-stage liver disease and the incidence of retransplantation (RTx) is around 10%. The commonest causes of early RTx are allograft failure and vascular complications. Given the critical organ shortage, the chance for a RTx remains a controversial discussion in medical, ethical and economic grounds since patient and graft survival rates after RTx are lower than those for initial liver transplantation (LTx). As an historical cohort study from the Transplant Center of São Paulo State Database, we retrospectively reviewed all the urgent liver RTx from January 2002 to July 2006 by analyzing the incidence of RTx and survival.
Results: Among 1357 liver transplants performed in 1263 patients during this period, 1067 (78,65%) non emergency initial LTx, 138 (10,16%) emergency initial LTx, 143 (10,53%) were urgent RETx and 9 (0,66%) late RTx. All 143 urgent RTx were performed using an organ from the pool of deceased donors and 133 (93%) were second transplant and 10 (7%) third transplant. Survival rate at 1, 3 and 5 years were respectively 67,8%, 61,9% and 60,9% for initial transplant compared to 45,3%, 42% and 35,7% for second transplant and 45,5%, 22,7% and 22,7% for third transplant (p<0,0001).
Conclusion: Although RTx rate was acceptable according to the literature, higher mortality rate leads to a discussion of which patients had better chance of survival and best time to perform RTx in order to use a scarce resource in the best possible way.

Abstract# 488 Poster Board #-Session: P81-III

ROLE OF THE MELD SCORE IN PATIENTS WITH VIRAL HEPATITIS AWAITING LIVER TRANSPLANTATION. Oreste Cuomo, Alessandro Perrella, Giuseppe Arenga, Aristide Ferrara, Donatella Pisaniello, Lorenzo Iovine. *[1]Laparoscopic, Hepatic Surgery and Liver Transplant Unit, Cardarelli Hospital, Naples, Italy.*

Background/Aim: The Model for End stage Liver Disease (MELD) is actually used to evaluate patients to be included on waiting list for liver transplantation, showing to be superior to the Child-Turcotte-Pugh (CTP) score, with the additional advantage to add "adjustment points" for those patients (pts) having a highest risk of death as for HCC. Methods: We enrolled in this study 220 pts on waiting list from 1/1/2004 to 30/10/2006. Further we split in two groups, according to MELD score system introduction and evaluating CHILD and MELD: Group A 145 pts (Pre-MELD Era) from 1/1/2004 to 31/5/2005 and Group B 75 pts (MELD Era) from 1/6/2006 to 30/10/2006 assessing the Drop-out frequency. In both groups, the percentage of patients on waiting list having viral hepatitides was 78% and 74% respectively. Descriptive statistical analysis was performed using Median and standard error while to assess differences in Drop-out frequency and waiting time we compared the results using U Mann-Whitney Test; p <.05. Results: In group A we had 13 drop-out (9%) while in the second group we found 16 drop-out (21%). The drop-out frequencies were characterized as follows: Group A - 10 exitus (4 HCC – 6 disease complications) and 3 pts excluded for disease complication, while in Group B we had 16 exitus (1 HCC - 15 disease complications, with a statistical significant increase in those sub-category of patients [p <.05] compared to Pre-MELD evaluation score). Furthermore, at score systems evaluation, we had 5 patients with Child C and the remaining with CHILD A, B in group A, whereas we found a higher number of 11 CHILD pts C and 5 with CHILD A and B in group B (p <.05). Median waiting time in the groups were 6+/-3 and 11 +/-4 months respectively, without any statistical significant differences. Conclusions: According to literature, the use of MELD score in our group gives an advantage to HCC but in our study patients on waiting list with viral hepatitides had a higher trend to drop-out and higher waiting time. Other parameters should be introduced as adjustment points to make MELD score suitable also to evaluate those waiting lists with a considerable percentage of patients with infectious liver diseases.

Abstract# 489 Poster Board #-Session: P82-III

COMBINED CARDIOHEPATIC TRANSPLANTATION FOR HOMOZYGOUS FAMILIAL HYPERCHOLESTEROLEMIA. FIRST CASE IN ARGENTINA. Pedro L. Trigo[1], Gabriel Aballay[1], Nora A. Cejas[1], Gabriel Raffin[1], Gustavo G. Braslavsky[1], Fernando Duek[1], Graciela Cueto[1], Pablo Barros[1], Diana Rodriguez[1], Carlos Quarin[1], Veronica Garay[1], Alejandra Oks, Javier Lendoire, Oscar Imventarza. *[1]Liver Transplantation Unit, Hospital Dr Cosme Argerich, Ciudad Autonoma de Buenos Aires, Buenos Aires, Argentina.*

Introduction: homozygous familial hypercholesterolemia is a recessive autonomic disease with an incidence = 1: 1.000.000 the patients suffer of extreme values of cholesterol LDL and VLDL and die by coronary disease in early ages of the life. Because the cholesterol synthesis is hepatic and with the absence of genetic therapy, the treatment option in refractory cases of medical treatment is the hepatic transplantation.
Aim : To describe to the first case in the country of combined cardio hepatic transplantation, in a patient with terminal ischemic cardiopathy secondary to homozygous familial hypercholesterolemia.
Patient: male, 22 years of age, to the 4 years of age xantomas distributed in the extension surface to articulate of the 4 members. To the 12 years of age it presents chronic coronary disease. Familial antecedents, both parents and their two brothers present hypercholesterolemia. Cholesterol is stated 4,86 g/l, triglicéridos 1.83 g/l, HDL 0,56g/l, Apolipoproteína A1 273 mg/dl, Apolipoproteína B 660 mg/l, being made diagnosis of homozygous familial hypercholesterolemia . Ecocardiograma demonstrates estenosis and slight Aortic insufficiency. Hipolipemiant treatment with bad results was started. In June of 2004 angiography with severe ateromatosis of the trunk of the left coronary brunch, descendent proximal diffuse ateromatosis, severe obstruction of the lateral branch of circunflex and subtotal critical obstruction

of the right coronary. **Outcome:** On 07/03/2006 hepatic transplant was made followed by cardiac transplantation 8 hs after. The patient showed good clinical evolution and was discharge 21 days after surgery.
Conclussion: As a result of the infrequent of the disease, added to that these patients present high rate of sudden death, the cases of transplant combined by hypercholesterolemia familiar are rare. This type of intervention requires of logistic and a coordination between the transplant team. The cardio-hepatic sequential technique allows the receiver of both organs to maintain homodynamic and coagulation during the surgical act. The satisfactory evolution of the present case shows the capacity of the Argentinean public medicine.

Abstract# 490 Poster Board #-Session: P83-III

DEVELOPMENT OF SECONDARY SEXUAL CHARACTERISTICS DURING ADOLESCENCE AFTER PEDIATRIC LIVING DONOR LIVER TRANSPLANTATION.

Allan M. Concejero[1], Chao-Long Chen[1], Chih-Cheng Chen[1], Chih-Chi Wang[1], Shih-Ho Wang[1], Yueh-Wei Liu[1], Chin-Hsiang Yang[1], Chee-Chien Yong[1]. *[1]Liver Transplant Program, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.*

Background and objective: Outcome studies in liver transplant have generally focused on survival, immunosuppression, and tolerance. Few studies have aimed on psychosocial and sexual aptitude-assessments after transplantation in the adolescent age-group. Our objective is to describe and identify gender-specific secondary sexual characteristics among pediatric living donor liver transplant (LDLT) surviving recipients who have reached adolescence.
Patients and methods: From June 1994-September 2005, 125 pediatric LDLT were performed. Cyclosporine was the major immunosuppressant used. All childhood patients who had survived into the adolescence period were included. A subgroup of patients analyzed included patients who underwent transplant during adolescence. The assessment was made using observer and interview-schedule methods. Gender-specific characteristics analyzed included time of development of voice change, Adam's apple, axillary hair, pubic hair, penile size changes, and scrotum size changes in boys, and time of development of breast enlargement, axillary hair, pubic hair, and menarche in girls. The Tanner stages were used for both genders. The adolescence period was defined as 10-19 years old. The period of development of secondary sexual characteristics or pubertal changes was defined to occur within 9-14 years old for boys, and 8-13 years for girls. Development was considered premature or delayed if it occurs outside these ranges.
Results: A total of 38 (23 girls, 15 boys) adolescent recipients were included. There were 28 childhood transplants, and 10 adolescent transplants. Overall, the indications for transplant were biliary atresia (31), glycogen storage disease (5), Wilson's disease (1), and neonatal hepatitis (1). Seven (46%) boys had experienced pubertal changes beyond the age of 14 years. In addition, 2 boys aged 14 and 1 boy aged 15 have not yet experience pubertal changes. Pubertal experiences among the childhood transplanted girls were within the defined ages. Girls transplanted during the adolescence period did not experience cessation of menarche although their menstrual cycle became irregular. One girl transplanted during her adolescence had delayed pubertal experience.
Conclusion: Boys tend to experience delayed pubertal changes than girls after liver transplantation in this series.

Abstract# 491 Poster Board #-Session: P84-III

Abstract Withdrawn.

Abstract# 492 Poster Board #-Session: P85-III

ANALYSIS OF THE RISK FACTORS FOR EARLY POSTTRANSPLANT MORTALITY IN PEDIATRIC LIVER TRANSPLANTATION.

Izabel M. Coelho-Lemos[1,2], Julio C. Wiederkehr[1,2], Sabryna L. Werneck[1,2], Sandra L. Schuler[1], Luiz R. Farion[1,2], Daniela D. Ouno[1], Sylvio A. Avilla[1], Claudio Schulz[1], Vitor B. Nascimento[1,2]. *[1]Division of Liver Transplantation, Hospital Pequeno Principe, Curitiba, PR, Brazil; [2]Division of Liver Transplantation, Santa Casa de Misericórdia, Curitiba, PR, Brazil.*

PURPOSE: Liver transplantation is a well-established treatment for the hepatic failure. The most frequent indication in the pediatric group is developmental retardation due to the chronic liver disease. The aim of this study was to identify risk factors that could determine early mortality of children who had been undergone liver transplantation. **METHOD:** The charts from 91 patients less than 18 years of age submitted to liver transplantation from January 2003 through September 2006, in Hospital Pequeno Principe in Curitiba, Brazil, were reviewed. The risk factors considered for analysis were: total bilirrubin, albumin, INR, weight less than 10kg, developmental retardation, previous abdominal surgery, age less than one-year, and PELD score. For the statistical analysis Spearman's coefficient of correlation test was used to determine which risk factor contributes to early post transplant mortality. **RESULTS:** The results are presented in the following Table. The PELD score had a coefficient of correlation (*rs*) of 0.151 and a p value of 0.154. **CONCLUSION:** We conclude that only pre transplant bilirrubin levels were able to strongly correlate to early post transplant mortality in children submitted to liver transplantation.

Risk Factor for Early Mortality

	Bilirrubin	Albumin	INR	Weight <10kg	Development Retard	Previous surgery	Age <1y
coefficient of correlation	0.275	0.062	0.064	0.111	-0.080	0.150	0.071
p value	<0.01	0.562	0.549	0.293	0.449	0.156	0.501

Abstract# 493 Poster Board #-Session: P86-III

PEDIATRIC LIVER TRANSPLANTATION IN A COMBINED PEDIATRIC AND ADULT TRANSPLANT PROGRAM: THE RESULTS OF A SINGLE CENTER.

Rodrigo Amil[1], Marcelo Enne[1], Glauber Gouvea[1], Alexandre Cerqueira[1], Jose Martinho[1], Jefferson Alves[1], Elisabeth Balbi[1], Rodrigo Diaz[1], Lucio Auler[1], Giusepe Santalucia[1], Lucio Pacheco[1]. *[1]Liver Transplantation Unit, Bonsucesso General Hospital, Rio de Janeiro, Brazil.*

Background / Aim. Liver transplantation is a routine therapy for some childhood liver diseases. Large centers have reported patient survival to be 80 to 95% at 2 years. In our city there were no pediatric liver transplantation program until 2002, the prompt need has led an adult liver transplantation program to start a combined adult/pediatric liver transplantation program. The purpose of this report is to describe the outcome in 4 years of pioneer pediatric liver transplantation program in a combined adult/pediatric transplant program at a developing country.
Methods. From March 2002 to November 2006 a total of 204 liver transplantations were performed. The outcomes and complications of 57 children (less than 18 years) who received a liver transplant in this period were reviewed.
Results. In the 57 pediatric cases, 32 were from living donor (56,1%) and the remaining from deceased donors (43,9%). Median weight was 16 kg ranging from 5.4 to 55 kg, 15 (26,3%) patients were small children weighting less than 10 Kg. Median age was 70 months, ranging from 8 to 216 months. The reasons leading to liver transplantation were biliary atresia in 26 (45,6%), other cholestatic diseases in 7 (12,2%), fulminant hepatic failure in 11 (19,2%), autoimmune hepatitis in 3 (5,2%), hepatoblastoma in 3 (5,2%¨), congenital hepatic fibroses in 2 (3.5%) and metabolic diseases in 4 (7%). Vascular complications occurred in 6 cases (10,5%), 4 portal vein trombose (PVT) and 3 hepatic artery trombose (HAT) (one patient with both complications and one submitted to retransplantation). Biliary complications occurred in 6 (10,5%), and intestinal perforation in 7 (12,2%). Five patients required retransplantation: 3 patients with HAT and 2 patients with primary non function. The thirty day pos-operative survival was 82,5% (47 cases). At a median follow up of 25 months 41 patients (73,2 %) were alive.
Conclusion. As in other programs, most deaths at our center occurred in the early postoperative weeks. Surgical complications are comparable to the rates in other centers, but the results have to improve to reach the survival rates of the layest centers in the world.

Abstract# 494 Poster Board #-Session: P87-III

SUCCESSFUL AMPLATZER DEVICE DEPLOYMENT FOR CLOSURE OF AN ENLARGING ATRIAL SEPTAL DEFECT AFTER LIVING DONOR LIVER TRANSPLANTATION.

Amornetta Jordan[1], Allan M. Concejero[1], Chao-Long Chen[1], Chi-Di Liang[1], Chih-Chi Wang[1], Shih-Ho Wang[1], Yueh-Wei Liu[1], Chin-Hsiang Yang[1], Chee-Chien Yong[1], Bruno Jawan[1], Yu-Fan Cheng[1]. *[1]Liver Transplant Program, Chang Gung Memorial Hospital, Kaohsiung, Taiwan.*

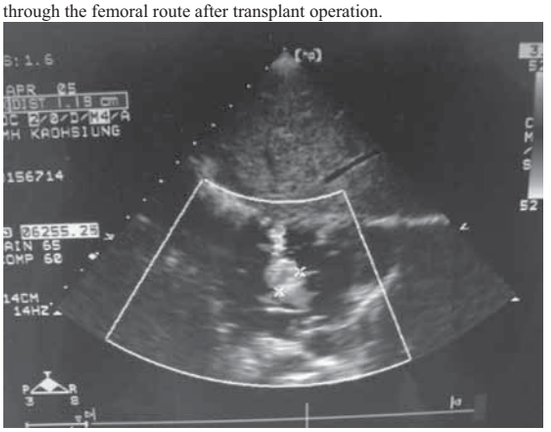
Background and objective: The incidence of biliary dysgenesis associated with congenital cardiovascular malformation ranges from 2%-3%. Biliary atresia, the most common indication for liver transplantation in children, is associated with congenital heart disease in about 12%. Atrial septal defect (ASD) is one of the most common congenital heart defects. Spontaneous

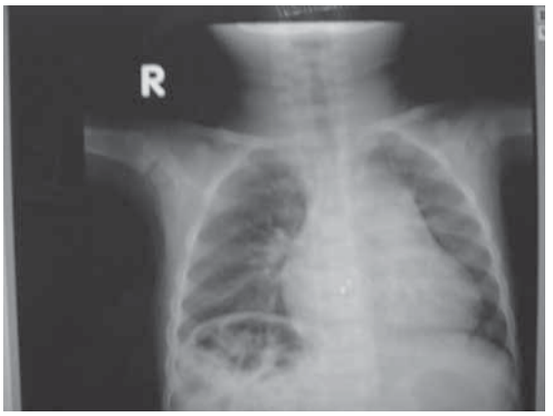
closure of an ASD is unusual, if not rare; although, reports of spontaneous closure have been published. We report a case of biliary atresia patient with ASD who underwent living donor liver transplantation. Posttransplantation, she underwent an Amplatzer device deployment for ASD closure.

Patient and methods: The diagnosis of Type II 11 mm ASD was confirmed by transthoracic contrast 2-dimensional color Doppler echocardiography pretransplant in a 1- year and 6-months old female patient. The patient's liver transplant course was uneventful. One-year posttransplant, the ASD increased in size to 14.5 mm. Amplatzer device closure was decided due to favorable anatomy of the ASD.

Results: The Amplatzer device was deployed through a trans-femoral approach passing through the inferior vena cava and retrohepatic cava. The femoral vein was accessed via the Seldinger technique. There was no perioperative complication during Amplatzer device deployment. The Amplatzer was successful in closing the ASD defect.

Conclusion: The presence of an ASD does not preclude successful liver transplantation. To our knowledge, this patient maybe the first live donor liver transplant recipient to have an ASD closed by an Amplatzer deployed through the femoral route after transplant operation.





Abstract# 495 Poster Board #-Session: P88-III

Abstract Withdrawn.

Abstract# 496 Poster Board #-Session: P89-III

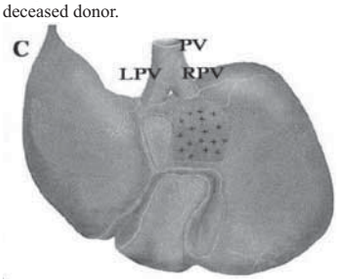
TEN YEARS OF LIVING DONOR LIVER TRANSPLANTATION IN ONE CENTER: SURGICAL CONSIDERATONS. Serguei V. Gautier[1], Andrey V. Filin[1], Edward F. Kim[1], Olga M. Tsiroulnikova[1], Alexey V. Semenkov[1], Eugeny A. Smirnov[1], Alexander A. Ammosov[1], Eugenia J. Krizhanovskaja[1], Juli R. Kamalov[1], Valery V. Hovrin[1]. *[1]Transplantation Department, National Research Center of Surgery, Moscow, Russian Federation.*

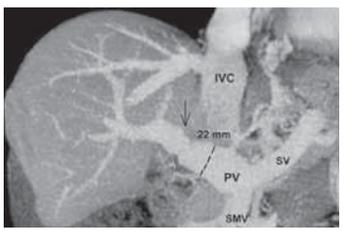
Since March 1997 166 living donor liver transplantations (LDLT) were performed in 164 patients. Left lateral sector was used in 39 patients with body mass 4-15 kg (including 1 retransplantation). All the rest patients (127) received right hepatic lobe (including 1 retransplantation and 1 simultaneous liver-kidney transplantation). Surgical technique of left lateral sector transplantation was standard. Since November 1997 we use our special technique of right hepatic lobe transplantation. In all cases donor's right hepatectomy was performed without middle hepatic vein. All hepatic veins from the right lobe to inferior caval vein more than 5 mm in diameter were preserved for reconstruction in recipient. The hepatico-caval anastomosis in 105 recipients were performed almost side-to-side between the wide opening in the right caval wall and widely dilated opening of single large right hepatic vein of the graft. In 17 cases of 2 equal right hepatic veins of the graft the inferior right hepatic vein was implanted with end-to-side technique after the upper anastomosis had been performed. In 5 cases 3 hepatico-caval anastomosis were performed. Branches of middle hepatic vein from 5th and 8th segments were never reconstructed in spite of their size. No signs of partial congestion of grafts were observed after reperfusion. No correlation between middle hepatic vein absence and graft survival was found. The right hepatic lobe in 8 donors was supplied by 2 arteries (from celiac artery and from mesenteric artery). Only once the celiac branch was significant and demanded arterial reconstruction on the back-table. In 12 cases of 2 separate right portal branches of the graft portal reconstruction was successfully performed on the back-table using recipient's portal bifurcation removed during hepatectomy. In all cases good function of grafts was obtained. Early survival of grafts and recipients was 93.8 percent. All donors survived and returned to former way of life and professional activity. Our experience demonstrates LDLT to be very effective life saving procedure for adult and pediatric patients. The variants of vascular reconstruction in recipient allow to use right hepatic lobe from living donor in all cases without technical contra-indications.

Abstract# 497 Poster Board #-Session: P90-III

OUTFLOW RECONSTRUCTION IN DOMINO LIVER TRANSPLANTATION WITH INTERPOSITION OF AUTOLOGOUS PORTAL VEIN GRAFT. A NEW TECHNICAL OPTION IN LIVING DONOR DOMINO LIVER TRANSPLANTATION SCENARIO. Alexandre Cerqueira, Marcelo Enne, Lucio Pacheco, Elizabeth Balbi, José Manoel Martinho, Rodrigo Amil. *[1]Liver Transplant Unit, Bonsucesso General Hospital, Rio de Janeiro, Brazil.*

A 37-year-old man, (FAP patient's husband) donated a right liver. The LDLT recipient, a 36-year-old woman with FAP agreed to be also a domino donor. The native hepatectomy in the FAP patient was performed with IVC preservation, and venovenous bypass was not required. The living-donor right graft was implanted in the FAP patient as usual. The FAP liver as a domino graft was harvested without vena cava (Fig. A); and was perfused on the back-table with Belzer solution. The middle and left hepatic veins were joined together (Fig. B). The autologous portal vein bifucartion (domino recipient) was used as vascular graft acording inverted Y-graft technique (Fig. C). A 49-year-old man with end-stage liver disease secondary to hepatitis C agreed to accept the FAP liver. Angio CT scan at second postoperative months showed good outflow (Fig D). In summary, this technique described above is especially useful when the donor for the FAP is a living donor instead of deceased donor.





Abstract# 498 Poster Board #-Session: P91-III

SIMULTANEOUS ARTERIAL AND BILIARY REPAIR AFTER LIVER TRANSPLANTATION. Daniele Sommacale, Fédérica Dondéro, Wellington Andraus, Claire Francoz, Alain Sauvanet, Valérie Vilgrain, Annie Sibert, Guido Liddo, François Durand, Jacques Belghiti. [1]*HPB Surgery and Liver Transplantation, Beaujon Hospital, Clichy, France.*

The presence of hepatic arterial stenosis (HAS) in patients with biliary strictures (BS) following liver transplantation is common. The treatment of these biliary complications remains difficult. The aim of this study is to report 7 patients with BS associated with HAS treated by simultaneous artery and biliary surgical repair.

Among 787 OLT performed from 1991 to 2005, 12 patients (1.5%) experienced BS associated with HAS. Retransplantation was indicated in 5 patients with intrahepatic biliary stenosis. In seven cases, with exclusive extrahepatic BS and HAS, simultaneous biliary and arterial repair were considered. Patients, aged from 31 to 60 years, underwent liver transplantation and experienced BS 42 days and HAS 66 days after transplantation. Simultaneous biliary and arterial repair was indicated in the presence of biliary duct to duct stenosis in 6 cases and after Roux-en-Y choledochojejunostomy in one case. All arterial stenosis were more than 50% of the arterial diameter. Six patients had had BS previously treated by plastic prothesis and two had had HAS previously treated by endovascular stent or pneumatic dilation.

Arterial repair was the first step of the procedure with a complete resection of the arterial stricture followed by a termino-terminal arterial anastomosis. No graft interposition was needed. In one case stenosis involved only the right hepatic artery while in the 6 other cases the stenosis was located at the site of the anastomosis. In all cases resistance index was > 0.5 on intra-operative doppler ultrasound after reconstruction. Biliary repair included in all cases a Roux-en-Y biliaryjejunostomy. There were no postoperative deaths and morbidity was observed in only one patient. No postoperative biliary fistulas were observed and the mean hospital length of stay was 16 days. With a mean follow up of 67 months, all patients are alive without graft loss. Recurrent arterial stenosis was discovered in one patient and although successfully treated by endovascular stent, he developed biliary strictures 13 months later and was treated by iterative Roux-en-Y hepaticojejunostomy.

Results of our series demonstrated that simultaneous biliary and arterial surgical repair is safe and efficient in patients with extrahepatic biliary stenosis associated with arterial stenosis complicating liver transplantation.

Abstract# 499 Poster Board #-Session: P92-III

SURGICAL TREATMENT OF BILIARY COMPLICATIONS AFTER PEDIATRIC LIVER TRANSPLANTATION. Gregorio Maldini[1], Mara Giovanelli[1], Alessandro Lucianetti[1], Vittorio Corno[1], Michela Guizzetti[1], Domenico Pinelli[1], Marco Zambelli[1], Roberto Manfredi[1], Mariaclara Dezza[1], Giuliano Torre[2], Michele Colledan[1]. [1]*Surgery, Ospedali Riuniti Bergamo, Bergamo, Italy;* [2]*Pediatrics, Ospedali Riuniti Bergamo, Bergamo, Italy.*

Objective: to assess the results of surgical treatment of biliary complications after pediatric liver transplantation

Methods: this is a retrospective review of the outcome of 23 pediatric patients who underwent relaparotomy for biliary complications after liver transplantation. We present the indications, the surgical technical features, incidence and type of complications, need for retransplantation, patient and graft survival rates.

Results: from October 1997 trough February 2006, 309 pediatric orthotopic liver transplants were performed in 272 patients. Among those 83 (31%) experienced biliary complications: 57 patients(20,9%) suffered major events defined as missed radicles, strictures or major leaks, and required either a percutaneous approach in 34 cases(12,5%) or relaparotomy in 23(8%). 11 operations (47%) were urgent and 12 (53%) elective. 13(56,5%) surgeries were performed early, defined as operation during the index transplant admission, and 10 (43,5) late during subsequent admissions. The presence of strictures was the most common complication involving 43 patients (15%), leading to biliary reconstruction in 13 cases. Surgical control of leaks occured in 10 cases. Operative mortality was zero. Not a single patient was retransplanted because of an isolated biliary problem while other 8 patients were retransplanted for other causes with concomitant biliary issues. The patient and graft survival among patients who underwent surgical intervention are respectively 100% and 100% at one year and 100% and 91% at five years

Conclusions: biliary complications are the most common surgical complications after pediatric liver transplantation. Surgery is usually indicated after failure of less invasive form of treatment. Biliary complications should not lead to retransplantation. There is room for improvement in the techniques of biliary reconstruction in pediatric liver transplantation.

Abstract# 500 Poster Board #-Session: P93-III

STRATEGIES TO REDUCE BILIARY FISTULA AFTER DONOR HEPATECTOMY IN A LIVING DONOR LIVER TRANSPLANTATION PROGRAM. Vincenzo Pugliese[1], Eduardo Carone[1], Renata S. Pugliese[1], Eduardo A. Fonseca[1], Joao Seda Neto[1], Alcides A. Salzedas[1], Andre Godoy[1], Gilda Porta[1], Irene K. Miura[1], Vera Baggio[1], Tereza Guimaraes[1], Rogerio C. Pinheiro[1], Carla A. Matos[1], Mario Kondo[1], Paulo Chapchap[1]. [1]*Liver Transplant Unit, Hospital do Cancer/Hospital Sirio Libanes, Sao Paulo, Brazil.*

The major ethical issue in living donor liver transplantation is donor safety. Biliary leak is a frequent postoperative complication after donor hepatectomy and can increase perioperative morbidity. The aim of the study was to assess the effectiveness of two surgical maneuvers to reduce biliary fistula after donor hepatectomy: 1- to observe the staining of an abdominal swab covering the cut surface of the liver for 20 to 30 minutes after the liver transection, and 2- to perform a running suture over the ductal plate posterior to the bile duct section plane. From June 1995 to December 2006, 300 hepatectomies were performed in our center for living donor transplantation (199 left lateral segmentectomies, 52 left lobectomies and 49 right hepatectomies). No mortality was registered. 158 donors were male and donor's median age was 31 years (range: 16 to 52 years). Patients were divided in two groups: Group I (175 cases) – the 2 maneuvers previously described were not performed, and Group II (125 cases) – the 2 maneuvers were used. Postoperative biliary fistula occurred in 13 donors (4.3%). The incidence of biliary fistula in Group I was 6.9% (12/175), and in Group II 0.8% (1/125) (p= 0.024). In conclusion, these two procedures helped to significantly decrease the incidence of biliary complications after donor hepatectomy.

Abstract# 501 Poster Board #-Session: P94-III

HMGB1 AS A NEW MARKER OF ISCHEMIA-REPERFUSION INJURY IN HUMAN LIVER TRANSPLANTATION. Eija Tukiainen[1], Minna Ilmakunnas[1], Ari Rouhiainen[2], Heikki Rauvala[2], Arno Nordin[1], Heikki Mäkisalo[1], Krister Höckerstedt[1], Helena Isoniemi[1]. [1]*Transplantation and Liver Surgery Clinic, Helsinki University Central Hospital, Helsinki, Finland;* [2]*Neuroscience Center, University of Helsinki, Helsinki, Finland.*

Background: High mobility group box 1 (HMGB1), a cytokine secreted by activated phagocytes and passively released from necrotic cells, is a late mediator of systemic inflammation. In experimental warm hepatic ischemia-reperfusion (I/R) injury, HMGB1 mediates inflammation and organ damage. In liver transplantation (LTX) the role of HMGB1 is unknown.

Materials and Methods: In 20 patients undergoing LTX, serial systemic blood samples were collected during LTX and postoperatively up to 48 hours after reperfusion. To assess changes within the graft during reperfusion, blood samples from both portal and hepatic veins were obtained at portal declamping, 10 min later, and 10 min after hepatic artery declamping. HMGB1 was determined from plasma by Western blotting. Clinical assessment included liver function tests and patient follow-up for the first postoperative month. Data are given as mean (95% confidence interval).

Results: HMGB1 was undetectable before reperfusion. During reperfusion, HMGB1 leaked from the graft into systemic circulation, peaking at 10 min after portal vein declamping [102 (37-168) ng/mL, $P<0.001$ vs preop], with a rapid decline thereafter. At 8 hours after reperfusion, HMGB1 was still detectable in only 6 patients. HMGB1 levels were markedly higher in hepatic venous than in portal blood (Table 1). HMGB1 levels in hepatic venous blood at 10 min after hepatic artery declamping correlated with peak postoperative ALT level (R=0.588, P=0.008). Neither HMGB1 nor ALT levels correlated with cold ischemic time [331 (range 225-630) min].

HMGB1 levels during graft reperfusion

	Portal vein	Hepatic vein	*P*
Portal declamping	10 (-3-22)	238 (135-342)*	<0.001
10 min after portal declamping	116 (54-179)	235 (138-332)	<0.001
10 min after arterial declamping	68 (17-119)	109 (55-163)	0.008

HMGB1 unit ng/mL, mean (95% CI), *caval effluent

Conclusions: In human LTX, HMGB1 originates from the reperfused graft, likely reflecting washout from both damaged hepatocytes and activated neutrophils. Rapidly declining HMGB1 levels argue against prolonged systemic inflammation. Hepatic HMGB1 efflux correlated strongly with postoperative ALT, suggesting HMGB1 could be used as a marker of I/R-injury in human LTX.

Abstract# 502 Poster Board #-Session: P95-III

VENOUS RENAL ISCHEMIA REPERFUSION INJURY IS MORE SEVERE THAN ARTERIAL ISCHEMIA REPERFUSION INJURY IN A RAT MODEL.

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Background : Suprarenal inferior vena cava outflow occlusion during liver transplantation results in predictable renal injury. In contrast to arterial inflow occlusion during vascular surgery, mechamisms are not well known. The goal of this study was to examine the pattern of warm ischemia reperfusion injury (IRI) induced by renal venous outflow obstruction when compared to arterial occlusion. and to investigate distinct inflammatory mediator and their contribution to IRI on gene expression and protein levels.

Methods: Male Fischer rats were used for the renal warm ischemia model. Twenty five minutes of renal ischemia was induced by occluding selectively either the left renal artery or vein and contralateral nephrectomy. As a control, we used rats undergoing sham operation without occlusion of renal vessels. After 24 hours of reperfusion, whole blood and kidney tissue were collected for further analysis. Results ; Serum creatinine levels taken 24 hrs after reperfusion were significantly higher in the venous group (V, n=6) when compared to the arterial group (A, n=6, p=0.02). Neutrophil accumulation was significantly higher in the V group as demonstrated by myeloperoxidase (MPO) activity in renal tissues ($p<0.01$). Analysis demonstrated significantly higher ICAM-1 and VCAM-1 expression in both experimental groups when compared to sham but non-significant differences were seen between the A and V group. Further analysis revealed significantly higher chemokine monocyte chemoattractant protein (MCP-1) expression and protein levels in the V group when compared to A group. ($p<0.01$). Heme oxygenase-1 protein levels, an inhibitor of MCP-1, were signficantly higher in the V group ($p<0.01$). Similarly, TNF protein levels, an activitor of MCP-1 was also signficantly higher in the V group ($p<0.01$).

Conclusion ; Venous renal outflow obstruction results in more severe functional renal injury when compared to arterial inflow occlusion of similar duration. This is associated with higher MPO and MCP-1 activation which does not seem to be supressed by heme-oxygenase 1 but in part activated by TNF.This is the first study to investigate possible targets for renal protective interventions during liver transplantation.

Abstract# 503 Poster Board #-Session: P96-III

FIRST-LINE LIVER RESECTION AND SALVAGE LIVER TRANSPLANTATION IS AN INCREASING THERAPEUTIC STRATEGY FOR PATIENTS WITH HCC AND CHILD A CIRRHOSIS.

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Aim: The present study focused on 9 patients with HCC associated with Child A liver cirrhosis undergoing first-line liver resection and salvage liver transplantation (SLT) for liver tumor recurrence.

Patients and Methods: Forty-six patients with HCC underwent liver transplantation (LT), 37 (80.5%) were primary liver transplantation (PLT) and 9 (19.5%) were SLT. All patients who underwent SLT received minor trans-abdominal liver resection (segmentectomy (5), wedge resections (6)).

Results: The median time from resection to liver recurrence was 14.5 months (range: 3 - 30) and the median time from resection to transplantation was 17.1 months (range: 11-38). The median time on the waiting list was 3.8 months (range: 1 day -36 months) for PLT and 4.2 months (range: 14 days -11.4 months) for SLT. After a median 26.3 months (range: 1-60.5) follow-up, the post-transplant 1-, 3- and 5 year overall survival rates for SLT (88.9% , 88.9% and 88.9%) were similar to those for PLT (78%, 62.7% and 62.7%). Four (10.8%) patients in the PLT group had HCC recurrence, none in the SLT group. The 1-, 3-, 5 year disease-free survival rates for PLT (89%, 74% and 74%) were similar to those for SLT (100%, 100% and 100%) (Fig. 2). Operative mortality did not differ between the two groups and included 4 (10%) deaths (infections (3), gastro-intestinal haemorrhage (1)) for the PLT group and 1 (11%) death (PNF) for the SLT group. The intra-perioperative bleeding, operative time, intensive care unit and in-hospital stay, overall incidence of postoperative complications were similar in the two groups.

Conclusions: In our experience SLT for HCC is a feasible procedure with results in terms of overall survival, disease-free survival and postoperative complications similar to those reported for patients who underwent PLT at our institute. In a centre that performs a reasonable amount of liver resections for HCC, a very important space exists for SLT as shown by the fact that such strategy has been used in the 20% of the patients submitted to LT for HCC.

Abstract# 504 Poster Board #-Session: P97-III

TRANSTHORACIC OPEN WINDOW HEPATOSTOMY FOR THE TREATMENT OF LARGE RIGHT BILIARY ABSCESSES AFTER LIVER TRANSPLANTATION.

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Operative treatment options for large abscesses of biliary origin arising in a graft after liver transplantation include radiological percutaneous or surgical drainage and retransplantation. However, there are instances in which both conventional drainage procedures fail and retransplantation is not feasible because of the septic conditions and the prior surgical history of the patient. A new surgical approach to biliary abscesses located in the right liver was devised, taking inspiration from the “open window thoracostomy” described by Clagett in 1963 for the management of postpneumonectomy empyema. The technique of “open window hepatostomy” is performed through a right posterolateral thoracic incision over the bed of the 8th or 9th rib. A partial 8-10 cm costectomy is done and wide access to the lower pleural cavity is gained. After localization of the hepatic abscess by needle aspiration, the diaphragm is opened over the abscess cavity. Complete surgical drainage and debridement of the cavity is performed. After placement of a thoracic tube, the borders of the diaphragmatic breach are sutured to those of the thoracic incision.

Over a series of 1570 liver transplants performed between 1990 and 2006, the technique was applied in 3 cases (see table). The procedure allowed control of the septic state and discharge of the patient from the hospital in every instance. Repeated medications of the open wound and further interventions were always needed (see table) because an external biliary fistula invariably appeared. Nevertheless, complete healing with closure of the skin over the open window was obtained in two cases in 11 years and 13 months after the procedure, respectively. The third patient is currently at an advanced stage of the healing process 8 months after the hepatostomy.

Patient	Abscess origin	Previous attempted treatments	Time of hepatostomy after transplant	Further interventions	Healing time
1	Ascendent cholangitis in hepaticojejunostomy	Radiological drainage Surgery	7 months	Repeated thoracentesis Tetracyclin pleurodesis	11 years
2	Hepatic artery thrombosis	Radiological drainage	5 months	Thoracic drain placement Percutaneous balloon bilioplasty	13 months
3	Hematoma after percutaneous cholangiography for intrahepatic biliary stricture	Radiological drainage Surgery	4 months	Percutaneous biliary drainage	Ongoing

Abstract# 505 Poster Board #-Session: P98-III

MORPHOMETRIC STUDY COMPARING TWO METHODS OF HEPATIC VENOUS OUTFLOW RECONSTRUCTION IN PIGGYBACK LIVER TRANSPLANTATION. Fabricio F. Coelho[1], Paulo C. B. Massarollo[1], Gina C. R. Silvestre[1], Henrique D. M. Giroud[1], Fabio P. Gallucci[1], Fernando Matheus[1], Rodrigo J. Oliveira[1], Consuelo J. Rodrigues[1], Aldo J. Rodrigues, Jr.[1]
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INTRODUCTION: In piggyback liver transplantation, the anastomosis between the cranial portion of the graft inferior vena cava (IVC) and the common stump of the recipient middle and left hepatic veins (ME) has a higher frequency of hepatic venous outflow obstruction. This incidence decreases when a cavo-caval side-to-side anastomosis or the ostium of the three main hepatic veins of the recipient (RML) are used. On the other hand, venous return is reduced in these modalities due to a more pronounced constriction during the IVC clamping. The use of the ostium formed by the right and middle hepatic veins (RM) may limit IVC constriction. However, this benefit is only justified if a hepatic venous outflow tract with no anatomical restrictions can be obtained. The aim of this study is to compare the congruence of the IVC perimeter with the perimeter of the venous outflow tract at the anastomotic site and at its opening into the IVC in the RM and RML modalities. METHODS: Sixteen fresh human cadavers were studied. After total hepatectomy, a morphometric study of the hepatocaval confluence was done by measuring the perimeter of the IVC (IVCP) and, in RM and RML reconstructions, the perimeter of the venous outflow tract at the anastomotic site (RMP and RMLP) and at its opening into the IVC (RMoP and RMLoP). Digital images of all perimeters were obtained. The measurements were accomplished utilizing the KS300 image analysis software. The statistical analysis was performed using analysis of variance (ANOVA) for repeated measures. Statistical significance was established when the p value was less than 0.05. RESULTS: Examinations were performed in 11 men and 5 women with a mean age of 63.7 ± 15.7 years (40 to 83 years). Complete data were obtained for all the variables except for RMLoP. The mean RMLP (137.2 ± 24.3 mm; p<0.001), RMP (123.2 ± 20.1 mm; p=0.003) and RMoP (116.6 ± 17.5 mm; p=0,027) values were significantly larger than IVCP (107.9 ± 18.8 mm). RMLP values were significantly larger than RMP (p=0.004) and RMoP (p=0.001). CONCLUSION: In RM reconstruction, the venous outflow tract presents a larger perimeter than IVC both at the anastomotic site and at the opening into IVC. In comparison to RML, the RM modality presents a more congruent perimeter with the IVC.

Abstract# 506 Poster Board #-Session: P99-III

PIGGYBACK TECHINIQUE WITH AND WITHOUT CROSS-CLAMPING OF THE INFERIOR VENA CAVA (IVC) FOR ORTHOTOPIC LIVER TRANSPLANT (OLT) – A COMPARATIVE STUDY. Marcelo Sette[1], Edmundo Lopes[2], Alvaro Ferraz[1], Mauricio Barros[3], Telesforo Bacchela[3], Hoel Sette, Jr.[3], Marcel Machado[3], Marcelo Maia[4], Edmundo Ferraz[1].
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Introduction: Nowadays, the technique for OLT has become more widely used, since it does not use extracorporeal circulation, is known as "*piggyback*". In some situations, such as hypertrophy of the caudate lobe, this technique can still be used, but with the cross-clamping of the IVC, and is called "*piggyback with cross-clamping of the IVC*".
Objective: To compare the piggyback technique with and without cross-clamping of the IVC, using time spending on the surgery, blood requirements, hemodynamic parameters and kidney and liver function tests, during the operation and in the early period after OLT.
Patients and method: A retrospective study was undertaken involving 136 OLT performed between 2002 and 2005, at two Hospitals in Recife and Sao Paulo, Brazil. Of these, 36 were excluded because different techniques were used. The option for the piggyback technique was mostly related to surgeon preference. According to the piggyback technique used, the remaining 100 patients were divided on two groups: Group A (with cross-clamping) = 47 patients; and Group B (without cross-clamping) = 53 patients.
Results: No statistical difference regarding gender, age, original liver disease, ABO blood group, MELD score and kidney function prior to OLT were observed, showing that both groups were quite similar. The study showed that the OLT performed using the piggyback with cross-clamping of the IVC (Group A) took less time (1.39 hour) for the surgery and required less blood transfusion. Furthermore, no statistical differences were observed in hemodynamic parameters during the surgery or impairment of the kidney and liver function in the early post-operative period, between the two groups.
Conclusion: Comparing piggyback technique with and without cross-clamping of the IVC for OLT, no differences were detected in hemodynamic parameters or in renal and liver function tests, neither during the operation nor in the early post-operative period. However, the piggyback with cross-clamping of the IVC required less time for the surgery and less units of blood transfusion.

Abstract# 507 Poster Board #-Session: P100-III

LEARNING FROM THE DEAD FOR THE LIVING – AN INTRODUCTION OF PILOT COURSE IN SPLIT LIVER TECHNIQUES. Suresh K. Singhvi, Tom Karbe, Micheal Kammal, Klaus Puschel, Dieter C. Broering. *[1]Liver Unit, Freeman Hospital, Newcastle Upon Tyne, United Kingdom; [2]Deparment of Liver Surgery/Transplant, University Hospital, Hamburg, Germany; [3]Institute of Legal Medicine, University Hospital, Hamburg, Germany; [4]Institute of Legal Medicine, University Hospital, Hamburg, Germany; [5]Department of Liver Surgery/Transplant, Kiel Universitty, Kiel, Germany.*

Aim: To assess the feasibility of using organs(liver) from autopsy cases for training purposes.To assess the organs(liver) for splitting and if it mimicks the real situation during splitting process.
Methods: The Institute of Legal Medicine in the UKE, Hamburg provided the liver organs from the autopsy cases after consent had been taken from the relatives . The local laws were consulted and legality of this course was confirmed .Over a period of 6 months 18 livers were retrieved and stored in the cold storage at -20 degrees centigrate. No preservation fluid was used to store the liver.
Abstract: 8 experienced hepatobiliary/transplant surgeons were invited for the first split liver course. The demonstration of left lateral split and full right/full left split was done initially and then each surgeon had the oppurtunity of splitting one liver . The frozen liver were thawed in water at 50 degrees centigrade for 2 hrs. Each surgeon performed a full right full left split and a left lateral split (Hamburg technique). Prior to split the participants performed cholangiograms and angiograms to study the anatomy and feasibility of splitting. The participants were informed about the hazards of infection(HIV; HepB, HepC) and all necessary precautions were taken during the course.The experienced liver surgeons in the course felt that the liver dissection represented a real life scenario of touch and feel during dissection. A questionnaire has been sent to the participants to get a feedback about the split technique and course.
Conclusion: The course provided us the confidence to teach and train surgeons and to perform split livers. This will allow more Centres to conduct such courses in the future and to train the surgeons. The training will allow more surgeons to split livers and this will benefit more patients who will otherwise wait for a liver for a longer time.

Abstract# 508 Poster Board #-Session: P101-III

EXPERIMENT ON THE EFFECTS OF SELECTIVE DIGESTIVE DECONTAMINATION AND GLUTAMINE TO PREVENT INTESTINAL BACTERIAL TRANSLOCATION IN THE MODEL OF RABBIT PIGGYBACK LIVER TRANSPLANTATION. Li Li, Zhu Li, Ming X. Wen, Hua J. Ran, Gang Chen. *[1]Hepato-Biliary-Pancreas, The First People's Hospital of Kunming, Kunming, Yunnan, China; [2]Hepato-Biliary-Pancreas, The First People's Hospital of Kunming, Kunming, Yunnan, China; [3]Hepato-Biliary-Pancreas, The First People's Hospital of Kunming, Kunming, Yunnan, China.*

ObjectiveTo observe the effects of selective digestive decontamination (SDD) and glutamine (GLN) to prevent intestinal bacterial translocation (BT) in rabbit orthotopic piggyback liver transplantation(OPLT) model and to lower the incidence of postoperative pneumonia. **Methods** Establish 30 rabbit OPLT models and randomly divide them into three groups. Feeding SDD group receptor with the emulsion of tobramycin, polymyxin e and nystatin and SDD+GLN group with above emulsion adding GLN. Control

group only establishes OPLT model. portal vein blood, ileum tissue and lung tissue are obtained in each group before and after the operation. To observe ileum pathology, blood BT rate and postoperative pneumonia incidence. **Results** Before portal vein blockading, the ileum villus length in SDD+GLN group is longer than that of Control and SDD groups(p<0.05), but along with blockading, the index of control group gradually exceed that in SDD+GLN group. Then after the operation, this index of SDD+GLN group shows a totally reverse result (p<0.01). At the time of blockading 45 min and postoperative 30 hours, the positive rate of portal vein blood bacterial culture in SDD+GLN group is lower than that in control group(p<0.05). The incidence of postoperative pneumonia in SDD+GLN group is lower than that in control group(p<0.01). **Conclusion** GLN has nourishment effect to the intestinal mucous membrane epithelium cell. When combined with SDD, it can effectively lower intestinal BT rate during the period of portal vein blockade and postoperative,and the incidence of postoperative pneumonia.
[Key Words] Orthotopic piggyback liver transplantation;Intestinal bacterial translocation;Selective digestive decontamination;Glutamine;Postoperative pneumonia.

Abstract# 509 Poster Board #-Session: P102-III

LIVER TRANSPLANTATION FOR PATIENTS WITH TIPS: ANALYSIS OF TECHNICAL DIFFICULTIES. Renato F. da Silva[1], Paulo C. Arroyo, Jr.[1], William J. Duca[1], Fabio B. Francischi[1], Erica Figikaha[1], Fabio F. Quagliato[1], Maria L. P. Pinheiro[1], Adinaldo A. M. da Silva[1], Luis F. Reis[1], Daniel G. Micheline[1], Rita C. M. A. da Silva[1]. [1]*Surgery and Liver Transplantation Unit, Faculty of Medicine of Sao Jose do Rio Preto - FAMERP, Sao Jose do Rio Preto, Sao Paulo, Brazil.*

Study purpose: The aims of this study were to analyze the intra-operative technical difficulties, transfusion of blood derived products and the mortality of patients with TIPS undergoing liver transplantation . **Patients and Method:** A total of 40 patients undergoing liver transplantation were included for this retrospective analysis, divided in two groups: Group I = 20 patients with TIPS, and Group II = 20 patients without TIPS, taken as control a group. They were paired according to the Child-Turcot-Pugh score. Comparisons among the groups were performed. **Results**: Technical difficulties were founded for six patients, related to TIPS migration: there was migration to the portal vein for four patients, to the right atrium for one patient and to the vena cava for one patient. These technical difficulties were not impairment for the transplant procedure. There was no thrombosis or bleeding resulting from the TIPS manipulation during the transplant operation. Transfusion of derived blood products were for Group I and Group II, respectively: red blood cells concentrate - 5,5 *vs*. 4,5; *p value* = 0,01; platelets - 8,1 *vs.* 13,3; *p value* = 0,04; plasma - 9,85 *vs*. 8,6; *p value* = 0,2 and Cryoprecipitate 4,1 *vs.* 6,7; *p value* = 0,1. Mortality within 30 days after liver transplantation was, for Group I and Group II, respectively, 20% vs. 25%; p value = 0,5. **Conclusion:** For patients with TIPS undergoing liver transplantation, we founded technical difficulties that did not impair the procedure. There was no increase in surgical mortality and there was reduction in transfusion of platelets. These results reinforce the role of TIPS as bridge for liver transplantation.

Abstract# 510 Poster Board #-Session: P103-III

LIVER TRANSPLANTATION WITH CAVO-PORTAL HEMI-TRANSPOSITION: REPORT OF A CASE WITH VENOUS PRESSURE MEASUREMENTS. Renato Romagnoli[1], Alessandro Franchello[1], Gianluca Paraluppi[1], Paolo Strignano[1], Andrea Doriguzzi Breatta[1], Mauro Salizzoni[1]. [1]*Liver Transplant Center, University Hospital Molinette, Torino, Italy.*

Diffuse portal system thrombosis is a challenge when liver transplantation (LT) is needed. If multivisceral grafting is the ideal solution, it still carries much higher risks than LT alone. Using the recipient inferior vena cava (IVC) to give portal flow to a liver graft (cavo-portal hemi-transposition, CPHT) is an alternative technique, but it determines pressure changes in the cavo-portal district which have never been measured.

A 25-year old man was referred for PSC with recurrent infections and long-standing transhepatic biliary drain. Imaging showed hepatic pedicle cavernoma with inveterate thrombosis of the entire portal and proximal splenomesenteric veins. Splanchnic venous circulation occurred through a huge (3 cm caliber) spontaneous distal splenorenal shunt. He had no ascitis, 0.8 mg% creatinine, 120,000/ml platelet and 4,000/ml WBC counts, F1 blue esophageal varices and a 18 cm spleen. At cavography, pressure gradient through the shunt was 6 mmHg. The patient was listed for LT. Portomesenteric cavernoma was confirmed at operation; a whole liver was implanted with the piggy-back and CPHT techniques, transecting the recipient retrohepatic IVC. Due to small bowel edema, hepaticojejunostomy was constructed 4 days later. He received basiliximab, tacrolimus, steroids and low molecular weight heparin 70 UI/kg/day; no indwelling catheter in the femoral veins was placed. He was discharged home on day 16. Rejection on day 21 responded to steroid pulses and mycophenolate adjunction. Antithrombotic prophylaxis continued with warfarin. Four months after LT, imaging saw no ascitis and a 18 cm spleen; esophageal varices were F1 white; cavo-portography showed an enlarged graft portal vein. The patient is now alive and well 5 months after LT, with normal liver function tests, 1.2 mg% creatinine, 104,000/ml platelet and 3,260/ml WBC counts. Pressure measurements evidenced a sharp increase in the recipient IVC after reperfusion. With a well-functioning liver, cavo-portal pressure decreased with time, so that after 4 months residual hypertension in the splanchnic venous district was lower than before LT.

Pressure values (mmHg)	6 months before LT	At LT - before clamping	At LT - after reperfusion	4 days after LT	4 months after LT
Splenorenal shunt	11	-	-	-	10
Infrarenal IVC	6	-	-	-	9
Retrohepatic IVC / Cavo-Portal anastomosis	5	5	20	13	8

Abstract# 511 Poster Board #-Session: P104-III

ENDOVASCULAR MANAGEMENT OF EARLY PORTAL VEIN THROMBOSIS CAUSED BY CORONARY VEIN STEAL AFTER LIVER TRANSPLANTATION. Hee Chul Yu[1], Bon Yong Koo[1], Hyo Sung Kwak[2], Young Min Han[2], Baik Hwan Cho[1]. [1]*Surgery, Chonbuk National University Medical School, Jeonju, Jeonbuk, Korea;* [2]*Diagnostic Radiology, Chonbuk National University Medical School, Jeonju, Jeonbuk, Korea.*

Early portal vein thrombosis (PVT) after orthotopic liver transplantation (OLT) is relatively uncommon and a serious complication that can compromise graft and patient survival. The factors predisposing to PVT after OLT include rejection, technical problems during the surgery, use of vein grafts and conduits, preoperative PVT, previous portasystemic shunts and splenectomy, hypercoagulable state, and significant development of gastroesophageal collaterals. Among them, few cases of PVT caused by coronary vein (CV) steal after OTL have been reported. Herein we present a case with early PVT caused by CV steal after OLT which is treated by a percutaneous transportal approach. A 44 year-old male received an uneventful cadaveric OLT for end stage liver disease secondary to alcoholic hepatitis. His Child-Pugh-Turcotte score at transplant was 11 and he was listed as UNOS status 2B. During the surgery, PV was found to be patent and reconstruction was performed by end-to-end fashion. Dilated splenic vein was found and partially ligated to increase hepatopetal flow. Intraoperative doppler ultrasonography showed good patency of the reconstructed PV. Postoperative course was uneventful, but deteriorated liver function tests and hepatic encephalopathy including stuporous mental status were presented 2 days after surgery. Doppler ultrasonography showed decreased blood flow to the graft in the distal portion of the extrahepatic PV. And computed tomography (CT) showed severe dilatation of the CV and extrahepatic PV obstruction caused by thrombosis. Percutaneous transhepatic portal venous thrombectomy, Smart Control Sent insertion into the PV, and an embolization of the CV with Microcoils were performed. Increased portal blood flow without thrombosis was shown on a CT taken immediately after the procedure and hepatic encephalopathy was improved. After that, liver function tests improved and good PV patency was shown by serial follow-up doppler ultrasonography. Currently, the patient is doing well after 5 months of OLT.

Abstract# 512 Poster Board #-Session: P105-III

PORTAL VEIN STENOSIS AFTER LIVER TRANSPLANTION: A SINGLE-CENTER EXPERIENCE. Agnaldo S. Lima[1], Alexandre P. Resende[1], André L. R. Seabra[1]. [1]*Instituto Alfa de Gastroenterologia, Faculdade de Medicina da UFMG, Belo Horizonte, Minas Gerais, Brazil.*

The authors report two cases of symptomatic portal vein stenosis after orthotopic liver transplants with cadaveric donors (whole liver grafts) and in an experience of 400 liver transplantations during 12 years. Treatment options and the authors choices are also discussed. One case occurred a few days after surgery and the other one, after 21 months. Portal hypertension syndrome happened in both cases, with upper digestive tract bleeding in one of them. Diagnosis was achieved with gastric endoscopy and confirmed by dopplerfluxometry-ultrasound. The treatment for both patients was performed with interventional radiology and was successful. One of the patients died of complications not related to the procedure after a week and the other is alive

after 11-month follow-up. In both cases, technique was the same: trans-hepatic punction of the right branch of the portal vein followed by balloon dilation of the stenosis. Cianoacrilate was used for embolization of the punction stretch. After orthotopic liver transplantation, portal vein stenosis and thrombosis occurs rarely, in 1 to 3% of the cases. The literature shows that the factors involved with portal vein stenosis are inadequate surgical technique, leading to a vein without proper alignment or left too long; hipercoagulate states and previous surgery over the portal vein. Clinical presentation is portal hypertension, hepatic failure, edema or volumous ascitis. The treatment options, besides percutaneous angioplasty, include thrombolysis, surgical bypass or portosystemic shunts. Success in the treatment of the portal vein complications after liver transplantation is about 70%, but it reaches 100% in the stenosis itself. Living-donor and cryopreserved venous grafts seem to have influence in the appearance of those complications.

Abstract# 513 Poster Board #-Session: P106-III

SUCCESSFUL SURGICAL CORRECTION OF COMPLETE PORTAL VEIN OCCLUSION BY THROMBOSIS AND CONCOMITANTLY DEVELOPED A-P SHUNT WITHOUT HEPATOCELLULAR DYSFUNCTION COMPLICATING ORTHOTOPIC LIVER TRANSPLANTATION. Koo-Jeong Kang[1], Yong-Hoo Kim[1], Hyung-Tae Kim[1], Won-Hyun Cho[1], Kyang-Bum Cho[2], Jae-Suk Hwang[2], Jung-Hyuk Kwon[3]. *[1]Surgery, Keimyung University School of Medicine, Daegu, Korea; [2]Internal Medicine, Keimyung University School of Medicine, Daegu, Korea; [3]Radiology, Keimyung University School of Medicine, Daegu, Korea.*

Complete occlusion of portal venous inflow caused by intraluminal thrombus complicating orthotopic liver transplantation occurred in the immediate post-transplant period, is to be corrected surgically by thrombectomy. Retransplantation is inevitable if the liver is not viable. Portal vein thrombosis developed in the immediate postoperative period was one of the leading causes of primary nonfunction(PNF) or primary dysfunction(PDF).

A 41 year old male underwent orthotopic liver transplantation for chronic hepatitis B with cirrhosis. The initial perfusion of portal flow detected by color Doppler untrasound(CDU) was good and the hepatic arterial perfusion as well. The reconstruction of hepatic artery using the inferior mesenteric artery of the donor was larger in diameter than the hepatic artery proper that was anastomosed. Therefore the hepatic arterial blood might be flowed over to match the hepatic arterial diamanter in the hilar area. The sequential image of the CDU showed good perfusion until the 4th postoperative day. The CDU taken at the 7th postoperative day showed arterio-portal shunt in the hilum with complete obstruction of the portal flow above the confluence of superior mesenteric and splenic vein. There was no evidence of hepatic dysfunction with normal serum level of AST, ALT, prothrombin time(PT), activated partial thromboplastin time(aPTT), INR and bilirubin during the remarkable derangement of vascular inflow, complete obstruction of portal vein and marked A-P shunt. The obstructed portal vein was revised after removal of the organized thrombus at the postoperative 11th day. The thrombosis might be caused by redundant portal vein. The patient was recovered completely without any vascular complication after thrombectomy with revision of the portal vein. This hemodynamic change of a big A-P shunt with portal vein thrombosis without hepatic dysfunction was not reported in the literature.

Abstract# 514 Poster Board #-Session: P107-III

HEPATIC ARTERY THROMBOSIS TREATED BY THROMBOLYSIS AFTER LIVER RETRANSPLANT. Sergio P. Meira-Filho[1], Rogerio C. Afonso[1], Jose M. A. Moraes-Junior[1], Fernando Pandullo[1], Luis E. P. Fonseca[1], Marcelo B. Rezende[1], Felipe Nasser[2], Francisco C. Carnevale[2], Ben-Hur Ferraz-Neto[1]. *[1]Liver Transplantation Unit, Albert Einstein Jewish Hospital, Sao Paulo, Brazil; [2]Interventional Radiology Unit, Albert Einstein Jewish Hospital, Sao Paulo, Brazil.*

Early hepatic artery thrombosis (HAT) is the most frequent and serious vascular complication after orthotopic liver transplantation (OLT). It is associated with a high incidence of mortality and morbidity, and it is the main cause of early graft loss after OLT. Therefore, early diagnosis is essential to the graft rescue. Traditionally, liver retransplant has been the standard treatment for this condition. Organ shortage, high expensive costs of reoperation and the development of minimally invasive techniques has changed this setting. More recently, the interventional radiology and endovascular techniques have been used to management of HAT, with interesting results. **Case Report:** we report a case of a patient transplanted for autoimmune fulminant hepatic failure who developed HAT on day 7. Retransplantation was performed on day 8 using an infra-renal iliac conduit for arterial revascularization. On day 5 of the retransplant, after the rise of aminotransferases, a doppler ultrasonography of the liver (DUSL) enabled early diagnosis of an iliac conduit thrombosis. Angiography was performed to confirm the HAT diagnosis, following the transcatheter arterial thrombolysis using a total dose of 30mg of Actylise® (alteplase – a recombinant tissue-type plasminogen activator). The total interventional procedure time was 3 hour. Post-procedure angiographic study evidenced pervious anastomosis and complete restoration of the hepatic allograft arterial flow. Follow-up evidences normal liver function 4 months after transplantation, and the control DUSL has been normal. Patient is maintained in oral anti-coagulants. Therefore, interventional radiology with transcatheter arterial thrombolysis using Actylise® could be considered an option for the treatment of HAT when early diagnosed.

Abstract# 515 Poster Board #-Session: P108-III

TRANSJUGULAR INTRAHEPATIC PORTOSYSTEMIC SHUNTS: PICTORIAL REVIEW AND PRELIMINARY EXPERIENCE USING ECHO ENHANCED CONTRAST AGENT PESDA. Rodrigo C. Surjan[1], Andre C. Oliveira[1], Ailton Sepulveda, Jr.[1], Antonio S. Marcelino[2], Maria C. Chammas[2], Giovanni G. Cerri[2], Telesforo Bacchella[1], Marcel C. Machado[1]. *[1]Liver Transplant Service, University of São Paulo, São Paulo, Brazil; [2]Institute of Radiology, University of São Paulo, São Paulo, Brazil.*

Transjugular Intrahepatic Portosystemic Shunts is a minimally invasive interventional procedure for treatment of portal hypertension and its complications, such as gullet varices and refractory ascites. Although TIPS is an effective procedure, some complications such stenosis, fracture, early thrombosis, migration and misposition are frequent. Doppler sonography is used as a follow-up tool but there is no consensus on which parameter or group of parameters is more efficient for diagnosing stenosis. Now, echo enhanced contrast agents are available and can be used as a complement for Doppler imaging. The authors reviewed the physiopathology, location and literature parameters for diagnosing TIPS stenosis, pointing which parameters seem to be most reliable. Other complications are also reviewed. Additionally, our initial experience with echo enhanced contrast agent PESDA is correlated with angiographic findings as an attempt to improve the detection of TIPS stenosis.

Abstract# 516 Poster Board #-Session: P109-III

EVOLVING EXPERIENCE WITH PREVENTION AND TREATMENT OF ARTERIAL STEAL SYNDROMES AFTER ORTHOTOPIC LIVER TRANSPLANTATION. Martina T. Mogl[1], Christoph Heidenhain[1], Nada Rayes[1], Natascha C. Nuessler[1]. *[1]Department of Surgery, Charité Campus Virchow-Klinikum, Berlin, Germany.*

Introduction: Shifting of the blood flow from the hepatic artery to the splenic or gastroduodenal artery after orthotopic liver transplantation (OLT) is known as arterial steal syndrome (ASS). Impaired arterial perfusion may lead to biliary tract lesions and even graft-loss. Based on our previous experiences with ASS we changed our pre- and intraoperative management and now report the results of 630 additional consecutive liver transplantations.

Patients and methods: 630 consecutive liver transplantations were retrospectively analysed focusing on preoperative assessment of hepatic and splenic artery diameter, type of arterial anastomosis and postoperative incidence of ASS. Statistical analysis was performed using SPSS for chi-square tests and survival analysis according to Kaplan-Meier.

Results: 79 patients (12.5%) who received an iliac artery graft interposition between aorta and graft hepatic artery were excluded, since development of ASS is impossible after diversion of hepatic and splenic arterial blood flow. In the remaining 551 patients arterial anastomosis was performed between donor and recipient hepatic artery. In 88 of these patients (16.0%) a larger diameter of the splenic artery compared to the hepatic artery warranted intraoperative banding or ligation of the splenic artery to prevent ASS. 23 of the 551 patients (4,2%) presented with ASS postoperatively, three of those despite banding of the splenic artery. All of the patients were treated with coil embolisation of the splenic artery. One patient needed splenectomy due to ischemic infarction. Five of the patients later developed biliary tract lesions requiring long-term endoscopic treatment, but none has been re-transplanted so far.

Discussion: Intraoperative ligation of the splenic artery seems to prevent the development of ASS, while banding still led to three ASSs postoperatively. In those patients coil embolisation is an effective treatment with an acceptably low number of complications. Considering the long-term damage of the biliary tract system with consecutive graft deterioration the prevention of hepatic artery problems should be a main focus with regard to surgical techniques.
Conclusion: We recommend thorough preoperative diagnostic of the celiac trunc, routine intraoperative ligation of the splenic artery and postoperative consideration of the ASS when facing non-immunological problems with graft-function.

Abstract# 517 Poster Board #-Session: P110-III

EFFICACY AND SAFETY OF PEGYLATED INTERFERON PLUS RIBAVIRIN IN PATIENTS WITH HEPATITIS C RECURRENCE AFTER LIVER TRANSPLANTATION: A SINGLE CENTRE EXPERIENCE.

Francesca Agnelli[1], Mauro Viganò[1], Cristina Rigamonti[1], Giorgio Rossi[2], Massimo Colombo[1], Maria F. Donato[1]. *[1]Division of Gastroenterology, IRCCS Fondazione Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena, Milan, Italy; [2]Liver Transplant Unit, IRCCS Fondazione Ospedale Maggiore Policlinico, Mangiagalli e Regina Elena, Italy.*

BACKGROUND AND AIM: Optimal timing and schedule of antiviral treatment for hepatitis C virus (HCV) recurrence after liver transplant (LT) is still under evaluation. We retrospectively analyzed a cohort of LT recipients with histologically proven HCV recurrence who consecutively underwent antiviral treatment between 2002-2005. MATERIALS AND METHODS: 38 patients (29 males, 55 yrs, 30 genotype 1b) transplanted between 1993 and 2004 for HCV-related cirrhosis (18 with hepatocellular carcinoma) underwent antiviral treatment at least 6 months after LT (median 30 months, range 6-94). Criteria for treatment were: staging >1 and grading >4 by Ishak score. All patients received ribavirin (Rbv) 400-800 mg/day, 20 received Peg-IFN-a_{2a} 135-180 mcg/week and 18 patients received Peg-IFN-a_{2b} 0.5-1.0 mcg/kg/week. Growth factors (GFs) were also employed. Immunosuppression was CSA in 17 and Tacrolimus in 21. Treatment duration was intended for 12 months and the analysis was performed as intention-to treat. RESULTS: Twenty-eight (74%) patients completed a full year of therapy; 14 of them experienced side effects (mostly anemia and leukopenia) requiring dosage reduction. Overall, end-treatment virological response was achieved in 20 patients (53%) whereas sustained virological response (SVR) was obtained in 15 (39%). SVR was achieved in 86% of patients with HCV-RNA clearance (PCR assay) at week 4 compared to 15% of patients without it (p=0.002). Two on-treatment responders developed a severe graft dysfunction at month 8th and 9th of treatment and both showed serological markers of autoimmunity. Although antiviral treatment was stopped and steroids were started, one of them developed a cholestasis due to chronic rejection requiring retransplant. CONCLUSIONS: Interferon therapy of LT patients with recurrent HCV lead to viral clearance in nearly 40% of cases. Dose reduction frequently occurred despite GFs use. Severe graft dysfunction associated with both autoimmune features and chronic rejection may complicate interferon therapy.

Abstract# 518 Poster Board #-Session: P111-III

TREATMENT OF HEPATITIS C RECURRENCE AFTER LIVER TRANSPLANTATION: RESULTS FROM A MULTICENTER RETROSPECTIVE STUDY IN BRAZIL.

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Study purpose: The purpose of this multicenter study is to analyze, in clinical practice, the results of standard or pegylated interferon (IFN or Peg-IFN) and ribavirin (RIB) therapy for hepatites C recurrence after liver transplantation.
Patients and Methods:Fifty six patients (41 male mean age of 46+_11 years old) treated with IFN (n=18, group I) or Peg-IFN and RIB (n=38, group II) for hepatites C recurrence from four liver transplant centers were studied.
Results: . The duration of therapy was 1 year for most of the patients (38; 68%). Suspension, temporary interruption or dose reduction of antiviral agents occurred, respectively for 9, 17 and 20 patients. Adjuvant therapies with granulocyte colony stimulant factors (GCSF) and erythropoietin was used for 9 and 17 patients, respectively. Early virologic response (EVR) was 67%. End of treatment response was achieved for 52% and SVR reached 35% Fisher test analysis showed SVR associated with EVR (67% x 0%; p value = 0,0003) and with Peg-IFN+RIB (52% x 0%; p value = 0,001). The HCV Genotype was not associated with SVR.**Conclusion:** The results for antiviral treatment of hepatites C recurrence post-liver transplant are similar to the obtained in non-transplant patients. SVR was associated with EVR and treatment with Pegylated Interferon + Ribavirin.

Abstract# 519 Poster Board #-Session: P112-III

INFECTIONS IN LIVER TRANSPLANT RECIPIENTS UNDERGOING IN-HOSPITAL RETRANSPLANTATION AND/OR WITH PRETRANSPLANT HOSPITALIZATION.

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Background: Despite improvements in infection control, multidrug-resistant bacterial infections still occur in some liver transplant recipients. Our clinical impression was that these occurred most often in pts who underwent retransplantation and/or who had been hospitalized prior to transplantation.
Methods: Data on demographics, clinical events, and infections were collected on 100 liver transplants in 93 pts over 10.5 months, including 11/93 (12%) who underwent retransplantation; 6/11 ("acute" retransplant) were hospitalized between their transplants, while 5/11 ("late" retransplant) came from home. Some also underwent reoperation for various reasons.
Results: Organisms included VRE (16), Pseudomonas aeruginosa (18), vancomycin-sensitive Enterococcus (9), C. difficile (6), and <6 episodes of Klebsiella, Enterobacter, MRSA, and other bacteria; 2 had candidemia. 12 were coinfected with VRE and Pseudomonas (Tables 1 and 2).
Conclusions: VRE and Pseudomonas infections were most common in liver transplant recipients who underwent acute retransplantation and/or were hospitalized prior to transplantation, which may be associated with more exposure to nosocomial pathogens. Neither infection was prevented by ampicillin-sulbactam prophylaxis. Alternative prophylaxis as well as additional infection control measures may be warranted in these high-risk groups.

Table 1

	VRE	Pseudomonas	Reoperations	Bile Leak	Alive
Acute Re-Transplant	5/6 (83%)	5/6 (83%)	6/6 (100%)	1/6 (17%)	4/6 (67%)
Late Re-Transplant	2/5 (40%)	3/5 (60%)	4/5 (80%)	2/5 (40%)	4/5 (80%)
Others	9/82 (11%)	10/82 (12%)	12/82 (15%)	9/82 (11%)	79/82 (96%)
p value	< .0001	< .0001	< .0001	.16	.0076

Table 2

	VRE	Pseudomonas	Reoperations	Bile Leak	Alive
Hospitalized Pre-Transplant (26/93=28%)	10/26 (38%)	11/26 (42%)	13/26 (50%	7/26 (27%)	22/26 (85%)
Others (67/93=72%)	6/67 (9%)	7/67 (10%)	9/67 (13%)	5/67 (7%)	65/67 (97%)
p value	.0018	.0012	.0005	.021	.056

Abstract# 520 Poster Board #-Session: P113-III

NON-VIRAL INFECTION TRANSMISSION FROM DONOR TO RECIPIENT OF A LIVER TRANSPLANTATION.

Oscar Len[1], Joan Gavalda[1], Yolanda Puigfel[1], Itxarone Bilbao[1], Luis Castells[1], Lluis Llopart[1], Jose L. Lazaro[1], Alfredo Escartin[1], Teresa Pont[1], Nuria Masnou[1], Joaquim Balcells[1], Albert Pahissa[1]. *[1]Liver Transplant Unit, Hospital Vall d'Hebron, Barcelona, Spain.*

Introduction: The disparity between demand and supply has led transplant units to look toward more marginal candidates. These donors include those who may potentially transmit infectious diseases to their recipients. There are reports documenting isolated instances of transmission, sometimes with

bad results. However, some authors have reported a low rate of complications for patients who have received potentially infected grafts. Thus, information is still scarce and controversial.
Objective: To determine the frequency of transmission of non-viral infections from donors to recipients and the effect on 30-day patient survival after transplantation of these organs.
Methods: Since January 2004 to December 2005, there were 115 consecutive adult liver transplant procedures. Information related to recipients and their respective donors was prospectively collected in an online database within the Spanish Research Network for Study of Infection in Transplantation (RESITRA). A descriptive study of non-viral infection transmission and its effect on survival was performed. These results were compared to those for recipients whose organs were procured from donors without bacterial or fungal infection during the same time period.
Results: There were 17 infected donors that accounted for 115 (14.8%) transplant procedures. The main cause of donor death was stroke (14 out of 17). The distribution by type of infection was: preservation solution 5 (29.4%), intraabdominal 4 (23.5%), pneumonia 3 (17.6%) and meningitis 2 (11.8%). The most commonly isolated microorganism was *Enterobacter cloacae* (5/17;29.4%) followed by *Escherichia coli* (3;17.6%) and *Staphylococcus aureus* (2;11.8%). There was no case of non-viral infection transmission and 30-day survival was 100%.
Conclusion: Although donor non-viral infection was not an unfrequent event in liver transplantation, its transmission to the recipient seemed very low with no effect on patient survival. Data presented here may help increase the number of available organs for liver transplantation.

Abstract# 521 Poster Board #-Session: P114-III

INCIDENCE OF MULTIDRUG RESISTANT ORGANISMS INFECTION THE FIRST 30 DAYS AFTER LIVER TRANSPLANTATION. Oscar Len[1], Joan Gavalda[1], Yolanda Puigfel[1], Itxarone Bilbao[1], Luis Castells[1], Lluis Llopart[1], Alfredo Escartin[1], Jose L. Lazaro[1], Joaquim Balcells[1], Albert Pahissa[1]. *[1]Liver Transplant Unit, Hospital Vall d'Hebron, Barcelona, Spain.*
Background: In the last years multidrug resistant (MDR) bacteria have emerged as major nosocomial pathogens. Data about the epidemiology of this situation in liver transplantation is scarce.
Objective: To study the epidemiology of infections caused by MDR bacteria in the first 30 days after transplantation, the risk factors associated to them and their relation to mortality.
Methods: Since January 2004 to December 2005, there were 115 consecutive adult liver transplant procedures. Information related to pretransplant, perioperative, follow-up variables as well as infection and rejection episodes from recipients was prospectively collected in an online database within the Spanish Research Network for Study of Infection in Transplantation (RESITRA). A descriptive study of MDR bacterial infection as well as a risk factor analysis of its acquisition and relation to mortality was performed.
Results: Globally the incidence of infection was 61.7% (71 episodes out of 115 transplants). By type of infection: bacterial 78.9% (56 episodes), viral 11.3% and fungal 9.9%. The incidence of MDR bacteria was 10.7% (6 episodes). The microorganisms isolated were: methicillin-resistant *Staphylococcus aureus* (3 episodes), *Pseudomonas aeruginosa* resistant to ≥ three different antibiotic groups (2 episodes) and extended-spectrum beta-lactamase-producing *Escherichia coli* (1 episode). There was no relation between adquisition of resistance and the different risk factors analyzed. There was no death related to bacterial infection the first month after liver transplantation.
Conclusion: The incidence of infection caused by MDR bacteria is a concerning issue in liver transplantation (10.7%) but, initially, this type of infection seemed not related to a higher mortality.

Abstract# 522 Poster Board #-Session: P115-III

RISK FACTORS FOR METHICILLIN-RESISTANT *STAPHYLOCOCCUS AUREUS* INFECTION IN LIVER TRANSPLANTATION. Maristela P. Freire, Patricia R. Bonazzi, Estela R. R. Figueira, Rinaldo S. Fochaccia, Telesforo Bacchella, Marcel C. C. Machado, Edson Abdala. *[1]Liver Transplantation Service, University of São Paulo, São Paulo, Brazil; [2]Infectious Diseases Department, University of Sãoo Paulo, São Paulo, Brazil.*
The aim of this study was to analyze risk factors for Methicillin-resistant *Sthaphylococcus aureus* (MRSA) infection after liver transplantation (LT).
Methods: We analyzed the LT performed from January/2002 to August/2005. Data were obtained from medical records of receptors and donor's forms. We excluded patients that underwent living-donor LT, livers from patients with familial amyloidosis in domino transplantation and patients who died in less than 48 hours after LT. The infectious diagnoses were made following the CDC criteria. Analysis of risk factors was performed using Chi-square test or Fisher's exact test for categorical variables and Mann-Whitney for continuous variables; multivariate analysis was made by stepwise logistic regression. The variables analyzed were: donor's features, surgical factors, clinical and laboratorial findings of the receptor and postoperative factors. **Results:** A total of 130 LT were conducted in the period; 26 were excluded. Infections were detected in 59 transplants; *Staphylococcus aureus* corresponded to 19% (18 infections) of the microorganisms isolated, and 94% of strains were Methicillin-resistant. The most frequent MRSA site infection was surgical site (83%), with most cases involving organ/space (79%). The risk factors identified in the univariate analysis were: donor creatinine level, herpes simplex infections in receptor and donor norepinephrine use. The multivariate analysis identified norepinephrine use by donor (p0.02) and units of blood transfusion in transplant (p0.04) as risk factors for MRSA after LT. **Conclusion:** Large amount of blood transfusion is associated to an increase risk of surgical site infection in LT, which in our study was the most frequent site of MRSA infection. The use of norepinephrine was previously identified as risk factor for donor bacteremia, and this study detected that this information can also be associated to receptor infection.

Abstract# 523 Poster Board #-Session: P116-III

HISTOLOGIC BENEFIT OF LONG TERM RIBAVIRIN MONOTHERAPY IN PATIENTS WITH HCV RECURRENCE AFTER LIVER TRANSPLANTATION. Thierry Bizollon[1], Pierre Pradat[1], Christian Ducerf[1], Christian Trepo[1]. *[1]Hepatology Unit and Liver Transplantation Department, Hopitaux du Nord HCL, Lyon, France.*
Aims: The treatment of recurrent hepatitis C with IFN-based regimens has become widely accepted as safe and can lead to sustained virological response of hepatitis C virus. However patients who are non responders to IFN- or who have contra-indications for this therapy are exposed to the risk of progression of graft disease to cirrhosis. The histologic benefit of ribavirin as a single agent is controversial,and in most of previous studies the duration of ribavirin monotherpay is often not sufficient. We conducted a retrospective study to explore the efficacy of long term ribavirin monotherapy in 11 patients with HCV recurrent hepatitis treated at our center since 1997.
Methods: 11 patients with HCV recurrence treated with ribavirin monotherapy were consecutively included in the study. Patients received oral ribavirin (600-1000 mg daily) for a mean duration of 48 months. Treated patients were compared to control group (n=9) having similar characterictics just before the enrolment period. All patients received tacrolimus as immunosuppressive therapy. We did not observed a significant decrease of mean ALT value from 145 to 103 IU/L in patients treated with ribavirin (versus 124 to 132 in control group of patients). HCV RNA level was not different between inclusiona nd end of study.The comparaison of pre-treatment and on-treatment biopsy (after 48 months) showed a significant decrease in the activity Metavir score in 88% of patients with ribavirin vs 11% in control group (p=0.03) .We observed a nonsignificant trend for a decrease in the fibrosis score (38% of patients with ribavirin had a stable or imptovement of fibrosis score vs 0% in control group, p 0.08)). Using a multivariate logistic regression analysis, improvement of the activity score at M48 was significantly associated with ribavirin treatment independently of gender, baseline viral load and baseline ALT level (OR=164, 95% CI 1.54-17484; p=0.03).Therapy was well tolerated although three patients had to stop ribavirin because of anemia despite the use of erythropoietin in two patients.
Conclusion: Our data show that ribavirin monotherapy may represent an alternative therapy in transplant patients who have contraindications for combination therapy, but prolonged treatment courses may be necessary to prevent progression of disease.

Abstract# 524 Poster Board #-Session: P117-III

OCCURRENCE OF OCCULT HEPATITIS B VIRUS INFECTION IN HEPATITIS C CIRRHOTIC LIVER EXPLANTS WITH OR WITHOUT HEPATOCELLULAR CARCINOMA. Regiane S. S. M. Alencar[1], João Renato R. Pinho[3], Flair J. Carrilho[1], Ivete M. V. G. C. Mello[3], Evandro S. Mello[2], Venancio A. F. Alves[2], F. M. Malta[3], Michelle M. S. Gomes[3], R. Sitnik[3]. *[1]Gastroenterology, University of São Paulo School of Medicine, São Paulo, Brazil; [2]Pathology, University of São Paulo School of Medicine, São Paulo, Brazil; [3]Virology, Adolfo Lutz Institute, São Paulo, Brazil.*

This study evaluated serum and liver explant tissue samples from 50 patients with liver cirrhosis due to hepatitis C virus (HCV) that underwent liver transplantion at the Hospital das Clínicas – University of São Paulo School of Medicine , divided into two groups: Group 1 (33 cirrhotic patients due to HCV) and Group 2 (17 cirrhotic patients due to HCV with hepatocellular carcinoma – HCC). Our aim was to study the occurrence of occult hepatitis B virus (HBV) infection in cirrhotic patients due to HCV with or without HCC through the molecular study of HBV DNA in the serum, tumoral liver tissue and non tumoral liver tissue by the polymerase chain reaction (PCR) using in house (gene C)and real time PCR (gene S). All the patients were HBsAg negative, had previous serum samples frozen at -20ºC and explanted liver tissue in paraffin, and did not present concomitant liver diseases. The following variables were collected: gender, age, biochemical and coagulation laboratory tests and HBV serology (HBsAg, anti-HBc total, anti-HBs). Among the clinical data, ascites and encephalopathy were collected for the Child and MELD prognostic indexes. In the explanted liver tissue the Ishak's Score, The Brazilian Society of Pathology and Hepatology Classification for chronic hepatitis, and Edmondson and Steiner Classification for HCC were applied. All samples with or without tumoral liver tissue and serum were negative for HBV DNA using in house PCR. By the real time PCR, only one case from Group 2 was HBV DNA positive in serum (male, 66 years old, isolated anti-HBc total positive and HCC). In the tumoral and non-tumoral liver tissues, there were two indeterminate HBV DNA cases among Group 2 patients as the internal standard (beta actin) did not amplified. All samples for Group 1 patients were negative for HBV DNA using both techniques. In conclusion, our study has shown the extremely low occult hepatitis B virus infection among the HCV cirrhotic patients with or without HCC, possibly associated to the low HBV past infection among the Southeastern Brazilian population.

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Abstract# 525 Poster Board #-Session: P118-III

CLINICAL OUTCOME AFTER LIVING DONOR LIVER TRANSPLANTATION IN PATIENTS WITH HEPATITIS C VIRUS RELATED CIRRHOSIS. Jeong-Ik Park[1], Sung-Gyu Lee[1], Shin Hwang[1], Kwang-Min Park[1], Ki-Hun Kim[1], Chul-Soo Ahn[1], Deok-Bog Moon[1], Tae-Yong Ha[1], Dong-Hwan Jung[1], Bum-Soo Kim[1], Kwan-Woo Kim[1], Hi-Sung Kim[1], Kyung-Hun Ko[1]. *[1]Department of Surgery, Division of hepatobiliary Surgery and Liver Transplantation, University of Ulsan, College of Medicine and Asan Medical Center, Seoul, Republic of Korea.*

(background)

HCV-related cirrhosis is an increasingly frequent indication for liver transplantation. However, HCV recurrence is universal and immediate following LT, and endanger both graft and patient survival. We investigate the frequency of post-transplant recurrence of HCV infection, the patient-graft survival and analyze the responses of ribavirin and interferon therapy in the patients with recurrent HCV infection after LDLT.

(patients and methods)

We retrospectively reviewed clinical outcomes for 39 HCV-related cirrhosis patients who underwent LDLT at Asan Medical Center between August 1998 and June 2006. The median follow-up period was 17.6 months. In this study, the diagnosis of recurrent HCV was made on the basis of increased transaminases, serum HCV RNA levels greater than 10 million IU/mL, because we didn't perform protocol liver biopsy.

(Results)

HCV recurrence was seen in 26 of 39 LDLT patients(66.6%). 86.7% of recurrence occurred within first postoperative year. Antiviral treatment was used for all patients with recurrence of HCV after LDLT. 1 of 12 patients given ribavirin alone and 7 of 14 patients given combination therapy with pegylated interferon alpha-2a plus ribavirin became HCV RNA negative and are persistently negative during follow-up period. Our data indicate that there is no siginificant factor influencing HCV recurrence except recipient age. The 2-year patient survival for HCV patients with HCC and without HCC was 77.4% and 80.3%, respectively. The graft survival was 77.4% and 66.9%, respectively. No patient was died due to HCV recurrence during median follow-up of 17.6 months.

(conclusions)

Aggressive therapy in the early post-transplantation period with interferon plus ribavirin therapy might improve the outcome of recurrent HCV infected patients after LDLT.

Abstract# 526 Poster Board #-Session: P119-III

ORTHOTOPIC LIVER TRANSPLANTATION IN PATIENTS WITH HBV. Claudio A. Marroni[1], Alex Schwengber[1], Christina G. S. Fraga[1], Camila Z. Benfica[1], Douglas Simonetto[1], Alfeu F. Junior[2], Guilhermo Kiss[2], Thomaz G. Filho[2], Mario H. Meine[2], Ian Leipnitz[2], Eduardo Schlindwein[2], Maria L. Zanotelli[2], Ajacio B. M. Brandao[1], Guido Cantisani[2]. *[1]Internal Medicine, Fundação Faculdade Federal de Medicina de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil; [2]Grupo de Transplante Hepático, Complexo Hospitalar Santa Casa de Porto Alegre, Porto Alegre, Rio Grande do Sul, Brazil.*

Background: The first results of OLT in patients with cirrhosis from the HBV were very unsatisfactory due to the high recurrence. The introduction of HBIG, greatly improved the results of OLT carried out in this group of patients. **Aims:** Perform a retrospective analysis of OLT in HBV positive cirrohtic patients, at CHSCMPA hospitals. **Patients and methods**: The records of 50 HBV transplant patients were checked in CHSCMPA between 1991 to 2006. **Results:** Out of the 600 OLT performed, in 53 of them (8,83%), the HBV was responsible for the recommendation of the transplant (50 patients, 3 retransplants). There were 7 cases of Fulminant Hepatitis and 43 cases of cirrhosis. The hepatocellular carcinoma was present in 18,6% of native organs. The use of HBIG was uniform in two groups: MS1 (guideline proposed by the Ministry of Health considered a trans-operational dose of 3000UI and low doses after the surgery) with 13 patients; the other group, MS2 (O UI of HBIG in trans-operation and lower doses after the surgery), of around 800UI per month) with 16 patients. The remaining 14 patients were composed of a heterogenic group who received very varied trans-operational doses and initially doses in accordance with the level of anti-HBs, but who now receive HBIG in accordance with the Ministry of Health recommendations. The levels of viral recurrence were respectively 23%, 0% and 71,42% in the three groups. The histological recurrence was found in 30%, 0% and 57,14%, respectively. Resistence to Lamivudine was found in 5 patients.The survival rate of transplant patients with cirrhosis is 88,37% in 1 year and 81,39% in 5 years. Transplant patients for fulminant hepatitis have a survival rate of 57,14% in 1 and 5 years.**Conclusion:** The patients with fulminant hepatitis HBV+ have a higher immediate post-operative death rate; there is a long wait for doners. The chronic HBV+ have excellent outcomes and low to moderate viral recurrence. Patients, who received HBIG, in accordance to the latest guideline, there is still no evidence of viral or histological recurrence.

Abstract# 527 Poster Board #-Session: P120-III

CHRONIC HEPATITIS C RECURRENCE AFTER LIVER TRANSPLANTATION. Sílvia V. Campos[1,2], Patrícia R. Bonazzi[1,2], Edson Abdala[1,2], Daniela R. M. Gotardo[1], Leonardo S. Silva[1], Rodrigo S. Honorio[3], Evandro S. Mello[3], Estela R. R. Figueira[1], Venancio A. F. Alves[3], Telésforo Bacchella[1], Marcel C. C. Machado[1]. *[1]Liver Transplantation Service, University of São Paulo Medical School, São Paulo, SP, Brazil; [2]Infectious Diseases, University of São Paulo Medical School, São Paulo, SP, Brazil; [3]Pathology Division, University of São Paulo Medical School, São Paulo, SP, Brazil.*

The study aimed to describe the recurrence of chronic hepatitis C after liver transplantation (LT). **Methods:** Retrospective analysis of all 152 patients who underwent liver transplantation between Jan/2002 - Apr/2006 and review of liver biopsies of the patients with cirrhosis due to hepatitis C virus (HCV) before LT. Patients with positive HCV RNA pre-transplant, without co-morbidities, minimum follow-up of 6 months and at least one liver biopsy after this period were included. **Results:** Forty-nine patients with HCV-cirrhosis underwent LT in the period; 25 fulfill inclusion criteria. Nineteen patients were men (19/25-76%) and mean age was 49.7 years. From the 18 available HCV genotype exams, 10 were genotype 1. Median HCV RNA

was 297.658UI/ml before LT and greater than 850.000UI/ml after LT. All patients developed viral recurrence in a mean period of 7.04 months post-LT (median 3.93, range 0.6–26.8). Twenty patients (80%) had histological diagnosis of chronic hepatitis C after a mean period of 12.8 months (median 9.9, range 2.76-48.5). Eight patients (8/20-40%) developed recurrence before 6 months, 7 between 6 and 12 months and 5 after the first year pos-LT. All 11 patients who presented an acute rejection episode developed recurrence of chronic hepatitis C. Cytomegalovirus disease was observed in 4 patients and recurrence of hepatitis was also seen in 3 of them. Median fibrosis grade was 2 (range 0–4) and periportal inflammatory infiltrate was 2 (range 1–4). Cirrhosis was present in only one liver biopsy **Conclusion:** After our protocol for scheduled liver biopsies was established (yearly biopsy), we noticed an increased on chronic hepatitis C diagnosis. Nevertheless, in this present study, we observed a high prevalence of early chronic hepatitis C recurrence, especially during the first 6 months after LT. Earlier biopsies for recurrence vigilance might be considered. Studies evaluating risk factors for severity of recurrence should be conducted.

Abstract# 528 Poster Board #-Session: P121-III

SPECIFIC ANTI-HCV IMMUNE RESPONSES AFTER LIVER TRANSPLANTATION IN HIV/HCV CO-INFECTED PATIENTS. A. Samri[1], A. M. Roque-Afonso[2], O. Beran[1], C. Feray[2], E. Dussaix[2], D. Samuel[2], B. Autran[1], J. C. Duclos-Vallee[2]. *[1]Unite 543 Cell Immunology, INSERM UPMC AP-HP, Paris, France; [2]Unite 785, INSERM Universite Paris Sud 11, Villejuif, France.*

Liver transplantation (LT) in HIV/HCV co-infected patients is successful. Hepatitis C reinfection is the major cause of recipient mortality. The aim of this work was to evaluate the immune responses against HCV before and after LT in HIV/HCV co-infected patients.

Sixteen patients with HIV viral load (VL)< 50 copies/mL and CD4 counts>200/mm3 receiving a graft for HCV-cirrhosis were included. Patients were monitored for HCV and HIV VL, liver histology and immune responses in pre- and post-transplantation course (2 years). T cell responses were evaluated in blood by IFN-γ-ELISpot assays using recombinant (r) proteins: core, NS3, and NS4 (HCV), HIV-1-p24 and CMV, PPD and candidine, and 16 pools of HCV-peptides (core, NS3, and NS4) and 1 pool of HIV-1-p24-peptides.

Before LT and 2 years after, median CD4 counts and HCV-VL were 249 and 208/mm3 and 5.73 and 6.40 log IU/mL. During the follow-up, T-cell responses against opportunistic antigens were detected in 8/16 patients with median number of cells from 80 to 403 SFC/106 PBMC. 12/16 patients had responses against rHIV-1-p24 protein with a median frequency of 105 SFC/106 PBMC. HCV-specific CD4 T cell responses were detected in 4 patients and directed against core in 3 patients (from 67 to 187 SFC/106 PBMC) and NS3 and NS4 in the fourth patient (87 and 50 SFC/106 PBMC). Ex vivo CD8 responses against HIV-1-p24 pool were observed in 7/11 patients with a median frequency of 168 SFC/106 PBMC whereas responses against HCV-peptides were detected in 1 patient and directed against core (54 SFC/106 PBMC). In 3 patients with no ex vivo CD8 response, in vitro HCV-peptide stimulation lead to generate responses directed against core in 1 patient (1940 SFC/106 PBMC) and NS3 in 3 patients (from 180 to 1020 SFC/106 PBMC). The seven patients with anti-HCV responses had F0(n=4) or F1(n=3) (METAVIR) score at 2 years. 2/7 had undetectable HCV-VL. In patients with no anti-HCV response, F3/F4 scores were observed and 3 patients had fibrosing cholestatic hepatitis.

Our results demonstrate that immune responses against HCV modulate the severity of recurrence of HCV infection after liver transplantation in HIV/HCV co-infected patients.

Abstract# 529 Poster Board #-Session: P122-III

PERITONEAL IMPLANTATION OF CRYOPRESERVED ENCAPSULATED PORCINE HEPATOCYTES IN RATS WITHOUT IMMUNOSUPPRESSION: VIABILITY AND FUNCTION. Raffaele Cursio[1], Edoardo Baldini[1], Georges De Sousa[2], Andrea Margara[1], Jiri Honiger[3], Marie-Christine Saint-Paul[4], Pascale Bayer[1], Vincent Raimondi[1], Roger Rahmani[2], Jean Mouiel[1], Jean Gugenheim[1]. *[1]Laboratoire de Recherches Chirurgicales, Université de Nice Sophia Antipolis, Nice, France; [2]Laboratoire de Pharma-Toxicologie, INRA, Antibes, France; [3]INSERM U 402, Université de Paris V, Paris, France; [4]Service d'Anatomo-Pathologie, Université de Nice Sophia Antipolis, Nice, France.*

Background. Encapsulated hepatocyte transplantation is a promising approach to cell transplantation without immunosuppression as an alternative to whole organ liver transplantation. The aim of this study was to assess viability and function of encapsulated cryopreserved porcine hepatocytes implanted intraperitoneally in rats without immunosuppression.

Materials and Methods. Porcine hepatocytes were isolated by collagenase digestion method, encapsulated in AN69 polymer and cryopreserved at -196 degrees Celsius for 1 month. Four groups were created: Group 1 (n=10), cryopreserved encapsulated porcine hepatocytes cultured in albumin-free medium for 10 days; Group 2 (n=10), cryopreserved encapsulated porcine hepatocytes implanted in rat peritoneum without immunosuppression for 1 month, and cultured for 10 days after explantation; Group 3 (n=10), freshly encapsulated porcine hepatocytes cultured for 10 days; Group 4 (n=10), freshly encapsulated porcine hepatocytes implanted in rat peritoneum without immunosuppression for 1 month, and cultured for 10 days after explantation. Hepatocyte viability, liver enzymes release, urea and albumin production were measured. Hepatocyte function was assessed by measuring EROD enzyme activity in presence of specific cytochrome P450 inducers.

Results. There was no significant difference in urea synthesis between the 4 groups. Albumin synthesis was significantly decreased in group 2 compared to other 3 groups ($p<0.01$). There was no significant difference in AST, ALT and LDH concentrations in culture medium ($p>0.05$). Encapsulated cryopreserved porcine hepatocytes explanted from rat peritoneum after 1 month appeared morphologically viable and their ultrastructure was preserved. Hepatocyte function was maintained.

Conclusions. Long-term cryopreservation of porcine hepatocytes results in retention of their biological activity and in significant viability when transplanted into rat peritoneum without immunosuppression. Cryopreserved hepatocytes were as efficient as fresh hepatocytes.

Abstract# 530 Poster Board #-Session: P123-III

TRIMETAZIDINE PROTECTS EFFECTIVELY STEATOTIC LIVERS PRESERVED IN IGL-1 SOLUTION. Amine Zaouali[1], Ismail B Mosbah[1], Isabel Fernandez Monteiro[1], Hassen Ben Abdennebi[1], Olivier Boillot[2], Silvina Ramella[3], Joan Rosello Catafau[1], Carmen Peralta[1]. *[1]Liver Unit, Instituto de Investigaciones Biomedicas de Barcelona, CSIC-IDIBAPS, Barcelona, Spain; [2]Hopital Edouard Herriot, Lyon, France; [3]Institut Georges Lopez, Saint Didier au Mont d'Or, France.*

Chronic organ-donor shortage has led to the acceptance of steatotic livers for transplantation, despite of the higher risk of graft dysfunction or nonfunction associated with ischemic preservation period of these organs. Recently, a new Institute Georges Lopez (IGL-1) solution has been successfully used to preserve steatotic livers. The present study evaluated the effects of trimetazidine (TMZ), an anti-ischemic drug, at 10^{-6} M when it is added to IGL-1 preservation solution.

Steatotic (obese [Ob]) and nonsteatotic (lean [Ln]) livers from Zücker rats (n = 16, 8 Ln and 8 Ob) were preserved for 24 hours at 4°C in IGL-1 solution with and without TMZ, respectively, and then perfused ex vivo for 2 hours at 37°C. Hepatic injury (AST/ALT) and function (bile production), and energy metabolism changes were measured. In addition, factors potentially involved in the susceptibility of steatotic livers to ischemia-reperfusion injury, such as mitochondrial damage, were evaluated by electronic microscopy.

Steatotic and nonsteatotic livers preserved in IGL-1 enriched with TMZ (IGL-1+TMZ) showed lower transaminases, and higher energy metabolism and bile production levels than IGL-1 solution-preserved livers. Electronic microscopy findings demonstrated that IGL-1+TMZ protected more effectively than IGL-1 against mitochondrial damage. At the end of reperfusion, AST levels in steatotic livers were 202 ± 10 U/L in IGL-1 vs 160 ± 11 in IGL-1+TMZ ($p<0,05$). ALT levels in steatotic livers were 85 ± 7 U/L in IGL-1 vs 61 ± 5 in

IGL-1+TMZ ($p<0,05$). Bile was increased in livers preserved in IGL-1+TMZ when compared to IGL-1 (3,44 ± 0,38 vs 5,44 ± 0,34 µL/min/g, $p<0,05$). Adenine nucleotides were preserved when TMZ was used (1122 ± 60 vs 380 ± 25 pmol/100mg wet wt, $p<0,05$).
In conclusion, IGL-1+TMZ solution provided steatotic livers with better protection against the deleterious effects of cold ischemia-reperfusion injury than did IGL-1 solution. This beneficial effect is associated with a better protection of mitochondria.

Abstract# 531 Poster Board #-Session: P124-III
MICRODIALYSIS AS A TOOL FOR MEASURING ISCHEMIA-REPERFUSION INJURY IN AN ISOLATED REPERFUSION MODEL OF PIG LIVER – IS IT WORTH WHILE? Frank Ulrich[1], Peter Fellmer[1], Michael Meißler[2], Volker Unger[2], Sandra Höfer[1], Andrea Preuss[1], Juliane Unger[2], Birgit Rudolph[3], Christian Grosse-Siestrup[2], Peter Neuhaus[1], Johann Pratschke[1]. *[1]General, Visceral and Transplantation Surgery, Charité, Campus Virchow Clinical Centre, Berlin, Germany; [2]Comparative Medicine and Experimental Animal Science, Charité, Berlin, Germany; [3]Institute of Pathology, Charité, Berlin, Germany.*
Purpose: Beside poor graft quality ischemia-reperfusion injury is a major cause of acute liver dysfunction or failure after liver transplantation. The aim of this study was to examine whether monitoring metabolic changes with microdialysis is an appropriate tool correlating with other markers of liver function and histology in an isolated reperfusion model.
Methods: Pig livers were flushed with either Universitiy of Wisconsin solution (UW, n=6) or serum protein solution with high immunglobulin content (SPS, n=6). After 14-h cold storage, an isolated reperfusion of the livers with donor blood was performed for a period of 180 min. Collection of blood, bile and microdialysis samples started after 30 min. Several liver enzymes including aspartate aminotransferase (AST) and lactate dehydrogenase (LDH), cholinesterase (PCHE), free hemoglobin (fHb) and other parameters were then evaluated in periods of 30 min. Microdialysate was collected at the same time and analyzed for lactate, pyruvate, glucose and glycerol. Liver biopsies for light (LM) and electron microscopy (EM) were taken after cold ischemia and at the end of reperfusion, samples were blinded and examined by an experienced pathologist.
Results: Comparing preservation with UW and SPS, most of the enzyme courses showing hepatocyte damage and bile production are favourable in the UW group. Mean AST and LDH after 120 min of reperfusion are 329 vs. 1141 U/l and 353 vs. 987 U/l. Contradictory microdialysis results show a significantly higher lactate and glycerol level in the UW group at the beginning of reperfusion, which is usually postulated to reflect ischemic damage. Surprisingly SPS-perfused pig livers show markedly lower fHb-levels, which might be a sign for better endothelial protection. This assumption is not supported by histological score, where the UW group demonstrates a slightly better result in LM and EM.
Conclusions: Although a good tool for monitoring ischemia-reperfusion injury in theory, microdialysis was not able to discriminate the severity of ischemic lesion in this investigation.

Abstract# 532 Poster Board #-Session: P125-III
LIVER HYPERACUTE REJECTION IN DOG-TO-PIG AND PIG-TO-DOG MODEL OF MULTIVISCERAL XENOTRANSPLANTATION. Flavio H. F. Galvao, Eduardo Pompeu, Eduardo K. Mory, Rafael M. Santos, Telesforo Bacchella, Marcel C. Machado. *[1]Transplant and Liver Surgery, University of Sao Paulo, Sao Paulo, Brazil.*
Xenotransplantation is a potential option for organ shortage; nevertheless, hyperacute rejection is one of the major limitations of this procedure. There is lack of pre-clinical model to study liver hyperacute rejection in multivisceral xenotransplantation. In this report, we describe an original method to investigate liver hyperacute rejection after multivisceral xenotransplantation. **Method -** Distal esophagus, stomach, small bowel, ascending colon, liver, pancreas, spleen, epiploon and kidneys were in block harvested from pigs and dogs, and heterotopically transplanted into dogs and pigs respectively. Pig-to-pig and dog-to-dog multivisceral allotransplantation composed control groups. Serial analysis and biopsies were performed to observe histological changes. Autopsy was performed three hours after graft reperfusion (experimental end point) to assess liver and the other composite graft histology. **Result.** All recipients survived throughout the experimental end point. Pig-to-dog and dog-to-pig combination achieved similar outcome. Grafts achieved normal aspect immediately after vascular unclamping; but signs of hyperacute rejection were evident 11 to 19 minutes after reperfusion (median of 14 minutes) and critically damaged all organs. Medium to severe degree of hyperacute rejection in every graft tissues was observed at the experimental end point. Bowels, mesenteric lymph node, liver, spleen, kidney and pancreas were the most injured organs respectively. In the liver, we observed vascular alterations enclosed the main features of the liver lesions with transmural fibrinoid degeneration, necrosis, subendothelial hemorrhage, edema and vascular congestion. These features involved not only sinusoids, but also the centre lobular and portal vasculature and were more intense in sinusoids, and zones II and III of hepatic lobule, where diffuse hemorrhage was also evident. Allogeneic dog-to-dog and pig-to-pig multivisceral allotransplantation showed absence of hyperacute rejection and minimum occurrence of reperfusion injury. **Conclusion** – This simple model surmounts technical obstacles precluding studies on xenotransplantation and may ultimately spread researches assessing liver hyperacute rejection in multivisceral transplantation.

Abstract# 533 Poster Board #-Session: P126-III
EVALUATION OF PHYSICAL PERFORMANCE IN HEPATIC TRANSPLANTATION PRE-PHASE PATIENTS. Luciana Elena S. F. Machado, Alexandre M. S. Carvalho, Sara Lucia S. Menezes. *[1]HUCFF, UFRJ, Rio de Janeiro, RJ, Brazil; [2]HUCFF, UFRJ, Brazil; [3]HUCFF, UFRJ, Rio de Janeiro, Brazil.*
The liver has many functions, like degradation of metabolites, protein synthesis, glyconeogenesis, storage of glycogen and others. Diverse causes lead to chronic hepatic damage, like hepatitis, alcohol, metabolic alterations, and irreversible structural/functional changes, a condition called cirrhosis. This leads to many complications, such as ascitis, hepatic encephalopathy, infections, muscle atrophy, leg edema, fatigue. The definitive treatment for these patients is the realization of hepatic transplantation (Gayotto, 2001). However, the wait-line renders long waits. This great amount of time in inactivity due to the disease favors morbid conditions, like malnutrition (Riggio, 2003) and physical unconditioning, both interfering in daily-life tasks and thus reducing the quality of life (Leitão, 2003). The *six minute walk test* (6MWT) is a way to assess the physical capacity of the patient. It is a useful tool in practice that reflects the amount of effort a person can tolerate and that correlates with daily-life activities. The 6MWT has been indicated to measure functional performance in obstructive pulmonary disease, heart failure, neuromuscular infirmities, and finally *before* and *after* transplantation surgeries (Enright, 2003). The aim of this work is to evaluate the physical capacity and the degree of functional performance of patients in the hepatic transplantation pre-phase. Sixty patients in top-of-the-list situation for liver transplantation from both genders, with age varying between 18-70 years with media 54.6 years, were assessed by the 6MWT in Hospital Universitário Clementino Fraga Filho (HUCFF), Rio de Janeiro. The predicted values of distance (6MWD) for healthy persons are calculated through the Enright-Sherril equations (Enright and Sherril, 1998). These give a reference that can be used to compare the performance of patients with the performance of overall healthy population. About 70% of the patients performed the 6MWT and didn't acheve the predicted value of distance. The clinical and mathematical assessment of the patients revealed major functional deficit. This demonstrates the necessity and well-founded indication of physical conditioning for maintenance and improvement of quality of life in these patients waiting for liver transplantation.

Abstract# 534 Poster Board #-Session: P127-III
GENE EXPRESSION PROFILING IN LIVER TRANSPLANT RECIPIENTS. Laila Hassan[1], Pablo Bueno[1], Carmen Olmedo[1], Ana-Maria Comino[1], Carlos Cano[3], Ignacio Ferron-Celma[1], Karim Muffak[2], Mario Serradilla[2], Ana Garcia-Navarro[2], Alfonso Mansilla[2], Jesus Villar[2], Daniel Garrote[2], Armando Blanco[3], Jose-Antonio Ferron[2]. *[1]Experimental Surgery Research Unit, Virgen de las Nieves University Hospital, Granada, Spain; [2]General and Digestive Surgery Department, Virgen de las Nieves University Hospital, Granada, Spain; [3]Artificial Intelligence Department, University of Granada, Granada, Spain.*
PURPOSE: Microarrays study of gene expression profiling in liver transplant recipients.
METHODS: The study has been developed in liver transplant recipients with alcoholic cirrhosis diagnoses (6 men) and healthy volunteers (6 men) as control group. Written informed consent was obtained from the patients' relatives, and the study protocol was approved by the local Clinical Research (Ethics) Committee. Peripheral blood samples were obtained before (T0) and 7

days after liver transplantation (T7d) using PAXGene Blood RNA tubes (Becton Dickinson). RNA was purified with PAXGene Blood RNAkit and quality tested (28S/18S ratio>1.5) in a bioanalyzer Experion (BioRad). From each participant microarrays were done in duplicate using 2 µg of cRNA. After reverse transcription, cRNAs were labelled with Cy5Streptavidine. Hybridization of 20,000 human genes CodeLink bioarrays (General Electric Healthcare) was performed overnight at 37ºC (Innova 4080, NewBrunswick). Arrays were read with a GenePix 4000B laser scanner (Axon Instruments) and quantified and normalized with CodeLink Software (General Electric Healthcare).

RESULTS: At T0, the expression of 351 genes increased when compared to healthy volunteers: MAPKinase4; PhospholipaseC; CD4ReceptorLymphocytesT; ProstaglandineEReceptor3; Coagulation factor IX; Glucose6phosphate dehydrogenase; TNFReceptor2; Alcohol Dehydrogenase1A; Hepatocyte Nuclear Factor4; Phospholipase2A; UDPglucose ceramide glucosyltransferase2; glutathione peroxidase (>2-fold, $p<0.05$). At T7d, the expression of 533 genes increased when compared to T0: NicotinamideNmethyltransferase; Uridinphosphorilase; Thioredoxin; Cyclindependent kinase5; Caspase1; NFκβ inhibitor; IFNγ receptor2; Toll-LikeReceptor2; Chemokines CXCR4 and CXC16; MAPKinase1; MAP KinaseKinase1; Urokinase; Cathepsin S, B and D; CytochromeCsubunitVIIb; Caspase6; CRADD; MnSOD; GlutathioneSTransferase (>2-fold, $p<0.05$)

CONCLUSION: Data presented in this study identifies genes influenced by an early response (7 days) to liver transplantation.

Abstract# 535 Poster Board #-Session: P128-III

ANALYSIS OF HEMODYNAMICS ALTERATIONS DURING ORTHOTOPIC LIVER TRANSPLANTATION IN PIGS.

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Background: Exhaustive training is undertaken on an animal model in order to acquire the expertise required for liver transplant. The pig has considerable anatomic similarities to man, as well as a comparable physiological and hemodynamic sensitivity. The technique of a liver transplant in pigs provides an experimental model for research. **Aim:** Describe the hemodynamics alterations during orthotopic liver transplant in pigs.**Methods:** Forty-four young female (donor and recipient) Landrace pigs, weighting between 32 and 38 Kg (mean 34.2 Kg) were subjected to experimental protocol. The right carotid artery was cannulated (recipient) for measurement of mean systemic arterial pressure and for systemic arterial sampling. The left external jugular vein was used for the porto-iliac-jugular shunt and the right external jugular vein was cannulated for measurement of central venous pressure. Hemodynamic and metabolic changes during the procedure were monitored. The following parameters were recorded during the surgery in preanhepatic phase, anhepatic phase and after revascularization with restoration of the blood flow to the heart: heart rate (HR), Blood gas analysis (CO_2-mmHg), (HCO_3 - mmol/L), basic excess value (mmol/L); Mean systemic arterial pressure (MAP-mmHg), central venous pressure (CVP-cmH_2O), pH, Na^-, K^+, Cl^-, Ca^+. **Results:** The hemodynamic and gasometrical data were analyzed in three different moments (table 1 and 2). **Conclusion:** Simplified technique of liver transplant was achieved and description of hemodynamic alterations was possible in pigs. Orthotopic liver transplantation in pigs provides an excellent experimental model for research in hemodynamics alterations.

Table 1. Clinical parameters in the recipient.

Hemodynamic	MAP	SO2	HR	CVP
Pre anhepatic	95.3	100	101.1	8.8
Anhepatic	85.4	95.2	119.8	9
Reperfusion	29.3	92.5	76	10

MAP: Mean systemic arterial pressure;SO2: O2 Saturation;HR: Heart rate;CVP: Central Venous pressure

Table 2. Blood gas analysis in the recipients.

Blood gas	pH	pO2	HCO3	BE	pCO2
Pre anhepatic	7.37	169	25.9	-2.2	49
Anhepatic	7.26	234	22.9	-4.1	51
Reperfusion	7.28	194	17.0	-9.9	44.7

Abstract# 536 Poster Board #-Session: P129-III

SAFETY OF AN INTRACRANIAL PRESSURE MONITOR IN PATIENTS WITH ACUTE LIVER FAILURE AND GRADE III/IV ENCEPHALOPATHY.

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PURPOSE: Intracranial pressure (ICP) monitoring has been recommended in patients with acute liver failure (ALF), but safety data are scarce. The purpose of our study is to evaluate the safety of an intraparenchymal ICP monitor placement in patients with ALF.

METHODS: Patients with ALF and grade III and IV encephalopathy underwent placement of a Codman Microsensor® ICP monitor in the non-dominant frontal lobe. Hemostasis protocols were used to achieve specific coagulation laboratory goals before monitor placement and for the duration of its use. Single-donor platelets were transfused to achieve a platelet count > 100 K/mm^3. Activated factor VII (40-90 mcg/kg IV) and fresh frozen plasma (FFP) were used to achieve a prothrombin time (PT) < 16 seconds. Cryoprecipitate was given to attain plasma fibrinogen levels of at least 100 mg/dL. Desmopressin (30 mcg/Kg IV) was administered to mitigate potential platelet dysfunction.

RESULTS: Seventeen women and five men were enrolled. Patients received 1.5+/-1.9 units (mean+/-S.D.) of single donor platelets, 4.0+/-1.7 units FFP, 6.0+/-7.0 units of cryoprecipitate, and 6.4+/-3.3 mg of activated VII prior to ICP monitor placement, achieving a platelet count of 156+/-90 K/mm^3, PT 11.8+/-1.7 secs, and fibrinogen 176+/-41 mg/dL. Hemostatic parameters for the duration of monitor use were: platelet count 96+/-58 K/mm^3, PT 16.4+/-3.9 secs, and fibrinogen 249 +/- 100 mg/dL. Outcomes were evaluable in 17 pts. Fourteen had no evidence of clinically important bleeding as evidenced by brain computerized tomography in ten, autopsy in two, and complete neurological recovery in two. Three patients had documented bleeds. Two patients had focal bleeding at the site of the monitor – one died from severe sepsis and one made a complete neurological recovery. Only one patient had clinically significant bleed – a subdural hematoma associated with seizures. In five pts the safety of ICP monitor placement was not evaluated because they died before a CT scan was performed, 3 from sepsis, one from abdominal compartment syndrome, and one from ischemic bowel.

CONCLUSIONS: ICP monitor placement is relatively safe in patients with ALF with careful attention to hemostatic support.

Abstract# 537 Poster Board #-Session: P130-III

ARTERIAL AMMONIA LEVEL DOES NOT CORRELATE WITH INTRACRANIAL HYPERTENSION IN PATIENTS WITH ACUTE LIVE FAILURE AND GRADE III/IV HEPATIC ENCEPHALOPATHY.

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High arterial ammonia (NH_3) levels have been implicated in the pathogenesis of cerebral edema in patients with acute liver failure (ALF). A previous study demonstrated that cerebral herniation does not occur in patients with ALF with arterial NH_3 levels below 150umol/L. Therefore it has been suggested that NH_3 might be used to identify patients with ALF who are at risk for intracranial hypertension (ICH).

PURPOSE: To determine the sensitivity, positive predictive value and negative predictive value of arterial NH_3 levels for the prediction of ICH in ALF pts with grade III and IV encephalopathy.

METHODS: Twenty-two patients were enrolled between May 2004 and October 2006. All pts received lactulose. The ICP was monitored using the Codman Microsensor® intracranial monitor. NH_3 levels were checked every 12 hours. ICH was defined as intra cerebral pressure ≥ 20mmHg for ≥ 20 minutes. SPSS 13.0 (SPSS Inc. Chi IL) was used for statistical analysis.

RESULTS: Seventeen women and five men with ALF were enrolled, with a mean age of 32.7+/- 10.3 years. The most common etiologies were acetaminophen (12 patients), and hepatitis A (3). Hepatitis B, anticonvulsant hypersensitivity, sulfonamide hypersensitivity and Wilson's disease occurred in one patient each, and the etiology was unknown in 3 patients. Our patients cumulatively underwent 3252 hours of ICP monitoring. Mean ICP monitor

duration was 147.8 +/- 143.3 hours. Eighty-two discrete ICH events were identified in 21 patients, with a mean ICP of 33 mmHg and a median duration of 60 minutes. The mean arterial NH3 level preceding the first ICH event was 185 +/- 71 umol/L (68- 337 umol/L). The prevalence of ICH in our population was 95%. At a cut point of 150 umol/L, the sensitivity of arterial NH3 to predict an episode of increased ICH was 62% with a 95% CI of 40.8 to 79.3. The positive predictive value was 93% and the negative predictive value was 0%.

CONCLUSIONS: Almost all patients with ALF and grade III or IV encephalopathy will develop ICH. Arterial ammonia levels add no useful information in determining the risk of ICH.

Abstract# 538 Poster Board #-Session: P131-III

OUTCOME OF ACUTE LIVER FAILURE WITH AND WITHOUT LIVER TRANSPLANTATION – AN INITIAL EXPERIENCE. Cyntia F. G. Viana[1], Tarciso Daniel S. Rocha[1], Fernanda P. Cavalcante[1], Jose T. Valenca Junior[1], Dirk Schreen[1], Douglas H. Campos Filho[1], Jose Huygens P. Garcia[1]. *[1]Centro de Transplante de Figado do Ceara, Federal University of Ceara, Fortaleza, Ceara, Brazil.*

OBJECTIVE: To evaluate the outcome of 17 patients with acute liver failure (ALF) and indication for liver transplantation (LTX) according to the King's College Criteria. METHODS: A retrospective review of the patients with ALF who received LTX (Group A; 10 patients) and those who didn't, because of no available liver donor (Group B; 7 patients). Both groups were analyzed according to overall survival rate. In Group A, were analyzed : sex and age; preoperative AST, ALT, serum bilirubin and INR levels; intraoperative red blood cells and plasma cells transfusion, ischemia time, operative technique and time; postoperative ICU and hospital stay, use of antibiotics and need of dialysis. RESULTS: Group A overall survival rate was 70% at a medium follow up of 23.3 months. In this group, there were 4 men and 6 women with average age of 23 years. The etiology of ALF included 3 patients with Wilson's disease, 1 with autoimmune hepatitis, 1 with drug-induced liver disease, and 5 had no identified cause. During the preoperative management, 5 patients received parenteral broad spectrum antibiotics, 3 were submitted to mechanical ventilation, and 2 needed dialysis. The average liver waiting time period was 3.4 days. The preoperative and intraoperative variables are described in table 1. The average ICU and floor transplant unit stay was 9.2 and 26 days respectively. During the post transplant management, 2 patients needed dialysis and all received parenteral broad spectrum antibiotics. One died during the LTX procedure from multi-organ failure and 2 died from sepsis in the intensive care unit (ICU). On the other hand, in Group B, all patients died while waiting for a liver donor. CONCLUSION: Our initial experience reinforces the therapeutic effectiveness of LTX in the setting ALF with indication for transplantation according to the King's College Criteria.

Group A Preoperative and Intraoperative Variables

AST (u/L)	403.5 (74 - 960)
ALT (u/L)	336.7 (20 - 740)
Serum Bilirubin (mg/dL)	24.8 (7 - 36)
INR	5.8 (2.4 - 8.9)
RBC Transfusion	3.3 (0 - 7)
Plasma Transfusion	6.2 (2 - 10)
Heat Schemia Time (minutes)	56.4 (10 - 90)
Total Schemia Time (minutes)	431.6 (320 - 625)
Operative Time (minutes)	462 (330 - 570)
Operative Technique (conventional / piggyback)	0 / 10

Abstract# 539 Poster Board #-Session: P132-III

RECOMBINANT FACTOR VIIa DURING LIVER TRANSPLANTATION FOR FULMINANT HEPATIC FAILURE? WHEN? J. Hudcova, R. Schumann. *[1]Department of Anesthesia, Tufts-New England Medical Center, Boston, MA, USA.*

Background: Fulminant hepatic failure (FHF) carries a high mortality rate, and patient management during rescue liver transplantation (LT) remains a challenge for the anesthesiologist and surgeon. Severe coagulopathy, a prominent feature of FHF, frequently requires massive intraoperative blood product transfusion (BPT). We report the successful preemptive use of recombinant activated Factor VII (rFVIIa) in 2 patients with hyperacute FHF (onset within 1 week).

Cases: 1. A 48 yo previously healthy woman, presented for LT with FHF due to sulfamethoxazole/trimethoprim, in acute oliguric renal failure and hepatic encephalopathy (HE). Despite BRT, coagulopathy immediately prior to LT was severe (INR 6.0, F 86, plts 53, aPTT 42.6). Before incision, platelets and cryoprecipitate were given, followed by a 90 mcg/kg rFVIIa bolus. BPT was continued intraoperatively; the estimated blood loss (EBL) was 2 L in a clinically 'dry' surgical field with near- normal coagulation values (INR 1.1, F 259, plts 131 and aPTT 40.9).

2. A 47 yo woman presented for LT in amoxicillin/clavulanate induced FHF with HE but no additional end-organ impairment. BPT did not improve her preoperative coagulopathy (INR 6.6, F 96, plts 344, aPTT 56.9) but was continued during LT. Prior to incision she received cryoprecipitate followed by a single 66 mcg/kg rFVIIa bolus. EBL was 1 L in a 'dry' surgical field with normalized coagulation parameters.

Significance: RFVIIa may reduce transfusion need during LT and transiently correct laboratory parameters. However, thrombo-embolism when using rFVIIa during LT for non-hyperacute FHF has been reported. Added to risk/benefit and cost considerations, safety, dosing and timing of rFVIIa in 'off-label' use such as in FHF remains to be determined. Both our hyperacute FHF patients were at a high risk for perioperative life-threatening non-surgical hemmorrhage from uncontrolled coagulopathy. Platelets and fibrinogen are substrates for thrombin action and critical for rFVIIa efficacy. We treated hypofibrinogenemia and thrombocytopenia prior to rFVIIa administration, resulting not only in laboratory improvement but clinically controlled hemostasis during all LT stages. In hyperacute FHF-associated severe coagulopathy, pre-incisional rFVIIa in the presence of sufficient fibrinogen and platelets may be promising for low blood-loss rescue LT.

Abstract# 540 Poster Board #-Session: P133-III

RESULTS OF CADAVERIC LIVER TRANSPLANTATION FOR HEPATOCELLULAR CARCINOMA. Marilia I. Leonardi[1], Ilka F. Boin[1], Cecilia Escanhoela[2], Luiz S. Leonardi[1]. *[1]Surgery, State University of Campinas Medical School, Campinas, SP, Brazil; [2]Pathology, State University of Campinas Medical School, Campinas, SP, Brazil.*

The aim of the study is to report the results obtained with OLT performed in cirrhotic patients with hepatocellular carcinoma.

Patients and Methods: From September 1991 to May 2006, 323 liver transplants were performed at our institution. Thirty-five patients with post-operative diagnosis of HCC were selected, 29 were male, with mean age of 49 years. The majority (21 patients) was transplanted due to hepatitis C related cirrhosis, 53% classified as Child-Pugh class C.

Results: Pre-transplant diagnosis of HCC was achieved in 20 patients (57%), i.e., HCC was incidentally diagnosed in 15 surgical specimen after hystopathological examination. Seven patients with pre-operative diagnosis of HCC received percutaneous ethanol injection. The mean number of lesions was 2.5 with mean diameter of 2 cm. Nodules were classified according to Edmondson-Steiner, 65.7% being graded as stage II. Satellite lesions were identified in 9 patients and capsular invasion present in 6 patients. The follow-up time ranged from 8 to 106 months. Post-transplant survival was 58% after 1 and 3 years and decreased to 51% at the fifth post-transplant year. No patient presented with HCC recurrence.

Discussion: Hepatocellular carcinoma recurrence after liver transplantation was not observed in our experience and did not determine mortality after transplantation.

Late Breaking Poster Abstracts

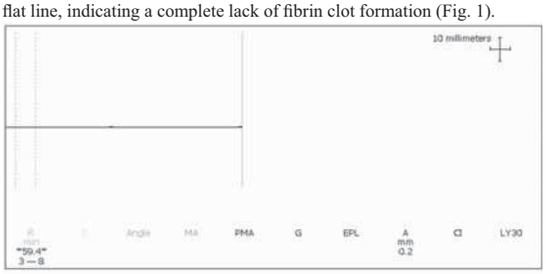
Abstract# 541 Poster Board #-Session: P134

PERIOPERATIVE COAGULATION MANAGEMENT IN A PATIENT WITH AFIBRINOGENEMIA UNDERGOING LIVER TRANSPLANTATION. Ralph J. Fuchs[1], Jay Levin[1], Meghan Tadel[1], William Merritt[1]. *[1]Anesthesiology and Critical Care Medicine, Johns Hopkins University, Baltimore, MD, USA.*

Clinical Background: This report describes the perioperative management of the first patient with congenital afibrinogenemia, complicated by Budd Chiari Syndrome, undergoing liver transplantation. Afibrinogenemia is a rare hereditary coagulation disorder characterized by a propensity towards bleeding. The severity of bleeding varies from patient to patient but tends to be more frequent and severe in association with trauma and surgical procedures.

Case Report: A 21-year-old Hispanic female with afibrinogenemia was complaining of abdominal bloating, cramping, pain associated with eating, and weight gain. Computed tomography (CT) scan showed occlusion of the hepatic veins and the infrahepatic vena cava consistent with Budd-Chiari Syndrome. The Model for End Stage Liver Disease (MELD) score was 40.

These developments led to placement on the liver transplantation waiting list. Just prior to transplant surgery, an initial thrombelastogram (TEG) showed a flat line, indicating a complete lack of fibrin clot formation (Fig. 1).



]Figure 1: Preoperative TEG.

Preoperatively, 20 units of cryoprecipitate were infused. The first intraoperative TEG demonstrated a tracing consistent with normal clot formation (Fig. 2).

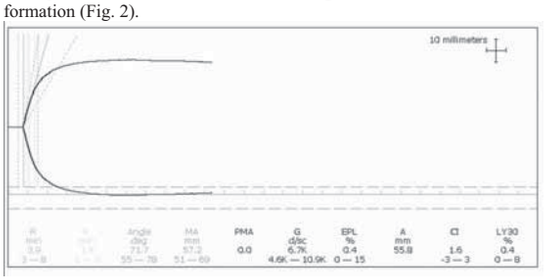


Figure 2: Intraoperative TEG.

Coagulation studies normalized with the newly functioning liver.

Significance: The liver transplantation appears to have corrected the fibrinogen deficiency, presumably limiting the chance of recurrent Budd-Chiari Syndrome. This report documents the first case of TEG use during liver transplantation in a patient with afibrinogenemia. This case highlights the essential role of fibrinogen in the coagulation cascade and exposes the interplay between plasma fibrinogen and thrombin levels, which determine coagulation or fibrinolysis.

Abstract# 542 Poster Board #-Session: P135

EVOLUTION AND PROGNOSIS OF ORTHOTOPIC LIVER TRANSPLANTATION IN PATIENTS WITH HEPATORENAL SYNDROME TREATED WITH VASOPRESSIN ANALOGS.

Ana M. Lopez-Lago[1], Juan R. Fdez-Villanueva[1], Jose M. Garcia-Acuna[3], Enrique Ferrer Vizoso[1], Esther Molina[2], Evaristo Varo Perez[2]. *[1]Intensive Care Unit, Clinic Universitary Hospital, Santiago de Compostela, A Coruna, Spain; [2]Abdominal Transplant Unit; [3]Coronay Care Unit.*

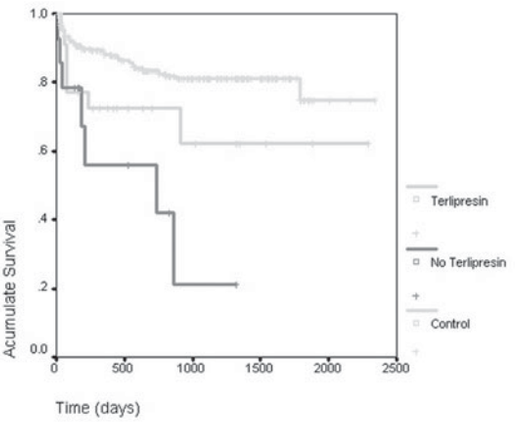
Patients with Hepatorenal Syndrome (HS) prior to OLTX present high morbid-mortality rates during the post-surgery period.

Objetive: To determine if patients with HS treated with Vasopressin Analogs prior OLTX have higher survival rates than patients with HS treated with other drugs.

Method: Between years 2000 to 2006 we had 249 OLTX cases form cadaver donor in our Intensive Care Unit. 37 patients presented HS pre-transplantation. Of them, 22 patients were treated with Terlipressin and Albumin and the rest 15 cases were treated with other drugs.We defined 3 groups: number 1 (patients with normal RF prior OLTX), number 2 (SH pre-transplantation patients treated with other drugs than Terlipressin) and number 3 (SH cases treated with Terlipressin prior OLTX.) We made a Comparative Analysis of the basal characteristics of the three groups. We also studied Surgical Variables. We made a 5 years follow-up, with a median of 720 days.

Results: The basal characteristics of the three groups were similar. HS patients (groups 2 and 3) presented significantly higher Urea and Creatinine serum levels than the group 1 before OLTX, ICU days of stay was similar among Group 1 and the Terlipressin treated group. The non-Terlipressin treated group had significant longer ICU days of stay (12±11,4; p= 0,008). Surgery Time and Cold Ischemic Time were similar in the three groups. Group 3 presented major Blood-based Products Transfusion need during surgery time (13±10, p= 0,001) We found after 5 years of follow-up not significant differences of Mortality among groups 1 and 3 (83% vs. 68%, p= 0,07) while in group 2 survival was minor than the other two groups (50%, p= 0,002.)

Conclusions: Patients with HS prior OLTX treated with Vasopressin Analogs have similar prognosis and survival than patients with normal RF pre-transplantation after OLTX. This discovery suggests that HS patients should be treated with Vasopressin Analogs before OLTX.



Abstract# 543 Poster Board #-Session: P136

SIROLIMUS: A SIMPLE, RAPID AND HIGHLY SENSITIVE HPLC/ELECTROCHEMICAL DETECTION (ECD) ASSAY SUITABLE FOR ROUTINE THERAPEUTIC MONITORING OF LIVER TRANSPLANT RECIPIENTS.

Satoshi Kishino[1], Etsuko Suka[1], Nobuo Mochizuki[1], Keiko Ohno[1], Tsuyoshi Shimamura[2], Hiroyuki Furukawa[2], Satoru Todo[2]. *[1]Medication Use Analysis and Clinical Research, Meiji Pharmaceutical University, Kiyose, Tokyo, Japan; [2]First Department of Surgery, Hokkaido University Hospital, Sapporo, Hokkaido, Japan.*

Aims: Sirolimus (Rapamycin) is used as an immunosuppressive agent to prevent allograft rejection in liver transplantation. Therapeutic drug monitoring (TDM) of whole blood is an important part of immunosuppressive therapy. At present, two methods for measuring drug concentrations are available: the reference method is high-performance liquid chromatography (HPLC) with ultraviolet (UV) or mass spectrometry (MS) detection and the second technique is the IMx sirolimus assay. Advantages of HPLC/MS quantification over techniques such as immunoassay or HPLC/UV include enhanced selectivity and lower detection limit. However, clinical laboratories have been slow to incorporate HPLC/MS because of concerns about instrument expense and limited capacity. The conventional method is unsuitable for clinical use. We have developed a simple, rapid and highly sensitive HPLC/electrochemical detection (ECD) assay suitable for routine therapeutic monitoring of sirolimus in blood.

Methods: Three living donor liver transplant recipients (3 males) were enrolled in this study. Sirolimus was administered orally at an initial dose of 1.0 mg/day, and the dose was then adjusted to maintain whole blood trough concentration. Blood samples were collected before drug administration early in the morning. An HPLC system (LC-10AD pump, Shimadzu, Kyoto Japan) equipped with a Coulochem II electrochemical detector, an analytical cell and guard cell (ESA, Massachusetts, USA) was used.

Results: A higher peak of sirolimus was obtained at a higher applied potential. For suitable determination, the potential of E2 was set at +800 mV, and the potential of guard cell was set at +850 mV while the potential of E1 cell was set at +400 mV. The method was linear throughout a concentration range of 1-50 ng/mL when 0.5 mL blood was used. The limit of detection was 0.5 ng/mL (signal/noise >3). Trough concentration of sirolimus showed great variability between patients. The values were, however, well within the analytic range of the HPLC/ECD procedure.

Conclusion: This study shows that our novel HPLC/ECD procedure is suitable for routine monitoring and therapy management of sirolimus in solid organ transplant recipients.

Abstract# 544 Poster Board #-Session: P137

CALCINEURIN INHIBITORS AND HCV RECURRENCE WITHIN SIX MONTHS AFTER LIVER TRANSPLANTATION.

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Background/Aim: HCV-related end stage liver disease is a common indication for liver transplantation (LT). Viral persistence is almost always present after six months in the patients underwent LT and usually leads to rapid disease recurrence. Due to graft implantation, those patients undergo an immunosuppressive protocol with lifelong administration. It has been reported that immunosuppressors may have some influence on HCV recurrence. Calcineurin inhibitors are one of the most used immunosuppressor category, particularly cyclosporine and tacrolimus. Few studies are available on the possible role of these two drugs on HCV recurrence. Aim of the present study was to assess possible differences between Tacrolimus and Cyclosporin on HCV recurrence frequency within the first six months after LTx. Methods: All patients with HCV end stage liver disease who undergo LTx from 6/6/2004 to 31/5/2006 were enclosed in this study (30 patients). We split out two groups of patients: (Group A: 15 patients undergoing Cortison in the first month plus Micophenolate for three months coupled to cyclosporine), (Group B: 15 patients undergoing Cortison in the first month plus Micophenolate for three months coupled to Tacrolimus). Immunosuppressors doses were optimized according to serum drugs levels. All patients underwent follow-up to assess possible adverse effects. Rejects or recurrences were assessed by liver biopsies plus viral load. We assessed possible differences in HCV recurrence frequency using U Mann-Whitney two tailed. Results: On 30 evaluated patients we had 18 HCV recurrences in the first 6 months, 11 in group A and 7 in group B. At a statistical analysis we found that HCV recurrence within six months was more frequent in patients enrolled in Gorup A ($p < .05$ U Mann-Whitney). Conclusions: Patients receiving a cyclosporine in their immunosuppressive schedule, show to have a higher frequency of HCV recurrence within six months. This evidence would suggest that cyclosporin may have an influence on immune response against HCV.

Abstract# 545 Poster Board #-Session: P138

LATE MORTALITY FOLLOWING ORTHOTOPIC LIVER TRANSPLANTATION: A SINGLE CENTRE EXPERIENCE.

Norma C. McAvoy[1], Peter C. Hayes[1]. *[1]Scottish Liver Transplant Unit, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom.*

Background: Studies into causes of mortality following liver transplantation have predominantly focussed on the first post-operative year. Here, the causes of patient mortality are well defined and identify primary graft non-function, technical complications of the surgery, infection and cardiovascular complications as important. A lesser amount of data exists regarding mortality in OLT recipients who have survived 3 years or more.

Aim: To review the causes of death in all patients who underwent OLT in a single centre and survived 3 or more years post transplantation.

Method: Single centre retrospective observational study. We examined all-cause mortality in OLT recipients who survived at least 3 years since 1992.

Results: Out of 642 OLTs performed in our unit, 298 (46.4%) patients survived ≥ 3 years. 45 (15.1%) patients subsequently died. Causes of death in this group included: malignancy 15 (4 PTLD) (33.3%) patients, cardiovascular 4 (8.9%), sepsis 10 (22.2%), multi organ failure 3 (6.7%), recurrence of primary disease 3 (6.7%) and other causes in 10 patients (22.2%). Mean age at time of death was 58 years (range 29-74). The aetiology of liver disease in this cohort was: PBC 15 (33.3%), alcoholic liver disease 10 (22.2%), Paracetamol overdose 4 (8.9%), Autoimmune liver disease 4 (8.9%), Hepatitis C 4 (8.9%), hepatocellular carcinoma 4 (8.9%), cryptogenic cirrhosis 3 (6.7 %) and drug induced liver disease 1 (2.2%). The mean time since transplant was 2175 days (range 1107-4026).

Conclusion: Over 75% of deaths in our OTL recipients who survived ≥ 3 years were from 4 main causes; malignancy, sepsis, cardiovascular and recurrence of primary disease. These main aetiological groups have immunosuppression as a common denominator and, as graft loss from acute or chronic rejection is uncommon, strategies to progressively reduce immunosuppressive therapy with time post-OLT should be actively pursued.

Abstract# 546 Poster Board #-Session: P139

CORRELATION OF CORONARY ARTERY CALCIFICATION SCORES WITH FRAMINGHAM CARDIAC RISK INDIVIDUAL VARIABLES IN PATIENTS UNDERGOING ASSESSMENT FOR ORTHOTOPIC LIVER TRANSPLANTATION.

Norma C. McAvoy[1], Graham McKillop[2], Peter C. Hayes[1]. *[1]Scottish Liver Transplant Unit, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom; [2]Dept of Radiology, Royal Infirmary of Edinburgh, Edinburgh, United Kingdom.*

Introduction: In the years following orthotopic liver transplantation (OLT), cardiovascular (CV) events are a significant cause for morbidity and mortality. It is therefore of great importance to identify those patients deemed at highest risk of CV disease pre-transplant to allow targeted therapeutic intervention.

Coronary artery calcification (CAC) is an independent risk factor for coronary artery disease (CAD) which uses computed tomography (CT) to generate CAC scores, a well validated assessment tool in the detection of subclinical CAD. We have previously reported a strong correlation between CAC and the Framingham risk score (FRS), a recognised CV risk scoring system generated using the following variables: - gender, age, smoking, systolic BP, total cholesterol and HDL-cholesterol.

Aims: To assess the prevalence of subclinical CAD in our OLT population using CAC scores and to correlate this with the individual components of FRS.

Method: Single centre prospective observational study of patients undergoing assessment for OLT from April 2005-May 2006. All patients underwent thoracic CT scanning for CAC scores calculation along with documentation of the components of the FRS.

Results: 52 patients were studied (38 males) with a median age of 54 years (range 23-69). The median CAC score was 102 (range 0- 3533). 15% of patients had a CAC score of 0 (no plaque), 11.3% score of 1-10 (minimal plaque), 20.8% score of 11-100 (mild plaque), 28.3% score of 101-400 (moderate plaque) and 24.5% had a score of >400 (extensive plaque). 67.92% of patients had more than one vessel involved with 18.8% having 4 or more vessels involved.

FRS was calculated with a median of 10.6 (range 1.5-65.3). On examination of the individual FRS variables, no correlation existed between CAC scores and systolic BP ($r=0.261$, $p=0.06$), current smoking ($r=0.164$, $p=0.26$) or gender ($r=0.228$, $p=0.1$). A negative (but non significant) correlation between CAC scores and total cholesterol and HDL cholesterol was found. A highly significant correlation was observed with age ($r=0.452$, $p=0.001$).

Conclusion: Although a correlation exists between CAC scores and FRS this appears predominantly due to age and not other classical CV risk factors. Further study of candidate CV risk factors in OLT candidates is essential.

Abstract# 547 Poster Board #-Session: P140

PORTO-UMBILICAL ANASTOMOSIS DURING LIVER TRANSPLANTATION; A SIMPLE METHOD TO CREATE A TRANSIENT PORTOSYSTEMIC SHUNT TO AVOID SPLACHNIC CONGESTION.

Ignacio M. Gonzalez-Pinto[1], Carmen Garcia-Bernardo[1], Alberto Miyar[1], Lino Vazquez[1], Luis Barneo[2], Emilia Cortes[2], Violeta Fernandez[2], Pedro Picatto[2], Luis Luyando[3]. *[1]HPB and Liver Transplantation Surgery, Hospital Universitario Central de Asturias, Oviedo, Asturias, Spain; [2]Anesthesiology, Hospital Universitario Central de Asturias, Oviedo, Asturias, Spain; [3]Radiology, Hospital Universitario Central de Asturias, Oviedo, Asturias, Spain.*

Purpose: to describe a new method of transient intraoperative porto-systemic shunt.

Introduction: Splachnic edema after portal cross-clamping can be a dangerous complication during the anhepatic phase of liver transplant operation.

The current usual method to avoid this complication is the association of retrohepatic cava preservation and a temporary porto-caval shunt, as first described experimentally in dogs by Fonkalsrud in 1966, to avoid the use of external vascular shunt.

Patients and Methods: Among 175 liver transplant operations, we performed a transient porto-systemic shunt 17 times in 16 patients, all but one a porto-caval anastomosis, in two instances with an interposed iliac graft from the donor. In one case with a prominent umbilical vein we have used a porto-umbilical anastomosis. The indication to perform the temporary shunt was in all cases the development of splachnic edema. In our initial experience,

before the introduction of the use of temporary shunting, we had two cases of massive splachnic edema which led eventually to the intraoperative death of the patient.
In one case, to simplify the construction of the shunt, we decide to use the patent paraumbilical vein. During the cross-clamping of the portal vein there was a rapid onset of splachnic edema, which resolved after shunting. The flow of the shunt was 1.6 litters per minute.
Conclusions:
- The most important risk factor for the development of splachnic edema was the presence of a patent paraumbilical vein, which occurred in 9 of the 16 shunted patients.
- We consider that the use of the patent paraumbilical vein to perform a porto-umbilical venous shunt is a good and easy method to decompress the splachnic area avoiding a dangerous venous splachnic congestion and edema.

Abstract# 548 Poster Board #-Session: P141

RELATIONSHIP BETWEEN CALCIUM CHANNEL BLOCKER AND HEPATIC CELLS APOPTOSIS IN PRESERVATION-REPERFUSION INJURY OF LIVER TRANSPLANTATION IN RATS. Liu Hongtao[1], Li Jiansheng[1]. *[1]The Centre of Organ Transplantation, Anhui Provincial Hospital, Hefei, Anhui Province, China.*

Objective To study the relationship between calcium channel blocker and hepatic cells apoptosis in preservation-reperfusion injury of liver transplantion in rats. **Methods** Rats were randomly divided into three groups:group A, sham operation group;groupB, contral group;group C, experimental group(cold preservation solution containing verapamil). Applying portal-vena cava shunt liver autograft model, the apoptsis indicies (AI) are evaluated and the rat survival rates were compared. **Results** There was much more apoptosis of hepatic cells in group B and C, but AI in group C is much less than that in group B. (P<0.05) **Conclusion** Verapamil can decrease hepatic cells apoptosis and increase the rat survival rate.

Abstract# 549 Poster Board #-Session: P142

THE INFLUNENCE OF CALCIUM CHANNEL BLOCKERS ON INTRACELLULAR CALCIUM LEVELS OF COLD PRESERVATION-REPERFUSION INJURY DURING LIVER TRANSPLANTATION IN RATS. Li Jiansheng[1], Liu Hongtao[1]. *[1]The Centre of Organ Transplantation, Anhui Provincial Hospital, Hefei, Anhui Province, China.*

Objective To investigate the influence of calcium channel blockers on intracellular calcium levels of cold presrevation-reperfusion injury during liver transplantation in rats.**Methods** According to the ingredient of perfusion and preservation solutions,the animals were divided into four groups;the control group with UW solution, the experimental group I with UW solution plus Verapamil,the experimental group II with UW solution plus Nifedipine and experimental group III with UW solution plus Diltiazem.The intracellular calcium of the rat hepatocytes and liver function were measured and the liver structure was observed under light and electron microscopy.**Results** There were significant differences between the experimental groups and the contral group in intracellular calcium concentration and liver function.(p<0.05) The histological injury of liver in the rats of the experimental groups was obviously mildre than that of the contral group.**Conclusion C**alcium channel blockers have protective roles of cold preservation-reperfusion injury during liver transplantation in rats.

Plenary Session II

Abstract# 550

ALL POTENTIAL LIVING LIVER DONORS SHOULD UNDERGO LIVER BIOPSY PREDONATION. Peter Horton[1], George Tsoulfas[1], Randeep Kashyap[1], Peter Abt[1], Saman Safadjou[1], Maureen Graham[1], Parvez Mantry[1], Benedict Maliakkal[1], Charlotte Ryan[1], Mark Orloff[1], Adel Bozorgzadeh[1]. *[1]Surgery, URMC, Rochester, NY, USA.*

Background: Live-donor (LD) liver-transplantation (LTx) is being used increasingly and is a great option for the recipient however the safety of the donor must always come first. Donors with significant macrovesicular steatosis pre-donation are at increased risk of dying post-transplantation. Whether every potential LD needs a liver biopsy to assess the degree of steatosis is controversial.

Aim: We wanted to establish the accuracy with which liver ultrasound and/or CT scan performed during the work up of potential liver donors predicted the extent of steatosis on liver biopsy histology.
Methods: The University of Rochester liver-transplant database containing prospectively collected data was used to identify patients who had been worked up as living donors between 1st January 1992 and 31st December 2005. Only patients who had had an ultrasound and CT scan of the liver along with a liver biopsy as part of the screening process were included in the study. Liver biopsy histology was used as the gold standard to which radiological findings were compared.
Results: There were 500 potential live donors of which 270 patients had a liver ultrasound and CT scan along with liver biopsy as part of their work up. Ultrasound alone would have missed 8 patients (12.7%) out of 63 who had biopsy-proven macrosteatosis >10%. CT scan alone would have missed 32 patients (24.9%) out of 129 with biopsy-proven macrosteatosis >10%. Even when both ultrasound and CT scan were used, 4 patients (27%) out of 15 patients with macrosteatosis would still have been missed.
Discussion: Relying on ultrasound and/or CT scan findings to assess the degree of steatosis is not justified and all potential live liver donors should undergo routine liver biopsy as part of the normal screening process. Recent publications have highlighted a small but significant number of patients who did not undergo liver-biopsy prior to donation and who are only found to have a fatty liver at laparotomy. Liver donation in these patients did not proceed. There has been at least one donor death post-transplantation due to unrecognised non alcoholic steatohepatitis.
Conclusion: Every patient undergoing screening prior to LD liver donation should have a liver biopsy and the histological findings obtained should play a major role in deciding whether to proceed with liver donation.

Abstract# 551

LIVING DONOR LIVER TRANSPLANTATION FOR CHILDREN UNDER 10 KG IN BRAZIL. Joao Seda Neto[1], Eduardo Carone[1], Vincenzo Pugliese[1], Alcides A. Salzedas[1], Eduardo Antunes[1], Gilda Porta[1], Renata S. Pugliese[1], Irene Miura[1], Vera Baggio[1], Massami Hayashi[1], Teresa Guimaraes[1], Andre Godoy[1], Marcos Beloto[1], Mario Kondo[1], Paulo Chapchap. *[1]Liver Transplant Unit, Hospital do Cancer/Hospital Sirio Libanes, Sao Paulo, Brazil.*

Infants with end stage liver disease represent a treatment challenge. Living donor liver transplant (LDLT) is the only option for timely liver transplantation in many areas of the globe, adding to the technical difficulties of the procedure. Factors that impact morbidity and mortality can now be determined, opening a new era for improvement. We have accumulated an 11 year experience with LDLT for children under 10 kg. From October 1995 to October 2006, 222 LDLT in patients under 18 years of age were performed; 133 LDLT and three deceased donor transplants were performed in 129 infants below 10 kg. Forty seven patients received grafts with GRWR>4%. Two patients received monosegmental grafts, and two patients underwent delayed abdominal wall closure. The incidence of vascular complications (PVT and HAT) was 10%. There were no statistically significant differences in patient survival and in the incidence of vascular complications on those patients with body weight < 7.6kg, graft weight >300g, PELD >18, z score height/age < -1.7, bilirubin >13.6 mg/dl, albumin <2.5 g/dl, INR>1.3, and GRWR > 4%. There were 7 retransplants, and 4 patients received a second LDLT. The actuarial patient survival rates at 1, 3, and 10 years was 88.8%, 84.7% and 82% for all pediatric patients. Infants under 10 Kg had a 1 year survival of 87.5%, and at 3 and 10 years was 84.9%. In our most recent series, patients under 10 kg operated after 2003 (75% of the cases), one and three years survival rate were 92.4% and 91.2%, respectively. LDLT has results comparable to other modalities of liver transplant in infants. Monosegments are exceptionally needed for infants undergoing LDLT.

Abstract# 552

MULTIVISCERAL TRANSPLANTATION FOR COMPLEX THROMBOSIS OF THE PORTO-MESENTERIC SYSTEM IN THE ABSENCE OF INTESTINAL FAILURE. Rodrigo M. Vianna, Richard S. Mangus, Jonathan A. Fridell, Joseph Tector. *[1]Surgery, Indiana University School of Medicine, Indianapolis, IN, USA.*

Introduction
Complete thrombosis of the porto- mesenteric system in the absence of a large tributary precludes anastomosis to the donor portal vein in liver transplant recipients. In such situations, alternative vascular reconstructions have been proposed, including cavo-portal hemitransposition, renoportal

vein graft interposition and utilization of the hepatic artery for portal flow. Although these techniques are capable of restoring blood flow to the donor portal vein, portal hypertension and its complications continue to exist after transplantation with poor graft and patient survival. We describe our experience with the original 8 patients in which a multivisceral transplant was performed in the presence of complete thrombosis of the porto-mesenteric system. To the best of the authors knowledge, this is the only series of patients in which this procedure has been performed in this setting.

Methods

Between July 2004 and July 2006, 8 male patients with a pre-operative diagnosis of diffuse thrombosis of the porto-mesenteric system underwent evisceration of the upper abdomen and foregut with subsequent multivisceral transplantation including the stomach, duodenal-pancreatic complex, small intestine and liver. Patients in which the portal flow could be reestablished using thrombectomy or porto-mesenteric vein grafts were excluded.

Results

Seven recipients are currently alive on a regular diet at home after 6 to 24 months. One patient died 24 days after surgery from septic shock and multiple organ failure resulting from an anastomotic leak. Two patients developed biopsy-proven mild rejection, which was successfully treated with steroids. Hospital stay ranged from 22 to 34 days (median 30 days). All the patients were successfully weaned from TPN prior to discharge.

Conclusion

Multivisceral transplantation should be considered as an option for the treatment of patients with complex thrombosis of the porto-mesenteric system even in the absence of intestinal failure. It is the only procedure capable of reestablishing normal vascular physiology in the abdomen, providing a cure for the baseline disease and relieving the effects of post transplant portal hypertension.

Abstract# 553

LONG TERM OUTCOME FOLLOWING LIVER TRANSPLANTATION FOR FULMINANT LIVER FAILURE DUE TO PARACETAMOL OVERDOSE.

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BACKGROUND: Paracetamol overdose (POD) is a major cause of fulminant liver failure (FLF) requiring transplantation in the United Kingdom.

AIM: To characterise the early and late outcome after orthotopic liver transplantation (OLT) for paracetamol overdose in the Scottish Liver Transplant Unit over a 14 year period (1992-2006).

METHODS: Of 127 liver transplants performed for FLF, 44 (20 male / 24 female) were undertaken for POD according to Kings criteria. The median age was 32 (range 18-51). Data were obtained from a prospective database and case-note review.

RESULTS: 18 patients (63.7%) overdosed in association with alcohol or other drugs, 9 (20.5%) had a staggered overdose and only 4 patients (9.1%) had an accidental overdose. 19 patients (43.2%) had a history of previous overdose or psychiatric illness. Patients ingested on average 52 paracetamol tablets (range 10-125) and were transplanted within 50 hours of admission (range 12.5-156). Most patients had significant metabolic acidosis, and one third of them were grade 3-4 encephalopathic or ventilated on admission. The 30-day post-transplant mortality rate during the index admission was 30% (13 patients), whilst 5 patients died during subsequent follow-up. The cause of death is shown in the table. The 5 year patient survival was 59%, whilst the graft survival was 54%, significantly lower compared to elective transplantation ($p<0.05$). Biliary complications occurred in 7 (27%) patients. Re-transplantation was required in 23% patients due to primary non function (1), hepatic artery thrombosis (3) and chronic rejection (2). 3 patients had a subsequent transplant whilst 3 patients had 2 further transplants. To date, 9 patients (35%) patients continue to have social/psychiatric issues. Only 3 patients (12%) have no complications or ongoing problems at follow up.

CONCLUSION: Orthotopic liver transplantation for paracetamol overdose is associated with significant early and late morbidity and substantial mortality. Few patients return to normal. Options such as auxiliary transplantation should be explored to minimise organ usage and long term transplant related morbidity.

Post-transplant mortality

Cause of death	Index admission (n=13)	During follow-up (n=5)
Cardiac intraoperative	2	1 (2nd transplant)
Sepsis/organ failure	5	2
Cerebrovascular	3	
Hepatic artery thrombosis	1	1
Primary non-function	1	
Pulmonary haemorrhage	1 (post 2nd transplant)	
Immunosuppression related		1

Abstract# 554

DETECTION OF HCV ANTIGENS IN EARLY POST-LIVER TRANSPLANT GRAFT BIOPSIES PREDICTS RECURRENT HEPATITIS C AFTER 1 YEAR IN PATIENTS TRANSPLANTED FOR HCV RELATED LIVER DISEASE.

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Background. Early graft HCV reinfection and recurrent hepatitis C (RHC) represent the main clinical problems to face in post liver transplant (LT) setting.

Aim of the present study was to evaluate if the immunohistochemical detection of liver HCV antigens (HCV-Ag) in early post -LT liver biopsies could be useful in predicting RHC after 1 year post- LT.

Methods. Liver specimens from 20 to 90 days post-LT were obtained from 60 HCV+ve patients with early post-LT liver disease: *hepatitis* (36), *rejection* (7), *undefined* (7, coexisting rejection grade-I and hepatitis patterns) or *other* (10). HCV-Ag were evaluated, on frozen sections, by an immunoperoxidase technique and the percentage of infected hepatocytes estimated. One year post -LT all patients were clinically evaluated: 8 were died (3 without RHC were excluded from further evaluations) and 31 out of the remaining 52 alive patients presented RHC.

Results. Forty eight out of 60 biopsies were +ve for HCV-Ag (80.0%), more frequently in case of *hepatitis* with respect to other diagnosis (97.2% vs 54.2%, p=0.000066). The median percentage of HCV-Ag +ve hepatocytes was significantly higher in patients who will present RHC after 1 year with respect to patients who will not (67.5% vs 1%, p=0.000047. Univariate analysis indicated that RHC after 1 year post -LT was significantly associated with serum HCV-RNA >4 Meq/ml, number of HCV-Ag +ve hepatocytes ≥30% and the presence of a diagnosis of *hepatitis* determined in the early phase post LT (p=0.0078, p=0.000000013, p=0.0000038, respectively). Multivariate analysis identified a number of HCV-Ag +ve hepatocytes ≥30% as the only significant independent predictor for RHC 1 year post- LT (p=0.004).

Conclusions: HCV graft re-infection occurs early post -LT and may be easily determinated by immunohistochemistry evaluation of HCV-Ag in the liver. A early high number of reinfected hepatocytes predicts independently from histological diagnosis the risk of RHC after 1 year post-LT.

Abstract# 555

ACCURACY OF EARLY BIOPSIES TO PREDICT LONG-TERM SEVERITY OF RECURRENT HEPATITIS C AFTER LIVER TRANSPLANTATION.

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Recurrent hepatitis C is characterized by accelerated fibrogenesis. However, the rate of fibrosis progression has marked individual variations. Previous data suggest that biopsies obtained at the time of recurrence and at 1 year of liver transplantation (OLT) are useful to predict long-term histological outcome. Based on this, antiviral therapy is indicated in most centers in patients with fibrosis stage (F) ≥ 2 at one year. **Goal**: to investigate the accuracy of biopsies obtained during the first year after OLT to predict

severity of HCV recurrence. **Methods**: the study included 49 patients with non-cholestatic HCV recurrence who underwent at least 2 biopsies with the last one obtained >3 years after OLT. Severe HCV recurrence was defined as F3-F4 beyond 3 years of follow-up. Initial biopsy was performed at the time of ALT elevation (n=42) or at 1 year in patients with normal ALT (n=7). **Results**: based on protocol biopsies (6±2 per patient) HCV recurrence was diagnosed as mild in 32 (65%) and severe in 17 (35%). Initial biopsy showed acute hepatitis (AH) in 8 (16%), minimal inflammatory changes (MI) in 18 (37%) and chronic hepatitis (CH) in 23 (47%) patients. Median time-interval from OLT to initial biopsy was 3 months (AH 2, MI 2.5 and CH 7 months). Protocol 1-year biopsies showed ≥ F2 in 17 patients (35%) of which 16 (94%) developed severe recurrence. Among the 32 patients with <F2 at 1 year, 24 (75%) developed mild and 8 (25%) severe recurrence. Therefore, the presence of ≥ F2 at 1 year to predict long-term histological severity had a sensitivity of 67%, specificity of 96%, positive predictive value of 94%, negative predictive value of 75% and diagnostic accuracy of 82%. **Conclusions**: AH in the initial biopsy was observed in a minority of patients and in all cases it evolved to mild disease. Biopsies obtained at the time of recurrence were not useful to predict long-term histological outcome in this study. In contrast, presence of ≥ F2 on 1-year protocol biopsies was an excellent predictor of severe long-term recurrence. However, 25% of patients with mild fibrosis (<F2) at 1 year went on to develop severe disease.

Abstract# 556

CORRELATION BETWEEN LIVER FIBROSIS AND INFLAMMATION IN PATIENTS TRANSPLANTED FOR HCV LIVER DISEASE.

Mario Angelico[1], Leonardo Baiocchi[1], Luciano Perrone[1], Alessandra Petrolati[1], Ilaria Lenci[1], Laura Tariciotti[1], Daniele Sforza[1], Giuseppe Iaria[1], Giampiero Palmieri[2], Giuseppe Tisone[1]. *[1]Liver Transplant Center, University of Tor Vergata, Rome, Italy; [2]Department of Pathology, University of Tor Vergata, Rome, Italy.*

Background: HCV reinfection after liver transplantation (LT) is associated with an accelerated liver disease progression compared to non-LT patients. Recent reports suggest that LT outcome is deteriorating in recent years, due to increased fibrosis progression in the graft. Yet, factors affecting this process are not completely understood. **Aims**. To evaluate the relationship between histological progression of liver fibrosis and the histological signs of necro/inflammation in a population of HCV LT recipients who remained free of antiviral treatment. **Methods.** Fifty patients (M/F 36:14; mean age 52.7±6.1yrs) transplanted (between 1992 and 2002) for HCV liver disease were included in the study. *Grading* (necro/inflammation) and *staging* (fibrosis) scores were evaluated in protocol liver biopsies at one, two and three years from LT, (Ishak classification). Analysis was conducted both on pooled data and dividing patients according to age of transplant. Statistics was carried out by ANOVA, univariate and multivariate regression analysis. **Results.** The average yearly fibrosis progression rate (final total staging/years from transplant) was 0.7±0.5 units/year. It increased from 0.43±0.2 for LT performed in 1992-3 to 1±0.6 in those performed in 2001-2 (p=0.02). At univariate and multivariate analysis the main factor associated with fibrosis progression was the *grading* score ($p < 0.001$). Subgroup regression analysis confirmed a significant correlation between *grading* and *staging* for all age of transplant ($p<0.05$), yet regression slopes changed from to 0.17 for LT performed in 1992-3 to 1 for those performed in 2001-2. The mean *staging* score for each point of *grading* (derived from linear regression coefficients) increased from 0.4±0.2 for LT of 1992-3 to 0.7±0.1 for LT of 2001-2 (p=0.03). **Conclusions.** Liver fibrosis progression is strictly associated with histological necro-inflammation in HCV infected LT recipients, but shows a significant imbalance according to age of transplant. This finding suggests that other factors (non directly acting on liver necro/inflammation) contribute to the more rapid evolution toward cirrhosis observed in recent years in HCV infected LT patients.

Abstract# 557

ARE TACROLIMUS (TAC) VS. CYCLOSPORINE ME (CSA)-BASED IMMUNOSUPPRESSIVE REGIMINS ASSOCIATED WITH DIFFERENT RISKS OF DEATH DUE TO MALIGNANCY IN ADULT LIVER TRANSPLANT RECIPIENTS?

Julie Thompson[1], Russell Weisner[2], John Lake[1]. *[1]Medicine, University of Minnesota Medical School, Minneapolis, MN, USA; [2]Medicine, Mayo Clinic, Rochester, MN, USA.*

OBJECTIVES: Immunosuppression is often incriminated in the increased risk of post-transplant malignancies. It has been difficult to determine from single center studies or randomized-control trials with short-term follow-up whether any individual immunosuppressive agent is associated with a differential risk of post-transplant malignancy. To examine whether TAC vs. CSA-based immunosuppressive (IS) therapy is associated with an increased risk for death due to malignancies, data from a large registry of primary liver transplant recipients were analyzed.

METHODS: Data from adult primary liver transplant recipients, reported to the SRTR between January 1, 1998 and December 31, 2002, who were recorded on being on TAC- (n=6,304) or CSA-based (n=1508) IS therapy at discharge were included in the analysis. The incidence of all post-transplant malignancies and death due to malignancies were compared between the two groups

RESULTS: Patients were well matched including for pre-transplant diagnosis. The incidence of de novo lympho-proliferative disease was not significantly different between the TAC- and CSA-IS recipients. However, there were significant differences in the rates of de novo solid tumor and skin malignancies (Table 1) in favor of the recipients discharged on TAC-based IS. Kaplan-Meier survival analysis showed no significant difference in death due to malignancy 3-years post-transplantation between the TAC- (1.9%) vs. CSA-based (2.8%) IS groups (p=0.08).

CONCLUSION: These results suggest that TAC-based IS is associated with a lower risk of skin and non-skin solid malignancies following liver transplantation in adults. After 3 years of follow-up, death rates from malignancy were not yet significantly greater in the CSA-based IS recipients. There was no significant difference in the risk of lympho-proliferative disease in adults based on the choice of calcineurin inhibitor.

Incidence of post-transplant malignancies by 3 years f/u

Type of post-Transplant Malignancy	TAC	CSA	P-value
De novo lympho-proliferative	0.6%	1.1%	.09
De novo Solid tumor	1.6%	3.4%	<.01
Skin	0.9%	2.2%	<.01

Abstract# 558

IS INTRAOPERATIVE APROTININ PROPHYLAXIS ASSOCIATED WITH THE DEVELOPMENT OF RENAL DYSFUNCTION OR FAILURE AFTER LIVER TRANSPLANTATION? AN ANALYSIS OF 1067 PATIENTS.

Nienke Warnaar[1,2], Susan V. Mallett[2], Nancy Rolando[3], Marieke T. de Boer[1], Maarten W. N. Nijsten[1], Maarten J. H. Slooff[1], Andy K. Burroughs[3], Keith Rolles[4], Robert J. Porte[1]. *[1]Department of Hepatobiliary Surgery and Liver Transplantation, University Medical Center Groningen, Groningen, Netherlands; [2]Department of Anaesthesia, Royal Free Hospital, London, United Kingdom; [3]Department of Liver Transplantation and Hepatobiliary Medicine, Royal Free Hospital, London, United Kingdom; [4]Department of Surgery, Liver Unit, Royal Free Hospital, London, United Kingdom.*

Background: Renal dysfunction and failure are frequent complications after orthotopic liver transplantation (OLT), associated with increased mortality and a decreased quality of life. Aprotinin is an antifibrinolytic drug proven to reduce blood loss and transfusion requirements and widely used in liver transplant recipients. Recent studies in cardiac surgery have suggested that its use is associated with an increased risk for postoperative renal dysfunction and failure. The impact of intraoperative aprotinin prophylaxis on renal function after liver transplantation, however, is unknown.

Methods: In 1067 adults undergoing a first OLT, we assessed the impact of aprotinin prophylaxis on the development of postoperative renal dysfunction or failure. All patients were transplanted in one of the two participating centers between 1990 and 2004. Patients who required renal replacement therapy (RRT) before OLT were excluded. Overall, 667 patients (63%) had received aprotinin prophylaxis and 390 (37%) had not. Renal dysfunction was defined as an increase in serum creatinine by 50% to ≥ 2.0 mg/dL within the first week after OLT, compared to preoperative values. Renal failure was defined as the need for RRT within 90 days after transplantation.

Results: In propensity-adjusted, multivariate logistic regression (C-index 0.77), the use of aprotinin was associated with an increased risk of renal dysfunction (13.9% vs 5.4% in patients who received aprotinin versus no aprotinin; p<0.001). There were no statistically significant differences in rates of renal failure (14.4% vs 10.8%, p=0.10) or one-year patient survival (83.8% vs 85.6%, p=0.43).
Conclusion: Prophylactic use of aprotinin during OLT may be associated with a transient rise in serum creatinine within the first postoperative week. However, the use of aprotinin is not associated with a higher risk of renal failure nor with a higher mortality rate within the first year after transplantation.

Abstract# 559

SIGNIFICANT CORRELATION BETWEEN INTRAGRAFT GENE EXPRESSION PROFILES LINKING TO ACUTE PHASE INJURY AND ANGONENESS WITH HCC RECURRENCE AFTER LDLT. Kwan Man[1], Chung-Mau Lo[1], Kevin T. Ng[1], Bai-Shun Sun[1], Chris K. Sun[1], Sheung-Tat Fan[1]. *[1]Department of Surgery, The University of Hong Kong, Hong Kong, China.*

Objective
We aim to investigate the impact of intragraft gene expression profiles linking to acute phase injury and angiogenesis on liver tumor recurrence of HCC patients after LDLT.
Methods
From May 2000 to Sep 2005, 378 adult-to-adult liver transplants were included in the current study. Liver biopsies were taken in the donors before graft harvesting and 2 hours after reperfusion in the recipients. The intragraft gene expression profiles of the grafts greater (Group 1) and less than 60% (Group 2) of standard liver weight (SLW) were compared by cDNA microarray analysis. The mRNA expression of the over-expressed genes was further confirmed by quantitative RT-PCR. Hepatic stellate cell activation and intragraft gene/protein expression of Rac, FAK and CAK after reperfusion were detected. Clinical-pathological data including the incidence of tumor recurrence and metastases were also compared.
Results
The patients were grouped into Group 1 (>= 60% SLW, n=175) and Group 2 (<60%SLW, n=203). There were more HCC recipients in Group 2 [59 (29%) vs 31 (17.7%), p=0.01]. There was no difference of the incidence of higher tumor staging [21/59(35.6%) vs 13/31(41.9%), p=0.555) and patients beyond Milan [22/59(37.3%) vs 12/31(38.7%), p=0.895] or UCSF [14/59(23.7%) vs 7/31(22.6%), p=0.903] criteria between the two groups. The incidence of liver tumor recurrence together with lung metastasis was 22% (13/59) in Group 2. Most of the patients with tumor recurrence had hepatic sinusoidal injury at early phase after liver transplantation. There was no liver tumor recurrence in Group 1 (p=0.003). Significant activation of hepatic stellate cells was found in Group 2 together with stronger intragraft protein expression of FAK and CAK compared to that of Group 1. Intragraft mRNA levels of Egr-1, RhoA, FAK and VEGF were also significantly higher in Group 2. Distinct gene expression profiles linking to acute phase liver graft injury (Egr-1, G-protein signaling 5, ET-1, TGFR-b, FGFR, TNF-a and MMP-9) and angiogenesis (angiopoietin and angiopoietin-related protein 1) were found over-expressed in smaller liver grafts (Group 2).
Conclusion
Distinct intragraft gene expression profiles linking to acute phase injury and angiongenesis significantly correlated with higher incidence of liver tumor recurrence and metastases in LDLT using the liver graft less than 60% of SLW.

Abstract# 560

COVALENTLY CLOSED CIRCULAR DNA (ccc DNA) IN POST-TRANSPLANT LIVER BIOPSIES: A NEW TEST TO ASSESS THE PRESENCE OF THE VIRUS IN HBV TRANSPLANTED PATIENTS. Mario Angelico[1], Ilaria Lenci[1], Daniele Di Paolo[1], Raffaella Lionetti[1], Laura Taricciotti[1], Linda De Luca[1], Andrea Monaco[1], Daniele Sforza[1], Alessandro Anselmo[1], Carlo Federico Perno[2], Giuseppe Tisone[1]. *[1]Liver Transplant Center, University of Tor Vergata, Rome, Italy; [2]Laboratory of Molecular Virology, University of Tor Vergata, Rome, Italy.*

According to current guidelines liver transplant recipients due to HBV-related disease require prophylaxis with hepatitis B immune globulins (HBIG) with or without nucleos(t)ide analogs. This approach is extremely costly and there are no current criteria to assess whether prophylactic treatment can be withdrawn. The risk of HBV reactivation is known to be due to persistence of the viral genome as covalently closed circular (ccc) DNA in the nuclei of hepatocytes. Yet, whether cccDNA persists after years in the liver of HBsAg negative transplant recipients is currently unknown.
cccDNA was detected using a sensitive quantitative real-time PCR assay with improved analytic specificity and significantly reduced false positives. An housekeeping gene (b-actine) was used as positive extraction from liver tissue samples. A plasmid DNA construct containing a monomer of the HBV genome was used as positive control for quantification. The test was performed in percutaneous liver biopsies obtained from 13 liver transplanted patients (11/2 M/F; mean age 54.6±9.3 years) due to HBV-related cirrhosis, 5 of whom coinfected with HCV and 1 with HDV. The mean follow-up after transplant was 79 months (range=60-150). Liver tissue from HBsAg negative patients were used as negative control. All patients received i.v. HBIG after transplant to maintain anti-HBs titers above 70 IU/L with 100 mg/day of lamivudine. 3 patients with pre-transplant lamivudine resistance received 10 mg/day of adefovir dipivoxil. Immunosuppression was cyclosporin monotherapy in 7 patients, tacrolimus in 4 and mycophenolate mofetyl in 2.
None of the patients had HBV recurrence after transplant. All were yearly tested for HBsAg and serum HBV-DNA both of which resulted undetectable at any time. In all liver biopsies obtained at the end of the follow-up cccDNA was undetectable.
Transplanted patients receiving for 5 years the HBV prophylaxis and who did not exhibit viral breakthrough after transplant have no evidence of cccDNA in their livers. These patients are unlikely to undergo HBV recurrence and, if data will be confirmed in more extensive settings, should be considered for prophylaxis withdrawal.

Abstract# 561

LONG-TERM CONSEQUENCES OF DOMINO LIVER TRANSPLANTATION USING FAMILIAL AMYLOIDOTIC POLYNEUROPATHY GRAFTS. Shinji Yamamoto[1], Henryk E. Wilczek[1], Hassan Kansoul[1], Takashi Iwata[1], Marie Larsson[1], Henrik Gjertsen[1], Gunnar Söderdahl[1], Göran Solders[2], Bo-Göran Ericzon[1]. *[1]Division of Transplantation Surgery, Department of Clinical Science, Intervention and Technology, Karolinska Institute, Stockholm, Sweden; [2]Department of Clinical Neurophysiology, Karolinska Institute, Stockholm, Sweden.*

Background: Domino liver transplantation (DLT) using grafts from patients with Familial Amyloidotic Polyneuropathy (FAP) is an established procedure at many centers. However, data evaluating the long-term outcome of DLT patients is limited. The aim of the present study was to analyze the risk of *de novo* amyloidosis and patient survival of patients after DLT.
Patients and Methods; At our department, 28 DLT using FAP grafts were performed from January 1997 to December 2005. One patient received DLT twice. Postoperative neurological monitoring of peripheral nerve function was performed with electroneurography (ENeG) using surface electrodes in 20 cases. Six parameters of motor nerve conduction were recorded in the median, peroneal, and tibial nerves and six parameters of sensory nerve conduction were recorded in the median, superficial radial and sural nerves. The parameters were chosen to reflect both axonal and myelin functions in upper and lower extremities. An ENeG index based on these parameters was calculated as the mean deviation, in standard deviation (S.D.), from normal values and correlated to age and/or height. The diagnoses of slight, moderate, and severe neuropathy were done according to the ENeG Index [0 to -0.72, normal, -0.72 to -2; slight neuropathy, -2 to -4, moderate neuropathy and less than -4 as severe neuropathy]. Survival of patients after DLT was analyzed by Kaplan-Meier analysis.
Results; Four patients developed signs of polyneuropathy in ENeG possibly due to *de novo* amyloidosis. One, three and five year actuarial patient survival was 82, 56 and 49 %. We separately analysed the survival in patients with HCC (n=12, only 3 recipients fulfilled Milan criteria) and those without HCC (n=15). One, three and five year actuarial patient survival was 67, 15, 15%, and 93, 93, 80% respectively in HCC and non-HCC patients (p=0.001).
Conclusion; Survival after DLT is excellent except in patients with advanced HCC. Development of impaired nerve conduction in the extremities in a small proportion of patients may indicate *de novo* amyloidosis occurring earlier than previously expected.