1088-132 **Enteral Nutrition Affects Body Composition, Plasma Lipids and Cytokines in Cardiac Cachexia: Interim Analysis of a Double-Blind, Placebo-Controlled Intervention Trial**

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Background. Plasma lipids are suggested as modulators of inflammation. Enteral nutrition (EN) of patients with cardiac cachexia (CC) may change plasma lipids and therefore alter inflammation.
Methods. We assessed the effects of EN on plasma lipids, body fat content by DEXA, and cytokines (all in pg/mL). 29 pts with CC (all weight loss>7,5%, 4 female, BM=21,7±2 kg/m^2, NYHA 2,7±0,5, LVEF 24±9%) were randomized 3:1 to EN of 600 kcal/day (added between main meals) (ingredients per 600 kcal: proteins–20g, carbohydrates–72g, fat–26g) or placebo (clouding agent: 12 kcal/day). 3 pts died: 1–sudden cardiac death, 2- due to pump failure, 1 was transplanted. Remaining 19 patients (15 M, 4 F, age: 49±15y) were receiving nutrition, 6 patients placebo. Before nutrition (v1), directly after its withdrawal, that is 6 weeks after baseline (v2) and 12 weeks thereafter (v3), we performed DEXA, assessed plasma lipids, cytokines and quality of life by Minnesota score.
Results. Responses noticed in patients receiving EN are shown in the table (paired t-test, NS=p>0.1).
Conclusions. In patients with CC, EN increased body weight, which was mainly fat mass. This response was associated with opposite changes of plasma lipids that increased, and inflammatory cytokines that decreased.

Results in nutrition group

Parameter	v1	v2	v3.	1vs2	1vs3
Weight [kg]	63.4±10	65.4±10	66.0±11	.00003	.001
Minnesota	47 ± 24	37 ± 24	42 ± 24	.008	.057
Fat–legs [kg]	4.3±1.0	4.8±1.2	5.1±1.1	.005	.004
Fat–trunk [kg]	7.9±2.8	9.0±2.4	9.3±2.4	.01	.01
Fat–total [kg]	15.2±3.4	16.6±3.9	17.2±4.2	.002	.02
TotChol [mmol/L]	5.1±0.9	5.3±1.1	5.7±1.4	NS	.03
LDLCH [mmol/L]	3.0±0.9	3.3±1.1	3.6±1.2	NS	.01
TNFα [pg/ml]	12.7±17	6.1±9	2.4±3.4	NS	.02
TNFα SR I [pg/ml]	2.4±2.7	2.4±1.9	1.1±0.9	NS	.063
TNFα SR II [pg/ml]	5.1±3.5	5.0±4.0	3.2±3.7	NS	.02

POSTER SESSION

1089 Cardiac Transplantation: Clinical

Monday, March 08, 2004, Noon-2:00 p.m.
Morial Convention Center, Hall G
Presentation Hour: 1:00 p.m.-2:00 p.m.

1089-109 **Correlation Between Angiotensin II Receptor Subtype 1 and Vitronectin Receptor in Cardiac Transplantation**

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Background: Experimental evidence suggests that angiotensin II up-regulates the vitronectin receptor ($\alpha_V\beta3$).We have recently shown that recipients of hearts from donors with spontaneous intracerebral hemorrhage (ICH) are at increased risk of allograft vasculopathy compared to trauma donors. We have also shown that allograft vasculopathy is associated with up-regulation of $\alpha_V\beta3$.
Objectives: This study was undertaken to evaluate the correlation between angiotensin II receptor subtype 1 (AT1R) and $\alpha_V\beta3$ in heart transplant recipients.
Methods: We evaluated mRNA expressions of AT1R and $\alpha_V\beta3$ (Real-time PCR, TaqMan) in donor spleen lymphocytes (prior to transplantation) and endomyocardial biopsies (one-week post-transplant) in 20 recipients from ICH donors and 20 recipients from trauma donors. All patients underwent coronary intravascular ultrasound at baseline and one-year of transplant to evaluate for transplant vasculopathy.
Results: Baseline characteristics were similar except for increased donor age in the ICH group. At one week of transplant, heart biopsies from ICH group showed significant increased expression of $\alpha_V\beta3$ (3.8 x fold, P = 0.012) and AT1R (4.7 x fold, P= 0.001) compared to Trauma group. Further, the ICH group showed significant increased mRNA expression of $\alpha_V\beta3$ (3.5 x fold, P= 0.014) and AT1R (2.6x fold, P=0.004) in the donor spleen lymphocytes suggesting the presence of systemic activation of both AT1R and $\alpha_V\beta3$ prior to transplantation. At one year, the ICH group showed accelerated progression of coronary vasculopathy measured as change in coronary intimal thickness (CMIT: 0.69± 0.37 vs 0.39±0.35 mm; *P*= 0.01), and change in plaque volume (CPV: 6.3± 2.6 vs 4.1±2.5 mm^3; *P*= 0.02) compared to Trauma group. Using multivariate regression analysis both, AT1R and $\alpha_V\beta3$ in the donor spleen lymphocytes were independently associated with coronary vasculopathy. A significant correlation was also noted between AT1R and $\alpha_V\beta3$ (r=0.37, P=0.014) in the donor spleen lymphocytes.
Conclusions: Donor spontaneous intracerebral hemorrhage is associated with systemic activation of both AT1R and $\alpha_V\beta3$. Such an interaction may play a key role in the pathogenesis of allograft vasculopathy.

1089-110 **Mean Annual Change in Duration of QTc Correlates to 10-Year Survival Following Orthotopic Heart Transplantation**

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Background: Serial QT interval measurements over time may quantify the degree of myocardial repolarization heterogeneity. Currently the most routinely used noninvasive method to assess ventricular recovery time is the QT interval measurement made from the 12-lead electrocardiogram (ECG). Heterogeneity of recovery time has been suggested to increase the risk of fatal arrhythmias. We sought to examine the correlation between 10-year survival and ventricular repolarization heterogeneity in the patient with orthotopic heart transplant (OHT).
Methods: Electrocardiographic records of patients having undergone OHT more than 10 years prior were reviewed. Each patient had their QT_c interval charted as a function of time since undergoing OHT. The slope of each patient's QT_c as a function of time was then calculated. The slope was then qualified as a change of greater than, or less than 10msec per year.
Results: Thirty-six patients underwent OHT more than 10 years prior. The mean survival of the cohort was 9.8±5.7 years. The patients had 766 ECGs available for comparison. When assessing for interventricular conduction delay, there was no clinically significant difference in mean QRS duration between those surviving beyond 10 years versus those that died within 10 years (94.0±15.4 vs. 87.6±12.3 msec, p<0.01). The mean QT_c change per year in those surviving versus dying prior to 10 years was 5.5±13.6 vs 20.2±23.8 msec (p=0.024). The survival at 10 years for those with a mean annual QT_c change of less than 10 msec versus greater than 10 msec was 72% versus 14%, respectively (p=0.008).
Conclusions: Ventricular repolarization heterogeneity, as assessed by serial QTc measurements over time, identifies those patients at increased risk for 10-year mortality following OHT.

1089-111 **The Renal Benefit of Calcineurin Inhibitor-Free Immunosuppression After Heart Transplantation: Is It Safe?**

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Background: The nephrotoxicity of calcineurin inhibitors (CIs) can lead to hemodialysis in certain patients after heart transplantation. Various strategies have been devised to reduce the nephrotoxic effects of CIs. Most recently, successful withdrawal of CIs with immunosuppression consisting of mycophenolate mofetil and sirolimus have been reported. However, there still remains concern regarding subsequent rejection risk and the renal benefit of this protocol. Methods: Between 11/02 and 5/03, seven heart transplant patients with serum creatinines ≥ 2.8 mg/dl were entered into our renal sparing protocol. All patients were on either cyclosporine (6) or tacrolimus (1) along with mycophenolate ± prednisone. For our protocol, sirolimus was added to their regimen at 1 mg/day and titrated to attain a level between 4-8 ng/ml while the current CI dose was halved. Mycophenolate levels were maintained between 2-5 mcg/ml. When sirolimus levels became therapeutic (usually within 2-4 weeks), the CI was discontinued with endomyocardial biopsy being performed 4 weeks later. Results: 6 of 7 patients had successful decrease in serum creatinine at two months after discontinuation of CI. One patient (on cyclosporine) necessitated hemodialysis. The mean serum creatinine of the 6 patients prior to discontinuation of CI was 3.7 ± 0.7 mg/dl (range 2.8 - 4.6 mg/dl) which decreased to a mean of 2.7 ± 0.3 mg/dl (range 2.3 - 3.2 mg/dl), p=0.02. At 4 weeks after discontinuation of CI all echocardiograms were normal and at 6 weeks all endomyocardial biopsies were negative for rejection (ISHLT grade 0). Conclusion: Renal sparing immunosuppression with weaning of calcineurin inhibitor and maintenance with mycophenolate and sirolimus appears safe and effective in heart transplant patients experiencing renal failure.

1089-112 **Acute Rejections During Late Posttransplant Periods in Pediatric Heart Transplant Recipients**

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Previously we showed that acute rejection (AR) surveillance by intramyocardial electrogram (IMEG) recordings in children make routine biopsies unncessary and reduce the mortality linked to ARs. Due to the low incidence of late ARs and their usually harmless course, IMEG recordings were ended at 2 years after heart transplantation (HTx). However, the impact of late ARs on the long-term outcome is controversial, especially in children. Therefore, we reviewed the late ARs in our patients to evaluate their clinical relevance.
Methods: All children whith post-HTx time >2 years, who were transplanted between 1986-1999, were reviewed for prevalence and severity of late ARs diagnosed after secession of IMEG monitoring. Attention was also focused on temporal relationships between late ARs and the new appearance or aggravation of coronary artery vasculopathy (CAV).
Results: Of the 68 reviewed patients (age 8.3± 5.4 years at HTx), 22 (32.4%) showed 1-5 clinically relevant late ARs, which occurred for the first time at 5.0± 3.0 years post-HTx. Of all reviewed patients, 15 (22.1%) died during the study period at 6.7± 3.0 years after HTx. Of these deaths, 7 (46.7%) occurred during AR, 3 (20 %) were sudden deaths shortly (2-6 weeks) after AR treatment, 2 (13.3%) were related to severe CAV and 1