

IMMUNOSUPPRESSION AND RENAL DYSFUNCTION IN LIVER TRANSPLANTATION

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INTRODUCTION AND AIMS

Renal dysfunction is a common complication of orthotopic liver transplantation (OLT).

Long term use of cyclosporine (CyA) or tacrolimus (FK) can lead to nephrotoxicity. The introduction of mycophenolate mofetil (MMF) and sirolimus seems to improve renal function on these patients¹⁻³.

The aim of this study was to determine the incidence of acute and chronic renal complications in OLT and its association with immunosuppression (ISS).

POPULATION AND METHODS

This was a retrospective study of 626 patients receiving 708 OLT, transplanted in our unit between September 1992 and March 2007.

Clinical data: age at transplantation, gender, weight, aetiology for hepatic failure, presence of diabetes mellitus, hypertension, hepatitis B and C infection, renal dysfunction pre transplant (RD pre) and ISS.

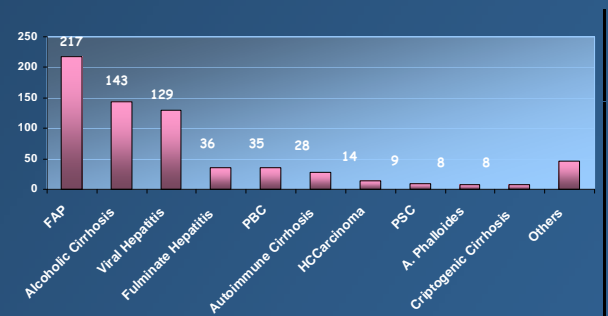
Laboratorial data: serum creatinine (Scr) values and/or glomerular filtration rate (GFR), determined by Cockcroft-Gault equation, at the last observation pre transplantation and at days 1, 7 and 21, month 6 and every year post transplantation.

RESULTS

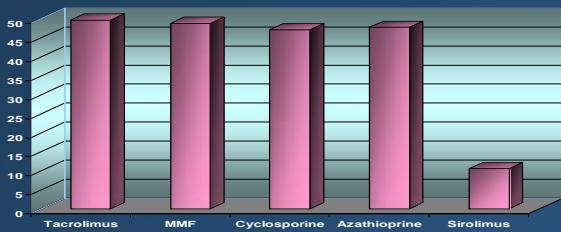
708 OLT recipients:

- Male gender 64%
- Mean age: 44±12.6 years
- Diabetes in 106 patients (17%); Hypertension in 117 patients (18.8%)
- Mean follow up time 3.6 years, 29% > to 5 years
- Mean transplant survival: 75% at 12 months and 69% at 3 years
- RD pre (GFR < 60 ml/min or Scr >1.5 mg/dl): 133 recipients (21.6%)
- Retransplanted: 82 recipients
- Death: 152 recipients

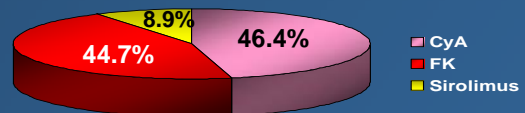
Indications for transplantation



Immunosuppression accomplished



Present Immunosuppression



GFR < 45ml/min

Spearman Correlation

	r	p
Cyclosporine	0.12	0.003
Azathioprine	0.14	0.001
MMF	-0.16	<0.001
Tacrolimus	-0.12	0.02
Sirolimus	0.16	<0.0001

Linear Regression

	CI 95%	p	R ²
Cyclosporine	1.36 to 2.90	<0.001	0.20
Sirolimus	0.05 to 0.31	0.008	
MMF	-0.22 to -0.07	0.001	

MORTALITY

Spearman Correlation

	r	p
Tacrolimus	-0.12	0.006
MMF	-0.09	0.02
Azathioprine	0.11	0.007

Linear Regression

	CI 95%	p
Tacrolimus	-0.16 to -0.04	<0.001

CONCLUSIONS

The use of FK and MMF seems to have better outcome in what concern to renal function, in contrast to CyA and Azathioprine.

Sirolimus may be important preventing further progression of renal failure.

References:

- 1- Créput C, Blandin F, Deroure B, et al. Long term effects of calcineurin inhibitor conversion to mycophenolate mofetil on renal function after liver transplantation 13: 1004-1010, 2007
- 2- Reich DJ, Clavien PA, Hodge EE. Mycophenolate mofetil for renal dysfunction in liver transplant recipients on cyclosporine or tacrolimus: randomized, prospective, multicenter pilot study results *Transplantation* 80:18-25, 2005
- 3- Fairbanks KD, Eustace JA, Pine D, Thuluvath PJ. Renal function improves in liver transplant recipients when switched from calcineurin inhibitor to sirolimus *Liver Transplant* 9: 1079-1085, 2003