Original Research Paper

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Nephrology

A STUDY ON THE OUTCOME OF SPOUSAL RENAL TRANSPLANTION

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KEYWORDS :

AIM

This study was undertaken to evaluate the outcome of spousal donation kidney transplants

MATERIALS & METHODS

Retrospective analysis of data from spousal kidney transplantation (Tx) done between Sep 2008- Nov 2010 in the Department of Nephrology, Madras Medical College.We got approval from Hospital ethical committee.We compared the data with live related (non spousal) transplantation of our department. The patient and graft survival were calculated with Kaplan–Meier analysis. Death of recipient due to any cause was counted as graft loss. Determinants analyzed -Donor age,Donor-recipient age difference,Donor GFR,Ischemia time,Immunosuppressive protocols, incidence of acute rejection episodes & effect of early acute rejection episodes on graft function at 6 months & one year were analysed

PROFILE

Total no of transplants done involving spousal donor were 22. Two patients died during follow-up.Mean duration of CKD & dialysis before Tx were 14.6 months & 7 months respectively. Mean duration of follow up was 14.1 months.

Recipients Profile

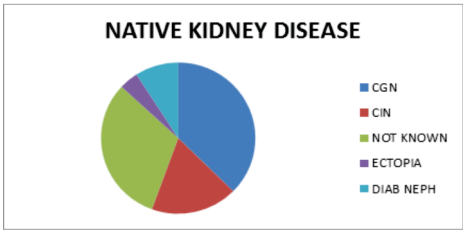
Sex	No	percentage	Mean age in years
Male	21	95.4	38.3
Female	1	4.6	

Donors Profile

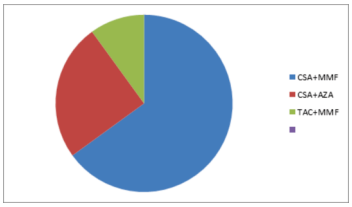
sex	No	percentage	Mean age in years
Male	1	4.6	32.7
female	21	95.4	

Of the 22 recipients(mean age 38.2Y), 21(95.4%) were male & one(4.6%) was a female.The mean age of donors was 32.7 years & they had a mean GFR of 100.9 ml/min.Mean age difference between donor & recipient is 6.7 years. Postsurgery all the donors were doing well.

Among the native kidney diseases CGN was the commonest (31%),followed by CIN (18%) . NKD is not known in 31%



Immunosuppressive protocol



Immunosuppressive protocols used 25%(n=5)on CSA+AZORAN, 65%(n=13) on CSA+ MMF, & 10%(n=2) on TAC +MMF.

OBSERVATION

One patient had delayed graft function(n=1)(5%.)Four had Acute cellular rejection(ACR) (20%). (3 had Biopsy proven acute rejection(BPAR),1 presumed Acute Rejection) ,Acute tubular necrosis(ATN) in 2(10%) pts).One (5%) had CNI toxicity.CMV infection & Graft dysfunction (GDF) documented in 5 pts (22.7%) .[mean time of diagnosis 45 days]. Infection occurred in 3 pts(10%). ;2 had Urinary tract infection; one had Pulmonary Tuberculosis (5 months post Transplant).New onset diabetes after transplant(NODAT) developed in 6 patients(30%) [mean time of onset 7.8 months].One patient developed Antibody mediated rejection(AMR) at 18 months.

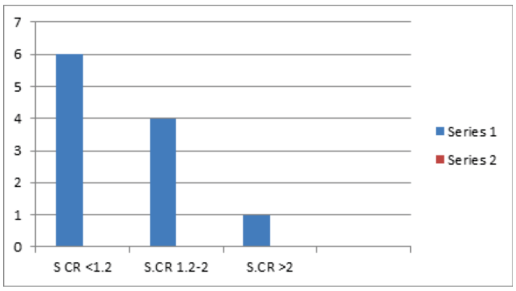
Graft dysfunction causes

	Acute cellular rejection	Antibody mediated Rejection	ATN	CNI toxicity	CMV
NO	4	1	2	1	4
PERCENTAGE	20	5	10	5	20

Other events

Events	DGF	CVA	PULM .TB	UTI	NODAT
No	1	1	1	2	6
PERCENTAGE	5	5	5	10	30
TIME OF ONSET		12 M	5M	2 M	8M

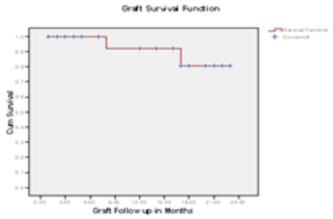
Graft function at 6 months follow up (n=19) ,11pts (57%) had S.Cr< 110 µmol, 6 (31%) had S.Cr 111-176µmol , 2(10.5%) had >176 µmol. .During 1 year follow up of 11 pts, 6 pts(54.5%) had Cr <110µmol , 4 (36.3%) had S.Cr of 111-176 µmol, & 1 pt(09%) had S.Cr>176 µmol



DISCUSSION

The incidence of Acute rejection in live related Transplantation [our dept statistics]was 16.3 % whereas the same was 20% in spousal; Incidence of CMV were 5.2% & 20% respectively. Data of GDF-CNI toxicity were 2.5%(LRTx) and 5%(spouse); 54.5% of LRTx had uneventful course whereas only 30% in spousal Tx.

Kaplan_Meier Analysis of graft survival



Correlation between donor age ,donor - recipient age difference ,donor gfr ,ischemia time & graft function (pearsons correlation)

	6 months- p value	12 months- p value
Donor age0	0.021	0.175
Age difference	0.075	0.280
Donor Gfr	0.182	0.168
Ischemia time	0.196	0.454

Donor age ,Donor-recipient age difference, Donor GFR, ischemia time,type of immunosuppression & early rejection episodes have no statistically significant correlation on graft function at 6 months &1 year

Immunosuppressive Protocols & graft Function(One way anova)

		N	Mean	Std.Deviation	P value
Creat 3month	CSA+MMF	14	93.36	21.706	.101
	CSA+AZA	4	143.25	79.918	
	TAC+MMF	2	96.00	9.899	
Creat 6month	CSA+MMF	12	115.50	38.651	.372
	CSA+AZA	4	149.00	56.751	
	TAC+MMF	2	110.00	14.142	
Creat 1 year	CSA+MMF	7	115.57	32.398	.650
	CSA+AZA	3	145.00	70.292	
	TAC+MMF	1	129.00		

Not significant

Influence of early Acute rejection episodes on graft function at 6 months & 1 year – chi square tests

	Acute rejection Present	**AR – Absent**	**Total**	**P value**
No	5	18	22	.158
%	18	82	100	

Not significant

Comparing live related tx events with spousal related transplant

Parameters	**Spousal Related**	**Live Related**
Acute rejection	20%	16%
CMV infection	22.7%	5.2%
UTI	10%	3.8%

CONCLUSION

There is a biased trend in spousal transplant where more often wife donates but the reverse is very low.There is increased incidence of acute rejection episodes in spousal related transplant. Donor age ,Donor-recipient age difference, Donor GFR, ischemia time,type of immunosuppression & early rejection episodes have no statistically significant correlation on graft function at 6 months & one year. In 1995,Terasaki et al. analysed data from the UNOS renal Transplant Registry. They reported high survival rates of kidney transplant from spousal donors. The three-year patient and graft survival rates (85%) for kidneys from 368 spouses were similar to kidneys from 3368 parents The good survival rate in spousal transplants was observed despite poor HLA match suggesting efficacy of currently used immunosuppressive drugs.Other mechanisms that have been thought to contribute include improved patient compliance with immunosuppressive medications, and possible tolerance to spousal antigens by sexual contact.

Limitations of the study:

Small cohort: Heterogenous in terms of immunosuppressive protocol used,HLA typing not done