EVALUATION OF THE FACTORS AFFECTING GRAFT FUNCTION AND SURVIVAL IN RENAL TRANSPLANT RECIPIENTS WITH REFLUX NEPHROPATHY

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Objectives:

Reflux nephropathy (RN) has an important place among the etiologies of end-stage renal disease (ESRD). Renal transplant recipients with RN are at high risk for the development of urinary tract infections (UTI). To reduce this risk nephrectomy is performed in selected cases. The influence of pretransplant nephrectomy on posttransplant UTI episodes and graft survival remained to be elucidated. Thus, we aimed to determine the factors affecting graft survival and the significance of pretransplant nephrectomy and posttransplant urinary tract infections in these population.

Methods:

Sixty-two patients who underwent renal transplantation between January 1996 and January 2011 were included in this retrospective study. The outcomes of patients with RN were compared with a control group that consisted of age-matched, nondiabetic patients whose primary disease was chronic glomerulonephritis. Diabetes mellitus, age < 18 years old, early graft loss after transplant surgery, posttransplant reflux nephropathy and the other urinary tract abnormalities (calculi, cyst etc.) were the exclusion criterias of the study.

Table 1. Demographic features of the groups.

	RN (n=31)	GN (n=31)	p	PTN (+) (n=21)	PTN (-) (n=10)	p
Age (years)	34.0±6.0	34.1±6.7	0.953	35.2±6.1	31.5±5.2	0.13
Gender (Male)	13	22	*0.02*	10	3	0.35
Weighyt (kg)	57.7±10.3	63.5±8.8	*0.02*	58.6±10.5	55.5±10.1	0.46
BMI (kg/m²)	21.9±3.5	21.3±0.8	0.519	21.8±3.6	22.1±3.7	0.80
Donor Age (years)	48.5±9.8	44.7±9.9	0.164	48±10.1	49.5±9.8	0.71
Donor Gender (M)	14	11	0.111	10	4	0.69
Donor type (Living)	28	29	0.641	18	10	0.20
Donor creatinin	0.82±0.15	0.82±0.22	0.961	0.83±0.14	0.80±0.18	0.61
HLA missmatch	2.8±1.1	3.2±1.1	0.158	2.8±1.2	2.9±0.9	0.92
Follow-up time	83.0±33.5	89.8±43.6	0.481	84.3±30.6	87.5±42.6	0.79
Duration on dialysis	40.3±32.9	21.5±16.1	*0.006*	37.4±32.5	46.5±34.5	0.48

RN: Reflux nephropathy. GN: Glomerulonephritis. PTN: Pretransplant nephrectomy

Table 2. Urinary tract infection (UTI) episodes and infection agents of the groups.

	RN (n=31)	GN (n=31)	p	PTN (+) (n=21)	PTN ( ) (n=10)	p
Early UTI episode	9	3	*0.045*	7	2	0.44
Mean UTI episode	2.32±2.79	0.58±1.05	*0.002*	2.33±2.68	2.30±3.16	0.97
Overall UTI episode	72	18	*0.002*	49	23	0.69
Hospitalisation	2.26±2.28	1.47±1.47	0.11	2.19±1.88	2.40±3.06	0.81
E.Coli	44	8	*0.006*	22	15	0.29
Candida	1	0	0.32	1	0	0.48
Citrobacter	1	0	0.32	1	0	0.48
MSKNS	1	0	0.32	1	0	0.48
MRKNS	1	0	0.32	1	0	0.48
MRSA	1	0	0.32	0	1	0.14
Enterococ	7	2	0.11	5	2	0.09
Klebsiella	9	6	0.58	4	5	0.33

Table 3. Posttransplant graft functions and graft loss numbers of the groups.

	RN (n=31)	GN (n=31)	p	PTN (+) (n=21)	PTN (-) (n=10)	p
Delayed Greft Fonction	6	9	0.37	5	1	0.36
Acute Rejection	12	10	0.59	9	3	0.49
CAN	6	4	0.55	2	3	0.29
Allograft loss (1. year)	0	0	1.0	0	0	1.0
Allograft loss (5. year)	1	1	1.0	0	1	0.14
Allograft loss (all)	4	1	0.16	2	2	0.41

RN: Reflux nephropathy. GN: Glomerulonephritis. PTN: Pretransplant nephrectomy. CAN: Chronic Allograft Nephropathy

Figure 1. Graft survival of RN and control (CGN) group.

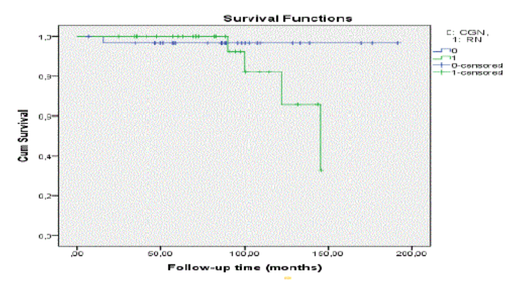
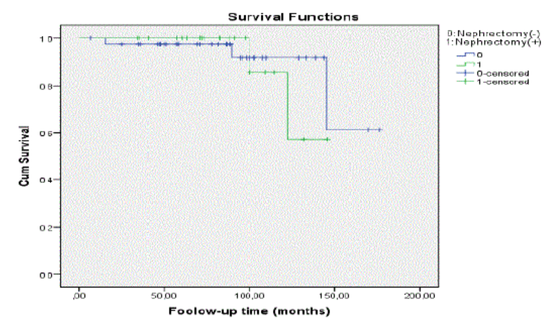


Figure 2. Graft survival of nephractomy (+) and nephrectomy (-) grcup.



Results:

Group 1 (RN) consisted of 31 patients, including 13 males with a mean age of 34.0±6.0 years. Group 2 included 31 patients, including 22 males with a mean age of 34.1±6.7 years. There was no significant difference with regard to age, gender, follow-up time, donor type, donor age, modality of dialysis, immunsupressive regimens or HLA match between the 2 groups. As expected, urinary tract infection episodes were significantly higher in RN group at posttransplant early and late period (p= 0.002). There were no significant difference about graft functions, biopsy-proven rejection episodes and graft survival between two groups. E.Coli (%64.1), Klebsiella (%18.5) and Enterococ (%11.1) were the most frequent infection agents. Pretransplant nephrectomy were performed 21 (%67.7) of the RN patients. UTI episodes were similar and there were no significant difference about graft functions, rejection episodes and graft survival between two groups. Graft survival rates of RN versus control group in the first, fifth and ten years were 100%, 100% and %82.1 versus %100, %96.7, and %96.7 respectively. Graft survival rates of nephrectomy (+) versus nephrectomy (-) group in the first, fifth and ten years were 100%, 100% and %85.7 versus %100, %97.5 and %92.1, respectively.

Conclusions:

Despite the increase in the incidence of posttransplant UTI episodes, renal transplantation is safe and effective for patients developing ESRD due to RN. Posttransplant UTI episodes and graft survival rates were similar in patients with or without nephrectomy. Pretransplant nephrectomy should be performed only in selected patients with reflux nephropathy.

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