

THE NAMES OF GOD



نفروتوکسین‌ها و کلیه

Kidney and Nephrotoxins

۱۳-۱۵ مهر ۱۴۰۱-تهران

Prevalence and Prognosis of Post-transplant Glomerulonephritis in kidney Transplant biopsies - A Single-Center Report

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- Recurrence of glomerulonephritis after kidney transplant may be associated with allograft loss.
- To date, the prevalence, etiology, pathogenesis, prognosis, and mean interval to post-transplant (post-Tx) GN are not fully elucidated.
- The treatment and outcome of post-Tx GN are also somewhat unknown.



- ✓ Timely diagnosis and treatment of post-Tx GN may play an important role in increasing the allograft and patient survival.
- ✓ This study aimed to evaluate the frequency and prognosis of de novo or recurrent GN.



Method

- ✓ We reviewed 1305 kidney transplant biopsy samples obtained between 2006 and 2020.
- ✓ From 1305 kidney transplanted biopsies, 350 repeated biopsies for transplant rejection were excluded
- ✓ The biopsy specimens were divided into post-Tx GN (recurrent or de novo) and control groups (i.e., no detectable GN in biopsy).
- ✓ Demographic and baseline characteristics of the patients and kidney survival rates were analyzed



- ✓ Demographic data
- ✓ underlying disease
- ✓ duration of dialysis before Tx
- ✓ type of Tx donor
- ✓ serum creatinine level
- ✓ amount of daily proteinuria at the time of biopsy (baseline) and at the end of the study
- ✓ the immunosuppressive protocols
- ✓ the last patient status (survived vs. non-survived)
- ✓ graft status (functioning vs. on kidney replacement therapy)
- ✓ results of kidney pathology



Results

- Among 955 analyzed biopsies:
 - mean age: 45.4 ± 12.59 years
- mean transplantation duration:
 - 88.3 ± 70.71 months, 68% males
- The GN frequency was 10.78%



The most common recurrent post-transplant GN (post-Tx GN):

- IgA nephropathy (22.3%)
- secondary focal segmental glomerulonephritis (FSGS, 19.4%)
- primary FSGS (19.4%)
- membranous glomerulonephritis (17.5%)



- The mean serum creatinine and proteinuria were 3.27 ± 1.97 mg/dl and 2730 ± 1244 mg/day at the biopsy time and 2.36 ± 1.86 mg/dL and 1145.50 ± 1345 mg/day, at the end of the study.
- There was a significant relationship between baseline serum creatinine and graft loss ($P < 0.001$).



➤ In the patients who had a previous kidney biopsy(55.49%) ,

82.7% showed recurrence of primary GN

17.3% had denovo GN.



Table 2: Frequency of post-Tx GN by the underlying disease

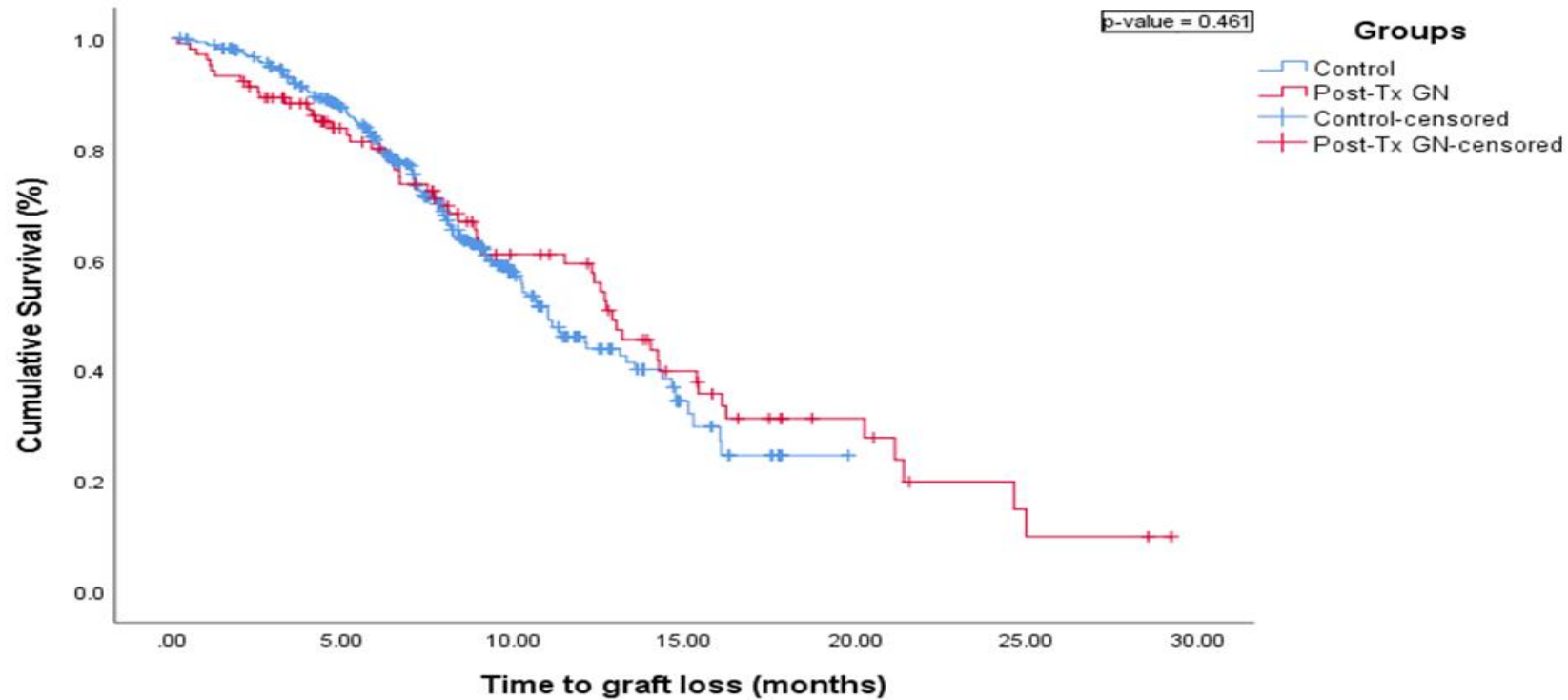
Primary Disease	IgA Nephropathy	Membranous GN	Unknown	FSGS	HTN	DM	MGN	Congenital	RCC	ADPKD	MPGN	Interstitial nephritis	Lupus nephritis	Amyloidosis
Recurrent GN														
IgA Nephropathy	7	1	13	1	1	0	0	0	0	0	0	0	0	0
Secondary FSGS	0	0	9	4	4	1	1	1	0	0	0	0	0	0
Primary FSGS	1	0	13	3	1	0	0	0	1	1	0	0	0	0
Membranous GN	1	5	6	0	1	0	0	1	0	2	1	1	0	0
Crescentic GN	0	0	1	0	5	0	0	0	0	0	0	0	1	0
Non-specific GN	0	0	2	0	2	0	0	1	0	1	0	0	0	0
Glomerulosclerosis	0	0	1	0	0	2	0	0	0	0	0	0	0	0
Lupus nephritis	0	0	0	0	0	0	0	0	0	0	0	0	2	0
Amyloidosis	0	0	0	0	1	0	0	0	0	0	0	0	0	1
MPGN	0	0	0	0	0	1	0	0	0	0	0	0	0	0
IC GN	0	0	1	0	0	0	0	0	0	0	0	0	0	0



- One-, five-, and ten-year graft survival rates were 93%, 80%, and 61% in the post-Tx GN, and 97%, 81%, and 50% in the control group (p-value=0.026).
- Graft lifespan independently affected graft survival (p-value <0.001).
- The other covariates had no significant impact on graft survival. (diabetes mellitus, hypertension, smoking, family history of underlying diseases, sex, serum creatinine level)



Figure 1. Kaplan-Meier curve demonstrating median time to graft loss, post-Tx GN = post-transplant glomerulonephritis (p-value=0.461).



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Among the 103 post-Tx GN:

- ✓ 49 patients (47%) had functional grafts with GFR above 15 ml/min
- ✓ 36 patients (35%) had graft loss, who underwent dialysis
- ✓ 18 patients (17.5%) died due to infection, heart disease, cancer, and other causes



In 852 control patients:

- ✓ 553 (65%) had functional graft with GFR above 15 ml/min
- ✓ 162 patients (19.1%) had graft loss, who underwent dialysis
- ✓ 137 patients (15.9%) died.
- ✓ So the rate of graft loss was significantly higher in post- Tx GN group ($p < 0.0003$)



- ✓ the median time to graft loss was 11.33 months in all patients.
- ✓ The median time to graft loss, was not significantly different between the post-Tx GN (12.89 months) and the control groups (11.00 months) (p-value = 0.461)



Conclusion:

- Our study showed a wide range of glomerulonephritides, either relapsing or denovo may recur after kidney transplantation which reduces the lifespan of the graft.
- Post-Tx GN was not significantly associated with graft loss.
- Baseline serum creatinine and graft lifespan had a significant association with graft loss.
- Optimal management of recurrent or de novo GN should be one of the main focuses of post-transplant care.



THANK YOU



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