Frequency of Glomerular Diseases Post Renal Transplantation in Oman- a single center experience

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Aim and Specific Objectives

Overall aim: This study aims to determine the frequency of recurrent and de novo glomerular diseases post-renal transplantation in Oman.

Specific objectives:

To determine the frequency of glomerular disease occurrence after renal transplant.

To determine whether the glomerular diseases are recurrent or de novo.

To identify glomerular causes of end-stage renal disease (ESRD) in these patients.

To determine the time from transplantation to identification of the glomerular disease.

Background

Although kidney transplantation offers the best outcome for patients with end stage renal disease, one of the factors associated with graft failure is recurrence of a previous glomerulonephritis or development of a new kidney disease, known as 'de novo'.

In a study conducted in Pakistan, out of 163 live-related transplant kidney biopsies, 27% cases showed recurrence of the original disease, whereas the prevalence of de novo glomerulonephritis was 1.9%.

Data from the Dialysis and Transplant (ANZDATA) Registry accumulated over 30 years showed that recurrence was reported in 479 of 4637 patients, and of these, 212 lost their allograft due to recurrence. Transplant recipients with recurrent disease were twice as likely to lose their allografts compared to those without recurrence (adjusted hazard ratio 2.04 [1.81-2.31])

Materials and Methods

A retrospective study that included renal allograft biopsy samples received in the department of Pathology between biopsies between 1st January 2010 and 1st January 2021. Biopsies with clear evidence of GN based on light microscopy and immunofluorescence and/or electron microscopy were included. Patients' age, sex, date of transplant cause of ESRD (if available) were recorded. The time from transplantation to diagnosis was also recorded.

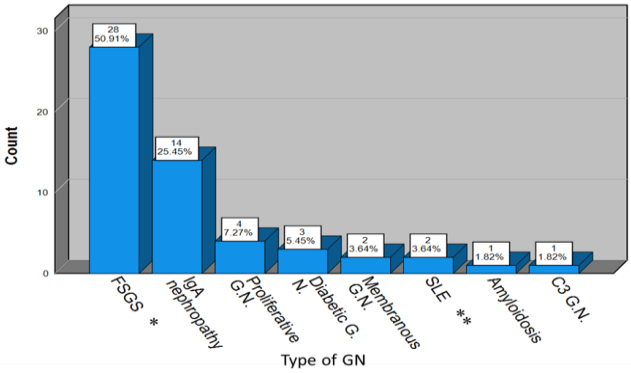
Results

There were a total of 523 allograft biopsies during the study period out of which 55 (10.5%) had a biopsy-proven report of glomerular disease.

17 were females (30.1%) biopsies and 38 (69.9%) males to with an average age of 41.1 ±14 years. The most frequent GN was FSGS in 28 cases (50.9%), followed by IgA nephropathy in 14 cases (25.5%). Recurrence of GN was seen in 25 (45.5%), including 12 cases of FSGS, 9 IgA nephropathy, 1 case of C3 GN, 1 proliferative GN, and 1 of amyloidosis.

Conclusion

The frequency of glomerular disease post-transplantation was 10.5%. The most common glomerulonephritis and recurrent GN was FSGS (50.91%), followed by IgA nephropathy (25.45%). 4 de novo cases, including FSGS and IgA Diabetic GN, and Membranous GN, 47.3% of cases was unknown whether de novo or recurrent. Time to occurrence post-transplantation ranged from 0 – 19.6 years with a mean of 5.3 years.



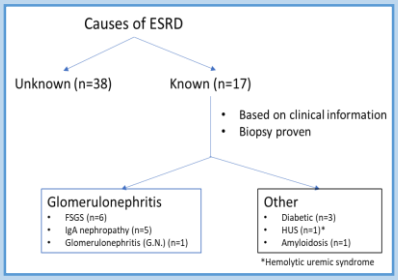
*FSGS: Focal segmental glomerulosclerosis; **SLE: Systemic lupus erythematosus.

Prevalence of recurrence and de novo disease

Variable	Frequency	Percent
Recurrence	25	45.5%
De novo	4	7.3%
Unknown	26	47.3%
Total	55	100.0%

the time from transplantation till the appearance of the disease (n=55)

Variable	Range (yrs)	Mean (yrs)	Median (yrs)	SD
FSGS (n=28)	0 – 19.6	3.9	2.8	3.8
IgA nephropathy (n=14)	0 – 16.6	6.4	6.7	0.6
Others (n=13)	1 – 13.4	7.2	6.5	3.9



References:

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2. Allen PJ, Chadban SJ, Craig JC, et al. Recurrent glomerulonephritis after kidney transplantation: risk factors and allograft outcomes. *Kidney Int*. 2017;92(2).