KIDNEY TRANSPLANT OUTCOMES IN CFHR5 NEPHROPATHY

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INTRODUCTION AND AIM

CFHR5 nephropathy is a familial glomerulopathy caused by a mutation of the Complement Factor H and related protein 5 (CFHR5) gene of the alternative complement pathway. It presents with hematuria and proteinuria, and finally progresses to end stage renal disease (ESRD) in 50% of the cases. The aim of the study was to investigate the outcomes of patients with CFHR5 nephropathy after kidney transplantation.

METHODS

We enrolled kidney transplant patients with the established mutation of the CFHR5 gene (duplication of exons 2 to 3). Clinical information was obtained from both the review of the medical record and the clinical evaluation at every visit. Recurrence of the disease was evidenced either by allograft biopsy or by the presence of microscopic hematuria with or without proteinuria not attributed to other cause. Graft loss was defined as return to renal replacement therapy. Results are expressed as medians.

RESULTS

We identified 17 transplanted patients (12 male, 5 female) followed-up at our department with CFHR5 nephropathy out of 175 confirmed mutation carriers in Cyprus. The median age of the patients was 56 years old (range 43-75). Median age at the time of kidney transplantation was 49 years old. 29% of the transplants were from living donors and 71% from deceased donors. At the time of the follow-up, 93% were on maintenance therapy with CNI/MMF/Prednisone and 7% on non-CNI based protocol maintenance protocol. At the time of the follow-up, 71% of the patients had functional kidney allograft and 29% developed ESRD. 12% died with a functional graft. Among patients with functional graft, median serum creatinine was 1.38 mg/dl and median survival of the allograft was 114 months. Recurrence of the disease was observed in 11 patients (73%). Specifically, microscopic hematuria was observed in 64%; proteinuria in 53% (median proteinuria 651 mg/day) and biopsy-proven recurrence in 12%. Median time of graft failure due to recurrence was 180 months from the time of transplantation ***(Table 1***). Both patients with biopsy-proven recurrence received plasmapheresis and i.v. methylprednisolone pulses (followed by higher steroid doses p.os) but had no response. Based on their clinical presentation, all other patients did not receive any additional treatment for the recurrence of the disease, and are being on close follow-up.

Table 1: **Baseline characteristics of transplanted patients with CFHR5 nephropathy**

Men (%)	12/17 (71%)
Women (%)	5/17 (29%)
Median age of patients (years)	56 (range: 43-75)
Median age at transplantation (years)	49
Living/Deceased transplants (%)	5/17 (29%) / 12/17 (71%)
Functional graft (%)	12/17 (71%)
Graft loss-ESRD (%)	5/17 (29%)
Deaths (%)	2/17 (12%)
Median serum creatinine (mg/dl)	1.38
Median graft survival time (months)	114
Recurrence (%)	11/15 (73%)
Microsopic Hematuria / Proteinuria / Biopsy proven recurrence (%)	9/14 (64%) / 8/15 (53%) / 12%
Median proteinuria (mg/24h)	651
Median time for graft failure (months)	180

CONCLUSIONS

The recurrence rate of CFHR5 nephropathy and the incidence of graft failure are high (73% and 29% respectively). Based on these, prophylactic treatment of patients with eculizumab -a monoclonal antibody that specifically binds to the complement protein C5 with high affinity, thereby inhibiting its cleavage to C5a and C5b- prior to kidney transplantation should be considered. Further studies and larger series of patients are needed to confirm these results.

CATEGORY

N2-Renal Transplantation. Epidemiology and Outcome

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DOI: 10.3252/pso.eu.54ERA.2017