ACUTE KIDNEY INJURY IN RENAL TRANSPLANT PATIENTS. HISTOLOGICAL AND CLINICAL PARAMETERS OF DISMAL OUTCOME.

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OBJECTIVES

Clinical and Histological evaluation of Acute Kidney Injury in patients with renal transplant.

METHODS Patients' Characteristics

In forty seven patients (31 men), of mean age 53 13 years who presented with acute decline of renal function 9.6 months (median value, range 0.6-216 m), after the date of transplant, a renal biopsy was performed.
Delayed graft function suffered 42 pts (89%). All patients were on triple immunosuppressive treatment (CNI's, steroids, MPA). Estimated GFR immediately before acute kidney injury (AKI) was 34 24 ml/min, while during the acute phase of decline of renal function eGFR was 24 14 ml/min.

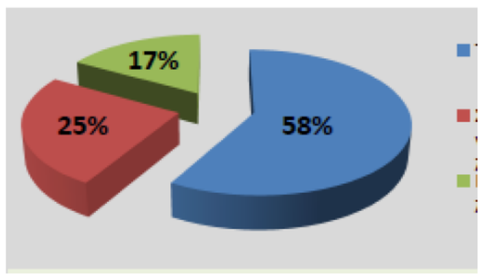
RESULTS

In 27 of them (58%), acute rejection episode was the cause of AKI (cellular 23, humoral 1, mixed 3 with C4d positivity in 12 patients). In 7 pts, findings of chronic allograft nephropathy were noticed (IFTA-banff 5) and 13 suffered from other disorders (interstitial nephritis, CNI toxicity). (Graft 1)

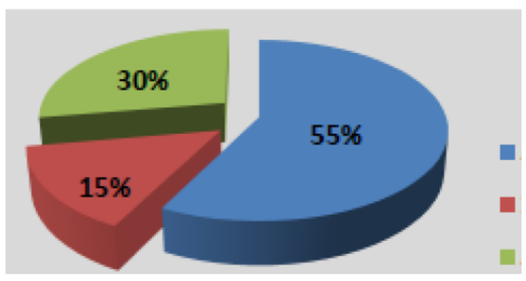
Acute rejection was treated with steroids (23 pts), with ATG (4 pts) whilst in the rest, treatment modification strategies were adopted (switch to everolimus, RAAS inhibitors, CNI minimization etc.). After therapy, improvement of renal function was noticed in 21 pts (eGFR 30±20), stabilization in 15 while 11 entered to end stage renal disease in a period of 0.6±0.5 years after the biopsy.

In six pts CMV disease was developed that was treated successfully and 17 developed urinary infections treated without complications. There were no deaths of pts during the follow up.

Graphs 1,2
Results of renal biopsies



Outcome of Patients with C4d positivity



Statistical analysis showed that the presence of extended criteria donor of renal allograft (in 19 pts), HLA mismatch, gender, donor and recipient age and the presence of infection were not correlated to the dismal outcome of these pts regarding renal survival. On the other hand, humoral and mixed type rejection, C4d positivity, the presence of glomerular and vascular sclerotic changes led to reduced GFR and ESRD (Graft 2) (p=0002, 0003, 001 relatively).

CONCLUSIONS

In these patients with the high incidence of delayed graft function, acute kidney injury was mainly the result of acute rejection episode. Dismal outcome of renal survival (reduced GFR, ESRD) was related to acute humoral and mixed rejection type, C4d positivity and glomerular sclerotic changes the later mainly related to the high incidence of DGF.

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