ABSTRACT

UTILIZATION OF IMMUNOSUPPRESSANT DRUG IN RENAL TRANSPLANT RECipients

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Background: Immunosuppressant drug prescribed to renal transplant recipients play a vital role in the graft and patient survival after transplant.


Materials and Methods: Retrospective and prospective study were conducted at Muljibhai Patel Urological Hospital, Nadiad. In a retrospective study, patients who underwent renal transplantation between July 2004 and June 2011 were enrolled and followed up till their last followed up visit on or before June 2012. Data including immunosuppressant drug prescription information, rejection episode, CNI toxicity, information for Infection and NODAT were collected.
In prospective study, patients who underwent kidney transplantation between January 2013 and August 2013 were enrolled after prior permission from IRB of Institute. Relevant Data were collected and analyzed by SPSS software using chi square test & T test.

**Results and Discussion:** In retrospective study, total 613 renal transplant recipients were enrolled. Antibody (Inducing agent) was used in 36% of recipients and usage was significantly higher in aged recipients, higher HLA mismatch recipients, cadaver donor (P < 0.00001), PCM treated recipients. Antibody usage was significantly associated with lower rejection episode (P = 0.0487) and creatinine level (P = 0.0464).

Use of antibodies mainly ATG, Tacrolimus, MMF has increased over the years and PTM regimen is most preferred regimen. Patient survival (P = 0.0072), hypertension (P = 0.0001) was significantly higher in tacrolimus treated patients while CNI toxicity was significantly higher in CyA arm (P = 0.0287) but for other parameters were similar between two CNIs. Among antiproliferative agents (MMF and AZA), we observed non-significant difference for all parameters except hypertension which was significantly lower in AZA arm (P = 0.0012). Among various drug regimen (PTM, PTA, PCM, PCA), PTM associated with better patients survival (P = 0.0074) and less hypertension (P < 0.0001) as compared to other drug regimens but other parameters were similar.

Prevalence rate of NODAT was 33.89% and prevalence rate of NODAT was significantly higher in aged (P < 0.0001), higher HLA mismatch (P = 0.015) and PTA treated recipients (P = 0.046) while other factors did not affect the prevalence of NODAT. NODAT significantly increases CMV infection but not other infections. Prevalence rate of infection was 63.3%. Infection was significantly higher in antibody treated (P = 0.0144), CyA treated (P = 0.0219), MMF treated (P = 0.0019), PCM treated (P = 0.0023), and aged (P = 0.0014) recipients.

Prevalence of infection was 73.7% in prospective study and *Klebsiella* was the most common infectious agent. The Higher rate of infection was observed in antibody treated (P = 0.0074) and aged (P = 0.0237) recipients,
but it was similar between CNI agents, Antiproliferative agents, and different
drug regimen. Infections were significantly higher during first three months of
transplant and UTI was the most common type of infection.

**Conclusion:** We conclude that use of ATG, Tacrolimus, and MMF has
increased between year 2004 and 2011 in renal transplant recipients. PTM is
the most commonly used regimen and associated with better patient survival.
Almost one-third patient develop NODAT which is more common in patients
with elderly, higher HLA mismatch and receiving PTA regimen. Infections
following renal transplant occur in almost more than two third of recipients.
Use of ATG and increasing age is a risk factor for infection following renal
transplant.