KSN-17-P169

DETECTION OF PRE-TRANSPLANT DONOR SPECIFIC ANTIBODIES IN LIVING RELATED RENAL ALLOGRAFT TRANSPLANT AND ITS CLINICAL SIGNIFICANCE: A SINGLE CENTRE EXPERIENCE

*Monika JAIN

INSTITUTE OF MEDICAL GENETICS AND GENOMICS, SIR GANGARAM HOSPITAL, India

Introduction: The clinical impact of anti-HLA antibodies is one of the major areas of interest of research in renal allograft transplant and lot of advances has taken place in the methodology of detection of these antibodies. Luminex Platform has emerged as a favoured technology of detection of HLA antibodies in addition to the CDC crossmatch (XM) which is still the gold standard. Pre transplant (Tx) Luminex DSA crossmatch is being recently introduced in India as a prognostic marker for graft survival to detect antibodies that are missed by CDC XM as antibody mediated rejection (AMR) is still an issue of concern in Tx patients with a CDC negative XM. We present here our experience with the Luminex based DSA crossmatch test done in the recipients who underwent transplant at the Sir Ganga Ram Hospital in the year 2013-14 with one year follow up post transplant. The aim of the study was to evaluate the impact of the pre-Tx DSAs detected by Luminex crossmatch on the clinical outcome of the renal graft over a period of one year.

Methods : We began performing DSA (donor specific antibody) monitoring protocol in the year 2013 at our center. The present study includes patients from January 2013 to December 2013 with one year follow up post kidney transplant. Pre-transplant sera from 46 renal transplant recipients with a negative CDC crossmatch were assessed for donor-specific antibodies (DSA) detection on Luminex Platform using Lifecodes DSA kit (Immucor). The serum samples with DSA (HLA-Class I or II or both) of MFI (mean fluorescent intensity) value more than 500 was considered to be positive. The results were then correlated with the clinical outcomes of the renal allograft.

Results : DSAs were found in 11 out of 46 recipients (23.9%). Of the eleven DSA positive patients, 3 patients (27.27%) developed acute graft rejection. All these 3 patients had positive C4d staining in their biopsies and the MFI value of the DSA on Luminex platform was found to be more than 1000. The remaining 8 DSA positive patients showed no rejection and had stable graft function. The MFI value of the DSAs in these patients ranged from 500-1000.
All the 35 DSA negative patients (76.1%) were also having stable graft function

in one year follow up. The AMR was more frequent in the DSA positive group with no or less AMR in DSA negative group (27.27% versus 76.1%).

Conclusions : The present study evaluates the importance of Luminex DSA crossmatch test in detecting the donor specific HLA antibodies over the CDC crossmatch. There was a higher incidence of AMR in patients with pre-transplant DSA despite a negative CDC crossmatch. The present study clearly establishes that the Luminex DSA crossmatch is helpful for predicting post transplant graft outcome or rejection and DSA MFI value above 1000 should be considered for further evaluation by Single bead assay (SAB) by Luminex. The laboratory cut off value of the MFI for positive DSA was increased from 500 to 1000. The clinical impact of the pre-Tx DSAs detected by Luminex techniques has to be fully evaluated in terms of graft survival and definition of acceptable grafts with more retrospective studies with large sample size.

Keywords : donor specific antibodies, Luminex crossmatch