KSN 2018
Seoul, Korea · May 17 - 20

Abstract Type : Poster
Presentation No. : PTL 019

Efficacy of the C3d assay for Prediction of Antibody-mediated Rejection in Kidney Transplant Recipients with Donor Specific Anti-HLA Antibodies

Woo Yeong Park[1], Wonmok Lee[2], Sang Mok Yeo[1], Hayeon Park[1], Jin Hyuk Paek[1], Seong Sik Kang[1], Kyubok Jin[1], Sung Bae Park[1], Namhee Ryoo[2], Seungyeup Han[1]
[1]Department of Department of Internal Medicine, Keimyung University School of Medicine, Keimyung University Kidney Institute, Korea, Republic of
[2]Department of Department of Laboratory Medicine, Keimyung University School of Medicine, Keimyung University Kidney Institute, Korea, Republic of

Objectives: Donor specific antibody (DSA) is an essential factor for antibody-mediated rejection (AMR), but not all patients with DSA are diagnosed with AMR. The aim of this study was to investigate the association between DSA identified by single antigen bead (SAB) assay and C3d positive DSA with allograft biopsy findings in AMR.

Methods: Stored sera from 24 kidney transplant recipients (KTRs) with DSA confirmed by SAB assay were tested using the C3d assay on Luminex platform. We compared clinical parameters, pathologic findings, and clinical outcome according to the positivity of C3d assay.

Results: Among them, 11 KTRs had C3d positive DSA. There was no significant difference of mean age of donor and recipient between the C3d (-) and C3d (+) groups. There were also no significant differences of the proportions of gender, previous rejection, delayed graft function, frequency of KT, and KT type between the two groups. Most KTRs had the more anti-HLA class II DSA compared with anti-HLA-class I DSA (91.7% vs. 33.3%). Mean MFI of anti-HLA class II DSA was significantly higher in the C3d (+) group compared with the C3d (-) group (7,918 ± 4,477 vs. 2,592 ± 1,825, $P = 0.003$). There was positive correlation in the mean MFI of anti-HLA class II DSA between SAB and C3d assays. The proportion of acute AMR was significantly higher in the C3d (+) group compared with the C3d (-) group (75.0 % vs. 11.1%, $P = 0.041$). Death-censored graft survival showed no significant difference between the two groups.

Conclusions: In our study, DSA identified by the SAB assay and C3d positive DSA by the C3d assay might be highly relevant, and in particular, the C3d assay seems to better reflect acute AMR. Therefore, in cases of suspected acute AMR, the C3d assay is recommended to be performed with the SAB assay.