

## KSN 2017 Abstract

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### C3D-BINDING ANTI-DQ IS ASSOCIATED WITH HIGH RISK FOR ABMR AND GRAFT FAILURE IN STABLE KIDNEY TRANSPLANT RECIPIENTS

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**Objectives :** Donor specific anti-HLA antibodies (DSA) has been known as a risk factor for antibody-mediated rejection (ABMR) and poor graft outcome in kidney transplant recipients (KTR). Solid-phase assays are prevalent, evaluating the ability of DSAs to activate the complement cascade is important. Our study was to evaluate to impact of C3dDSA and SA (single antigen) DSA on ABMR and graft outcome.

**Methods :** We examined 220 stable KTRs for development of DSAs from July 2013 to July 2016. We biopsied 24 recipients who were positive on Luminex PRA, subsequently tested SA-DSA and C3d-DSA on allograft kidney biopsy day.

**Results :** 20 of 220 (10.9%) of stable KTRs had DSAs on Luminex PRA, Median timing of DSA occurring was 9.6(0.2-24) year of posttransplantation.18 of 24 (75%) had DSAs on SA Luminex assays. 11 of 24 (46%) had C3d-binding DSAs. 7 of 11 (63.6%) C3d-DSA (+) had ABMR, regardless of DSA status. Incidence of ABMR was significantly higher in C3d-DSA (+) than those in SA-DSA (+) (7 of 11, 63.3% vs. 7 of 18, 38.9%, P=0.03). Among 9 had class2, C3d-DSA, 8 of them (88.9%) had DQ Antibody. ROC curve showed C3d-class2 is more accurate test to diagnose ABMR than class2-DSA (P<0.001). Three recipients had graft failure at 2.6 (0.5- 3) year after ABMR. Significant predictors of graft failure on multivariate analysis were high serum creatinine at the time of biopsy, ABMR, CABMR and Class2, C3d-DSA (+).Class2, C3d-binding DSA was associated with lower graft survival after ABMR (Fig1).

**Conclusions :** We demonstrated that class2-DSA, especially class2, C3d-DSA of anti-DQ is associated with high risk for development of ABMR and graft failure. We suggested immune surveillance with C3d-DSA and subsequent allograft biopsy may be useful method to recognize development of ABMR and to prevent graft failure in stable kidney transplant recipients.

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**Keywords :** Donor specific antibody, Antibody mediated rejection, Kidney transplant recipient