

Abstract Type : Oral

Abstract Submission No. : OR-1691

The Clinical Impact of Preformed HLA-DQ donor-specific antibody on Graft outcomes in Kidney Transplantation

SUA LEE, Eun Jeong Ko, Chul Woo Yang, Byung Ha Chung
Department of Internal Medicine-Nephrology, The Catholic University of Korea, Seoul St. Mary's Hospital, Korea, Republic of

Objectives: De-novo HLA-DQ donor-specific antibody (DSA) has been identified as a risk factor for late graft dysfunction and graft loss in kidney transplantation (KT). Recently, the influence of preformed HLA-DQ DSA has been discussed. This study aimed to investigate the clinical impact of preformed HLA-DQ DSA on graft outcomes.

Methods: We evaluated 990 recipients who underwent kidney transplantation at Seoul St. Mary's Hospital from January 2010 to July 2019. Recipients were classified as no DSA, only DQ, non-DQ, and DQ + non-DQ. Primary outcomes were the incidence of biopsy-proven acute rejection and the rate of death-censored graft loss.

Results: In total cohort, 611 recipients (61.7%) and 379 recipients (38.3%) underwent living-donor KT and deceased-donor KT, respectively. Recipients were classified as no DSA (909 recipients, 91.8%), only DQ (18 recipients, 1.8%), non-DQ (57 recipients, 6.3%), and DQ + non-DQ (6 recipients, 0.7%). The overall incidence of acute rejection and acute antibody-mediated rejection (AMR) were 20.3% and 7.5%. Only DQ, non-DQ, and DQ + non-DQ group had significantly higher the incidence of acute AMR compared to no DSA group ($p < 0.05$, respectively). There was no significant difference in the incidence of acute AMR between sensitized groups. There was no difference in the rate of death-censored graft loss between groups. In univariate Cox regression analysis, all of 3 groups with DSA were associated with high risk of acute AMR (Only DQ: HR 5.051; CI 95%, $p = 0.002$, non-DQ: HR 6.005; CI 95%, $p < 0.001$, DQ + non-DQ: HR 7.748; CI 95%, $p = 0.005$, respectively). HLA-DQ DSA and other DSAs (HLA-A, HLA-B, HLA-DR) had a tendency to interact with acute AMR ($p = 0.055$).

Conclusions: Preformed HLA-DQ DSA is associated with the development of acute rejection, especially acute AMR. Therefore, the identification of preformed HLA-DQ DSA may be necessary to improve graft outcomes.