

Abstract Type : Oral Presentation
Abstract Submission No. : F-006101

Clinical outcomes of bortezomib-based desensitization in highly sensitized living and deceased donor kidney transplantation

Hyeran Park¹, Seunghyeok Choi¹, Hanbi Lee¹, Byung ha Chung¹, Chul Woo Yang¹

¹Department of Nephrology, The Catholic University of Korea Seoul St. Mary's Hospital, Republic of Korea

Introduction: Desensitization (DSZ) strategies have been developed in kidney transplantation recently. The aim of this study is to investigate the usefulness of bortezomib based desensitization (BZB-DSZ) therapy in highly sensitized living and deceased donor kidney transplantation.

Methods: We applied this BZB-DSZ protocol to 20 patients of 14 living donor kidney transplantation (LDKT) candidates with positive T-CDC (complement dependent cytotoxicity) crossmatch at baseline or refractory to DSZ using rituximab and plasmapheresis (RTX/PP) and of 6 deceased donor kidney transplantation (DDKT) candidates, when (i) waiting time 10 years (ii) panel reactive antibody values 50% and (iii) previous history of a positive T cell crossmatch with potential deceased donor between July 2012 and Nov 2022 in our center.

Results: Clinical outcomes revealed 16 of 20 (80%) patients underwent BZB-DSZ proceeded with transplantation successfully, 1 refused the transplant, and 3 are still awaiting for DDKT. Among LDKT candidates, 8 of 10 (80%) candidates with a positive T-CDC turned negative. Mostly the mean fluorescence intensity (MFI) level of donor specific anti-HLA antibody (HLA-DSA) markedly decreased to target level (MFI<5,000) except for those patients who were refractory to RTX/PP based DSZ with marginal decrease of MFI. Among DDKT candidates, the count of strong HLA-DSA (MFI>10,000) decreased after DSZ. Out of them, 3 showed negative T cell crossmatch test to deceased donor as they could proceed with DDKT. All 16 patients who proceeded KT did not show hyper-acute rejection but 8 cases (50%) showed biopsy-proven allograft rejection, with an antibody-mediated rejection rate of 87.5%. Death censored allograft survival during median follow-up duration of 35 months was 93.75%. 3 received antiviral treatment for CMV viremia, and 1 of them expired due to pneumonia sepsis.

Conclusion: Bortezomib based desensitization is effective to reduce HLA-DSA and enables highly sensitized patients to take kidney transplantation, and showed acceptable allograft outcomes.