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ABO 부적합 신장 이식; 서울 성모 병원 초기 경험

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ABO Incompatible Kidney Transplantation: Early Experience of Seoul St. Mary's Hospital

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Background : Advances in immune suppression and desensitization protocols led to overcome ABO blood group barrier in kidney transplantation. This report is on the outcome of ABO incompatible kidney transplantation performed in Seoul St. Mary's hospital.

Patients and Methods : Seven cases of ABO incompatible KT had been carried out since May, 2009. For pre-conditioning, rituximab was given 14-30 days prior to transplantation; the first 3 cases were infused with 375 mg/m^2 of rituximab, whereas from the 4th case, 100 mg/m^2 was used. Plasmapheresis (PP) and intravenous immunoglobulin were initiated around 7 to 14 days prior transplantation and performed until the ABO antibody titer are less than 1:8. Immune suppressant was initiated 7 days before KT.

Results : Combinations of donor and recipient blood groups were A to B (3 cases), O to B (2 cases), O to A (1 case) and B to AB (1 case). Median age was 47 (32-53) years old and 4 cases were male. 4 cases were living related donors (2 siblings and 2 off-springs) and 3 cases were spouse donor transplantation. Median HLA mismatch numbers were 3 (2-6). The 5th case had 2nd KT with PRA class I 66.7% and in 7th case, PRA class II was 50%. Baseline CD19 and CD20 counts were 6.8 % (1-13.9) and 6.75 % (1-13.7) respectively, which successfully decreased below 1 % after infusion of rixutimab. Median baseline anti-ABO IgG and IgM titer were128 (32-1,024) and 32 (16-512) respectively and decreased to below 8 before transplantation except for the 3rd case (1:16). Post-transplant PP was performed only in the 1st case due to a high anti-ABO antibody titer (1:1,028). Protocol biopsies performed in 3 cases all showed a diffuse C4d deposition, but did not show findings of rejection. Acute rejection developed in the 1st case and the biopsy demonstrated an acute cellular rejection. Pyoknee developed in the 5th case and post-operation bleeding that need reoperation developed in the 6th case. Median follow-up period was 154 days (21-315 days) and graft function remained stable in all cases.

Conclusion : ABO incompatible KT can be safely carried out under current conditioning and immunosuppressive regimen. It can be a valuable option to deal with serious donor shortage by expanding potential donor pool in Korea.

Key Words : ABO 불일치, 신장 이식, 혈장 반출
ABO mismatch, Kidney transplantation, Plasmapheresis