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Long-term Clinical Outcomes in ABO Incompatible Kidney Transplantation in Patients with High Baseline Anti-A/B Antibody Titer

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Objectives: ABO incompatible (ABOi) kidney transplantation (KT) has been considered to overcome donor shortage. We investigated the long-term clinical outcomes in ABOi KT in patients with high baseline anti-A/B antibody titer.

Methods: We retrospectively included 260 patients who had undergone ABOi KT from May, 2009 to November, 2020. One hundred and eighty-one patients with a baseline immunoglobulin G (IgG) titer of $\geq 1:128$ were assigned to the high-titer group and 79 patients with a baseline titer of $\leq 1:64$ were assigned to the low-titer group. We used a protocol composed of rituximab, plasmapheresis, and intravenous immunoglobulin (RTX/PP/IVIG). We compared the clinical outcomes of the two groups.

Results: The median follow-up periods were 56.57 months (high-titer group) and 38.77 months (low-titer group) ($p = 0.003$). The high-titer group required more sessions of PP/IVIG than the low titer group (7.75 ± 3.10 , 3.59 ± 1.91 , $p < 0.001$, respectively). Patient survival at 5 years was 93.50% in high-titer and 96.70% in low-titer group ($p = 0.689$). Graft survival at 5 years was 87.20% in high-titer and 95.80% in low-titer group ($p = 0.922$). During the follow-up period to one year, antibody titer remained higher in the high-titer group. And serum creatinine showed no difference between two groups up to 6 years (p for interaction = 0.730). No significant differences were detected in the graft survival rate, patient survival rate and rejection-free survival rate between two groups. However, the infection-free survival rate was significantly lower in the high-titer group ($p = 0.032$). The incidence of bacterial infection was higher in high-titer group (46.84% vs. 27.07%, $p = 0.002$).

Conclusions: Patients with high baseline anti-A/B IgG isoagglutinin titers had equally successful long-term outcomes as those with low titers. However, ABOi KT in the high-titer group may require greater caution compared to the low-titer group because of the higher tendency of infection.

ABOi_outcome

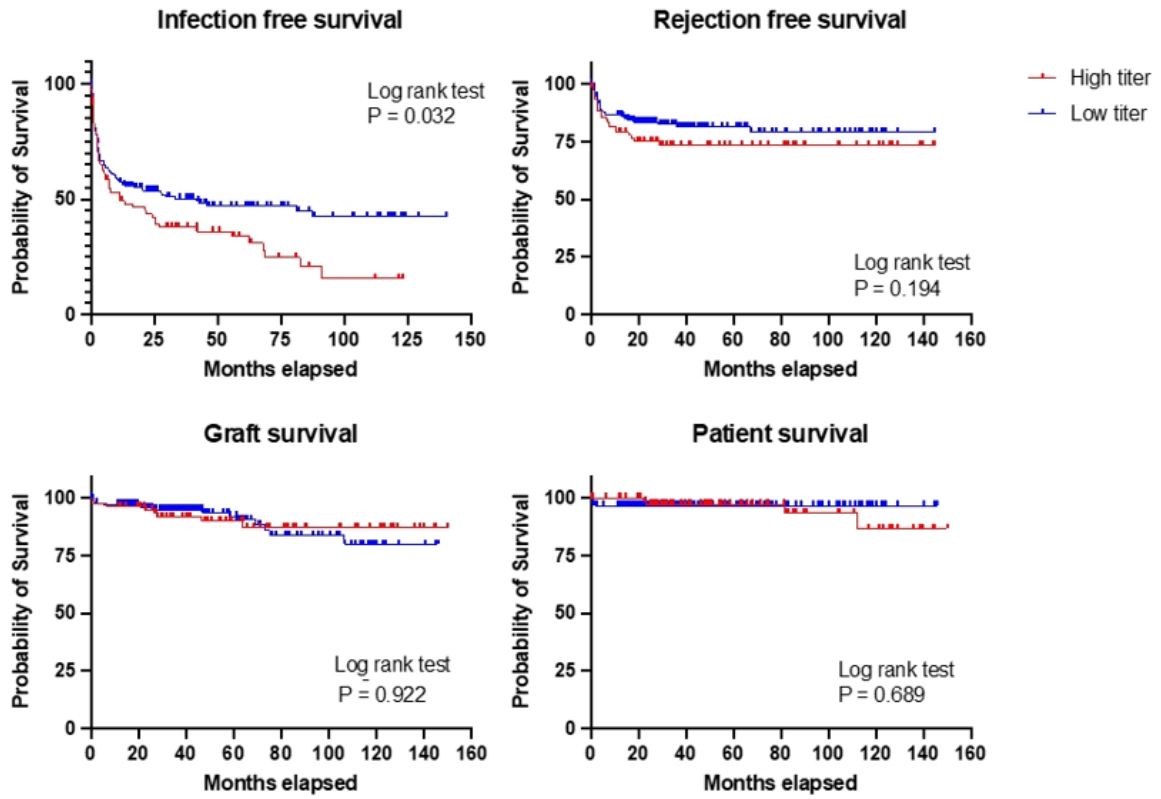


Figure1. Long-term Outcome of ABO incompatible Kidney Transplantation