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Impact of Isoagglutinin Titer Rebound in ABO Incompatible Kidney Transplantation

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Objectives: In ABO incompatible kidney transplantation (ABOi KT), high baseline isoagglutinin titer is associated with acute rejection development. However, there is debate about the effect of isoagglutinin titer rebound on allograft. In this study, we investigated the effect of isoagglutinin titer rebound in ABOi KT.

Methods: Patients received ABO incompatible KT in the Seoul St. Mary's Hospital from May 2009 to December 2013 were reviewed. We enrolled patients with blood type AB and only donor blood type A or B to determine whether the rebound occurred regardless of the donor's ABO antigen. Isoagglutinin titers before and at the time of KT, and 1 month, 1 year after KT were checked. Rejection was defined as biopsy proven acute rejection (BPAR). We defined early rebound group as patients with isoagglutinin titer over 1:32 at 1 month after KT. And late rebound group was defined as patients with the titer over 1:32 at 1 year after KT. Donor specific (DS) titer was referred as the same antibody titer to donor's ABO antigen. And the other antibody titer defined as non-donor specific (NS) titer.

Results: The mean value of DS and NS titer at 1month after transplantation was 27.18 and 42.78 (p value = 0.001), respectively. And mean titer after 1 year was 10.71 and 62.19 (p value<0.001) respectively in order. (Figure 1.)
In early rebound group, 55.6% of patients showed BPAR and 44.4% in control group. (p value=0.689) Patients with BPAR was 66.7% and 33.3% in late rebound and control group, but there was no significant difference. (p value=0.420)
In figure2, Kaplan-Meier curve showed no significant differences in rejection free survival, graft survival and patient survival between early or late rebound group and control group.

Conclusions: DS antibodies showed less titer rebound. And BPAR tended to be more in patients with rebound titer, but not statistically significant.