The optimal dosage of rituximab for ABO-incompatible kidney transplantation: comparative analysis of efficacy and safety

Hye Eun Kwon, Young Hoon Kim, Sung Shin, Joo Hee Jung, Hyunwook Kwon

Division of Kidney and Pancreas Transplantation, Department of Surgery, Asan Medical Center, University of Ulsan College of Medicine, Seoul, Korea

Background: Rituximab is an essential induction drug for ABO-incompatible (ABOi) kidney transplantation (KT). However, the optimal dosage of rituximab in ABOi KT remains unclear. Therefore, we evaluated the efficacy and safety of 100 mg/body rituximab compared to 200 mg/body rituximab protocol in ABOi KT.

Methods: A total of 196 patients who received ABOi KT in the period from July 2017 to December 2019 at Asan Medical Center were divided into rituximab 100 group (n=122, 61.6%) and rituximab 200 group (n=76, 38.4%).

Results: The overall graft survival showed no significant differences in both groups (P=0.37). The 3-year graft survival rate for rituximab 100 and rituximab 200 were 96.5% and 96.6%, respectively. The rejection-free graft survival rates (RFGS) were also similar in both groups (P=0.67). The 3-year RFGS for rituximab 100 and rituximab 200 were 87.3% and 89.0%, respectively. The incidence of *de novo* donor-specific antibody showed no significant difference between two groups (rituximab 100 vs. 200; n=8, 6.6% vs. n=9, 11.8%) (P=0.20). Infectious complications, including cytomegalovirus, BK virus, urinary tract infection, and pneumonia also showed no differences in both groups.

Conclusions: Our study demonstrated that 100 mg/body rituximab protocol in ABOi KT afforded comparable graft survival and RFGS. These findings suggest that low-dose rituximab (100 mg) is a treatment option that provides successful desensitization for ABOi KT.

Corresponding author: Hyunwook Kwon

E-mail: hwkwon@amc.seoul.kr

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