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ABO 혈액형 부적합 생체 신장이식에서 ABO 혈액형 항체의 기저 및 수술 후 역가가 이식성적에 미치는 영향

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Impact of Baseline and Postoperative Isoagglutinin Titer on Clinical Outcomes in ABO-incompatible Living Donor Kidney Transplantation

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Background: ABO-incompatible (ABO-i) kidney transplantation (KT) has expanded in consequence of the development of desensitization protocol. However, the impact of baseline and postoperative isoagglutinin titer on clinical outcomes remains undetermined.

Methods: Between February 2009 and December 2013, 214 patients with end-stage renal disease underwent ABO-i KT at Asan Medical Center in Seoul, Korea. After excluding patients with positive cross-matching results by T-cell flow cytometry, data from 180 patients were retrospectively reviewed. These patients were divided into the 2 sets of groups according to the baseline isoagglutinin titer and the appearance of titer-rebound (≥1:16) within 2 weeks after KT; initial high titer (≥1:256) group (n=29) vs. low titer (<1:256) group (n=151) and rebound group (n=41) vs. non-rebound group (n=139).

Results: The mean age was 46.3±11.5 and the median follow-up period was 25 (2-63) months. Initial high titer group was related to more frequent preoperative and postoperative plasmapheresis sessions, lower titer reduction rate, higher titer just before KT, and more frequent titer-rebound within 2 weeks after KT than low titer group. Rebound group showed shorter interval between rituximab administration and the first plasmapheresis session, higher baseline isoagglutinin titer, more frequent preoperative plasmapheresis sessions, and lower titer reduction rate than non-rebound group. However, there were no significant differences in clinical outcomes including patient and graft survival, graft function, acute rejection episodes, infections, and postoperative medical and surgical complications regardless of the isoagglutinin titer. Additionally, male recipient (OR, 3.9; 95% CI, 1.4-10.8; p=0.008), previous KT history (OR, 5.8; 95% CI, 1.4-23.3; p=0.014), lower titer reduction rate (OR, 0.1; 95% CI, 0.02-0.6; p=0.008), and initial high isoagglutinin titer (OR, 3.5; 95% CI, 1.3-9.5; p=0.011) were associated with the development of titer-rebound within 2 weeks after KT in multivariable analysis.

Conclusions: With the development of desensitization protocol, ABO-i KT could be performed and managed safely regardless of initial isoagglutinin titer and titer-rebound within 2 weeks after KT.

Key Words: ABO 혈액형 부적합, 신장이식, ABO 혈액형 항체
Incompatibility, Blood group, Kidney transplantation