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Lower Doses of Immunosuppressants in Rituximab-Treated Kidney Transplantation의 안전성에 대한 연구

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The Safety of Lower Doses of Immunosuppressants in Rituximab-Treated Kidney Transplantation

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Background: Rituximab, an anti-CD20 antibody, effectively depletes B lymphocytes and is used in ABO-incompatible or HLA-sensitized kidney transplantation. However, it is not clear whether the conventional doses of maintenance immunosuppressants in rituximab-treated kidney transplantation are appropriate. We studied the safety of lower doses of immunosuppressants in rituximab-treated kidney transplantation.

Methods: We previously reported the results of retrospective study that showed serious infectious complications were increased in rituximab-treated kidney transplant recipients. In this study, we prospectively evaluated 72 patients who used lower doses of maintenance immunosuppressants (tacrolimus, mycophenolate mofetil (MMF) and methylprednisolone) compared to previous study as a new protocol (group 1). Sixty-seven patients of study group in the previous report served as control group (group 2).

Results: The doses of MMF (in grams/day) at the following times postoperatively were lower in group 1 than in group 2: 1month: 0.95±0.241vs. 1.26±0.42, p=0.000; 3 months: 0.93±0.30 vs. 1.14±0.51, p=0.007; 6 months: 0.94±0.26 vs. 1.07±0.50, p=0.095; 1 year: 0.93±0.28 vs. 0.88±0.52, p=0.637; 2 years: 1.08±0.20 vs. 0.69±0.55, p=0.252). The doses of tacrolimus and methylprednisolone were also significantly lower in group 1. Mean follow up time (months) showed no difference (14.89±6.01 vs. 12.63±7.59, p=0.053). Total infection occurred more often in group 2 (29.2 % vs. 52.2%, p=0.006). The incidence of CMV infection was also higher in group 2 (2.8% vs. 16.4%, p=0.007). One patient of group 1 and 2 patients in group 2 died of infection. The reduction of maintenance immunosuppressants did not increase the incidence of acute rejection in group 1 (4.2% in group 1 vs. 4.5% in group 2, p=1.000). If patients who died with functioning graft were excluded, graft survival was 100% in group 1 and 98.5% in group 2 (p=0.482). Serum creatinine levels postoperatively were not higher in group 1 than in group 2.

Conclusion: Lower doses of maintenance immunosuppressants reduced the incidence of infection without increasing rejection or graft loss and it might be adequate to reduce the doses of maintenance immunosuppressants in rituximab-treated kidney transplantation.

Key Words: Rituximab, 면역억제제, 신장이식
Rituximab, Immunosuppressants, Kidney transplantation