Abstract

Objectives

Although rituximab expands the living donor pool for renal transplantation, it often increases the incidence of cytomegalovirus (CMV) infection. The aim of this study was to analyze the effect and impact of low-dose rituximab induction therapy on CMV infection in living-donor renal transplantation.

Methods

Ninety-two recipients undergoing living-donor renal transplantation in our institution from May 2009 to August 2018 were evaluated retrospectively. Indications for preoperative rituximab (200 mg/body) were the following: 1. ABO major mismatch, 2. ABO minor mismatch, 3. donor-specific anti-human leukocyte antigen antibody (DSA)-positive, 4. Focal segmental glomerulosclerosis (FSGS). We excluded 4 recipients who were followed less than 3 months, 5 who received over 200 mg/body rituximab and 7 who received prophylactic therapy for CMV.

Results

There were 59 patients in the rituximab group and 17 in the non-rituximab group. Groups differed significantly in age (median age, 53 vs 37 years, respectively; *P*=0.04), but not in sex (male, 64% vs 65% *P*=1.00), FSGS (3% vs 0%, *P*=1.00) or percentage of CMV-seronegative recipients of renal allografts from CMV-seropositive donors (12% vs 18%,

P=0.68). Estimated glomerular filtration rate did not differ significantly between groups until 24 months after transplantation. CMV clinical symptoms (10% vs 24%, *P*=0.22), including fever≥38℃ (5% vs 12%, *P*=0.31) and gastrointestinal symptoms (5% vs 12%, *P*=0.31), and the 5-year survival rates of death-censored graft loss (90% vs 83%, *P*=0.43) did not differ significantly between groups.

Conclusions

Low-dose rituximab induction therapy is effective in immunological high-risk recipients without increasing CMV infection without valganciclovir prophylaxis.

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Key words: rituximab, renal transplantation, renal function, cytomegalovirus, graft survival