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Advances in Anti-Humoral Therapy

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Current immunosuppression has markedly improved kidney allograft outcomes. However, its efficacy is not sufficient to suppress occurrence of de novo donor-specific antibody and chronic antibody-mediated rejection, compromising long-term graft survival. Plasmapheresis, rituximab, and high-dose intravenous immunoglobulin have been used as a standard of care for treatment of active antibody-mediated rejection; however, its efficacy against chronic antibody-mediated rejection has not been proven. Eculizumab and imlifidase has been tried to treat acute antibody-mediated rejection and anti-IL-6 therapy has been used to control chronic antibody-mediated rejection. Recently, anti-plasma cell therapy including anti-CD38 antibody and anti-BCMA antibody is emerging as a new treatment for antibody-mediated rejection. Furthermore, FcRn inhibitors as well as CAR T cell therapy are also tried to treat antibody-mediated rejection. Considering poor outcomes of anti-humoral treatment against antibody-mediated rejection, early treatment of subclinical antibody-mediated rejection is proposed. More importantly, we had better prevent de novo donor-specific antibody and antibody-mediated rejection by good eplet matching, avoiding suboptimal immunosuppression, and active control of early acute T cell-mediated rejection.

Keywords: donor-specific antibody, antibody-mediated rejection, anti-humoral treatment