

## Resistant cytomegalovirus infection in kidney transplant patients: single center experience in using the high dose immunoglobulin

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**Background.** Cytomegalovirus (CMV) infection remains one of the most prevalent complications following solid organ transplantation. Viremia and viral dissemination to multiple organs can result in end-organ CMV disease, which can be fatal. Intravenous ganciclovir, or its oral prodrug valganciclovir, is the primary antiviral medication used for CMV prevention and treatment. However, the incidence of ganciclovir-resistant and treatment-refractory CMV is rising rapidly. In such cases, CMV immune globulin (CMVIG) can be considered for transplant patients.

**Methods.** This is a single-center report of three kidney transplant patients with resistant CMV infection. Two recipients were CMV-negative, and one was CMV-positive at the time of kidney transplantation; all three donors were CMV-positive. Treatment with valganciclovir and ganciclovir was unsuccessful in all cases. Moreover, mutations in the CMV UL97 gene were identified, suggesting ganciclovir-resistant strains.

**Results.** CMV viral loads on the starting day of CMVIG were 49740 IU/ml in the first case, 6416 IU/ml in the second case, and 1190 IU/ml in the third case. Notably, the first patient was treated twice with Maribavir (regimen 400 mg/b.d.) for 8 weeks; however viral loads immediately increased after discontinuation of this drug. The third patient was treated with Foscarnet; unfortunately, the drug had to be discontinued due to worsening allograft function. CMVIG showed positive dynamics of CMV copies, with a decrease to 620 IU/ml, 38 IU/ml, and 23 IU/ml in all three cases, respectively.

**Conclusions.** High doses (4 ml/kg, 2 ml/kg) of CMVIG are clinically effective and well tolerated in kidney transplant patients with resistant CMV infection.