

Correlation of CMV Serology Status and Induction Agents with CMV Infection in Kidney Transplantation Recipients

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Objective

To assess the incidence of CMV infection and correlation with CMV serology status and induction agent used among KTRs.

Methods

We conducted a retrospective cohort study of all KTRs from 1st January 2020 till 31st December 2022 in Hospital Selayang. Data on CMV infection and potential variables were collected. CMV infection was defined as presence of viral replication in tissues or blood without symptoms (CMV viraemia), whereas CMV disease is accompanied by symptoms and end-organ involvement.

Results

A total of 112 KTRs were identified, 50.9%(n=57) and 49.1%(n=55) received living-donor and deceased-donor KT respectively. The mean age of the KTR was 36.7 \pm 9.0 years-old, and 50.9% were male.

CMV-risk based on serology among KTRs were moderate-risk group (D+R+ and D-R+) 93.8% (n=105), followed by high-risk (D+R-) (5.4%) and low-risk (D-R-)(0.7%). All KTRs with high-risk and moderate-risk CMV receiving intra-venous anti-thymocyte globulin(IV ATG) as induction(45.7%) were given valganciclovir prophylaxis.

Out of the recipients, 14 (12.5%) developed CMV infection, with 12 having asymptomatic viremia, 2 with CMV disease (p=0.313) and 50% presented with allograft dysfunction. Majority (n=13) were in moderate-risk group, 76.9% and 23.1% received IL-2 and IV ATG respectively for induction and remaining one patient with high-risk received IL-2. Mean ATG dose used was 5.4mg/kg.

Majority of infected patients (57%) required oral valganciclovir for treatment, whilst others only required IS dosage reduction and conversion from mycophenolic acid to everolimus. No mortality identified among CMV-infected cohort.

Conclusions

In summary, our findings emphasize the need for careful monitoring of CMV-infection in KTRs, especially in the moderate-risk group induced with IL-2. Usage of valganciclovir prophylaxis shown to minimize the risk of early CMV-infection.