

**Abstract Type : Oral Presentation**  
**Abstract Submission No. : F-001926**

## **Current trends and clinical impact of cytomegalovirus prophylaxis in kidney transplant recipients in Korea: the Korean organ transplantation registry study**

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**Introduction:** Cytomegalovirus (CMV) infection is a frequent and devastating complication after kidney transplantation (KT). To minimize adverse effects of CMV, anti-viral prophylaxis is considered an essential treatment in KT recipients, except for low-risk group of CMV. In this study, we investigated current status and clinical impact of CMV prophylaxis in KT recipients in Korea.

**Methods:** A total of 3,241 kidney recipients from 20 transplant centers registered with the Korean Organ Transplantation Registry were included in this study. The recipients were divided into two groups according to receiving prophylaxis, and the impact of prophylaxis on CMV infection and disease, rejection, graft loss, cardiac events, and all-cause mortality were investigated.

**Results:** Among the total study population, 2,853 (88.0%) were intermediate risk and 56 (1.7%) were high risk for CMV infection. 962 (29.7%) recipients received prophylaxis, and the most common reason was routine protocol, followed by thymoglobulin usage. The duration of prophylaxis and types of drugs used were as follows; ganciclovir only for 1.8 weeks (n=429, 44.6%), valacyclovir±ganciclovir for 12.5 weeks (n=412, 42.8%), and valganciclovir±ganciclovir for 10.0 weeks (n=96, 9.9%). 194 (20.1%) experienced side effects, and hematologic complications were the most common (n=154, 79.3%). To evaluate the clinical impact of CMV prophylaxis, 2,756 recipients (ganciclovir±valacyclovir, n=393; ganciclovir±valganciclovir, n=84; and non-prophylaxis, n=2279), excluding those who received prophylaxis less than 4 weeks were analyzed. Non-prophylaxis group experienced more frequent CMV infection and rejection compared with prophylaxis group (28.7% vs. 18.2% and 21.7% vs. 12.21%, respectively). Prophylaxis group showed significant lower risk of CMV infection (HR 0.555, 95% CI 0.139-0.702) and rejection (HR 0.512, 95% CI 0.385-0.681) compare with non-prophylaxis group.

**Conclusion:** Our results illustrate current trends and clinical impact of CMV prophylaxis after KT in Korea. Considering the clinical impact of prophylaxis on clinical outcomes, the range of KT recipients receiving CMV prophylaxis should be expanded.