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Valganciclovir Prophylaxis Versus Preemptive Therapy in Kidney Transplant Patients: A Systematic Review and Meta-Analysis

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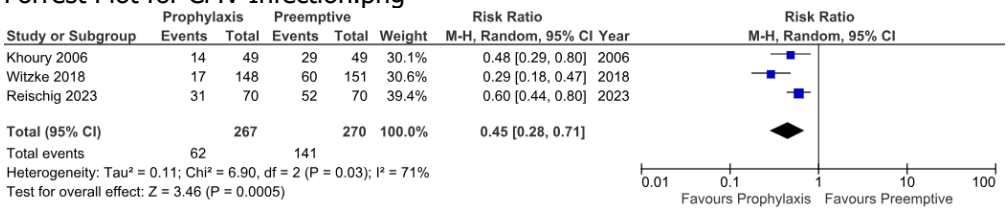
Objectives : To determine the efficacy of prophylactic versus preemptive valganciclovir therapy in the prevention of CMV infection among adult kidney transplant recipients.
Methods : A comprehensive search for databases of randomized controlled trials (RCTs) comparing valganciclovir prophylaxis versus preemptive therapy among kidney transplant patients was done. PubMed, the Cochrane Library, ClinicalTrials.gov, and Proquest were searched using relevant terms including valganciclovir, prophylaxis, preemptive, kidney transplant, and cytomegalovirus infection until January 2024. The primary outcome of interest was the occurrence of active CMV infection (CMV DNAemia) and symptomatic CMV disease. The secondary outcome was the presence of graft rejection. A standardized data form was used for data extraction. The authors independently screened the studies and assessed the methodological quality using the Cochrane Risk of Bias tool. Random-effects meta-analysis was done using Review Manager 5.4.
Results : A total of three studies, one high quality and two moderate quality RCTs, were included in the review, involving a total of 537 patients. Pooled analysis showed that prophylactic valganciclovir was as effective or better than preemptive therapy in the prevention of CMV infection (RR 0.45, 95% CI 0.28-0.71, I^2 = 71%) and CMV disease (RR 0.79, 95% CI 0.17-3.73, I^2=70%). There is no statistically significant difference in graft rejection reported between the two strategies (RR 0.76, 95% CI 0.43-1.35), I^2=41%.
Conclusions : There is limited evidence to suggest that valganciclovir prophylaxis is associated with less frequent cytomegalovirus infection compared with preemptive therapy and that both strategies were similarly effective in the prevention of graft rejection. Larger and more adequately powered randomized controlled trials are needed to ascertain the effects observed.

Forrest Plot for CMV Infection.png



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