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Efficacy and Safety according to dose of Valganciclovir for Cytomegalovirus (CMV) Prophylaxis in Transplantation: network Meta-analysis using recent data.

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Objectives:

Valgancivlovir is importantly used to prevent post-transplant CMV infection among kidney transplantation patients. However, the dose of such drug being used still remains controversial since the continuous use of such drug decrease kidney functions and induces leukopenia in some of the cases. Accordingly, the purpose is to measure the appropriate dose of the drug required for preventing CMV using network Meta analysis.

Methods:

We searched the Cochrane Central Register, OVID MEDLINE and Pubmed until April 15, 2019. Studies evaluating among valganciclovir 900 mg, 450 mg and controls were evaluated. We performed direct and indirect network meta-analysis using Bayesian models and generated rankings of the different dose of valgaciclovir agents by generation mixed treatment comparison (GeMTC).

Results:

Twenty-three studies involving 3,478 participants were eligible. As a result of analyzing among three groups, following completion of the research, Compared with control, there was no difference between low dose 0.79 [95% Crl, 0.50-1.40] and standard dose 1.0 [95% Crl, 0.61-1.60] groups when CMV incidence was compared. In the Rank probabilities table, the best order for lowering the CMV event was as high as dose of 450mg (71.1%). Incidence of leukopenia showed a significant difference, but there was no statistical significance in the low dose group 1.5 [95% Crl, 0.99-2.20] compared with the control group, but 4.3 times higher in the high dose group [95% Crl, 2.69-7.10], which was 2.9 times higher in the high dose group compare with low dose group [95% Crl, 1.88 - 4.67].

Conclusions: The use of valganciclovir did not show any difference in other side effects, but the use of low doses of leukopenia significantly reduced side effects. The incidence of CMV was not different among the three groups, but the tendency was also decreased at low dose.