

Effect of Ganciclovir on Pharmacokinetics of Mycophenolic Mofetil, in Kidney Transplant Patients

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Abstract

Objective

Mycophenolate mofetil (MMF) is commonly administered concomitantly with ganciclovir for managing transplant recipients who infected with CMV. This study was conducted to evaluate the probable effects of ganciclovir on Mycophenolic acid (MPA) pharmacokinetic.

Materials and Methods

Ten kidney transplant recipients who full field inclusion and exclusion criterias enrolled in this study. The first full profile blood sampling was taken during the combination therapy of ganciclovir and MMF. The second sampling was taken one week after discontinuation of ganciclovir. Serum concentrations of MPA and its glucuronide metabolite (MPAG) were determined by high-performance liquid chromatography (HPLC) method. The pharmacokinetic parameters of MPA were measured, in two conditions, for each patient.

Results

There was no significant difference between MPA clearance alone and in combination with ganciclovir (28.2 ± 21.9 L/h vs 31.9 ± 21.3 L/h, $p=0.207$) and also no significant difference was seen between the MPA Area Under the Curve (AUC) in two conditions (43.48 ± 16.27 $\mu\text{g/ml.h}$ vs 39.80 ± 20.18 $\mu\text{g/ml.h}$, $p=0.221$). MPAG AUC was increased significantly when the drugs were administrated in combination (957.8 ± 675.2 $\mu\text{g/ml.h}$ vs 1348.6 ± 1095.1 $\mu\text{g/ml.h}$, $p=0.036$). Also ganciclovir induced enterohepatic recirculation of MPA in two patients.

Conclusion

The pharmacokinetic parameter of MPA was not affected by ganciclovir. But ganciclovir increased MPAG AUC and induced enterohepatic recirculation of MPA.

Keywords: Clearance, Kidney Transplantation, Ganciclovir, Mycophenolic acid

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