P9: THE PHARMACOKINETICS STUDY OF PROPANOLOL IN THALASSEMIC PATIENTS

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ABSTRACT

Cardiovascular disease is a common finding in thalassemia. Propranolol is a non-selective beta-adrenergic blocking drug widely uses for the treatment of cardiovascular disease. Therefore this study was performed to investigate the pharmacokinetics of propranolol in β-thalassemia/hemoglobinE patients compare to normal volunteers. Each subject took a single 40 mg oral dose of propranolol. Blood samples were obtained for measurement of the plasma propranolol levels, using HPLC technique, blood pressure and heart rate were monitored before and at 0.5, 1, 1.5, 2, 2.5, 3, 4, 6 and 8 hours after drug administration. The pharmacokinetic parameters were determined. The peak plasma concentration (Cmax) of propranolol in the patients was not significant difference from normal. The time to reach peak plasma concentration (Tmax) and the elimination rate constant (Ke) were significantly higher ($p<0.05$) in the patient group. Whereas, the elimination half-life (t1/2), the apparent volume of distribution (Vd) and the total clearance (Cl) were significantly lower ($p<0.01$, $p<0.01$ and $p<0.05$ respectively) in the patient group. Basal systolic and diastolic blood pressure of thalassemic patient was lower than in normal subjects. However, no significant change was observed in hemodynamic effects including blood pressure and pulse rate between the two groups of the subjects. Therefore, the results from this study indicated that the pharmacokinetic parameters of propranolol were altered in thalassemic patients.

Keywords: Pharmacokinetics, Propranolol, β-thalassemia/hemoglobinE patient