P10: THE PHARMACOKINETICS STUDY OF PARACETAMOL AND ITS METABOLITES IN THALASSEMIC PATIENTS

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ABSTRACT

Pathology of thalassemia such as decreased blood volume and organ damage may alter pharmacokinetic parameters of several drugs in the patients. Paracetamol is a commonly used analgesic and antipyretic drug which is extensively metabolized in liver via glucuronidation. The aim of this study is to compare the pharmacokinetic parameters of paracetamol (PCM) and paracetamol glucuronide (PCM-G) in β-thalassemia/HbE patients with normal subjects. Following and overnight fast, a single dose of paracetamol (1000 mg of Tylenol®) was given and blood samples were obtained at predose, 0.5, 1, 1.5, 2, 3, 4, 5, 7, and 9 hours after dosing for determination of the plasma of PCM and PCM-G levels by high performance liquid chromatography (HPLC). There was no significant difference in maximum concentration (Cmax) and time to Cmax (Tmax) of PCM and PCM-G between the groups. However, the significant higher ($P<0.05$) in elimination rate constant (Ke) and significant lower ($P\leq0.01$) in half-life (t1/2) of both PCM and PCM-G were observed in the patients. Total clearance (Cl) of PCM was significant higher ($P<0.01$) while volume of distribution (Vd) of PCM-G in patients was significant lower ($P<0.05$) than that of normal subjects. The results indicated that elimination of PCM and PCM-G were changed in the patients. This data may be useful to design the dosage regimen of paracetamol and other drugs that metabolized via glucuronidation in β-thalassemia/HbE patients.

Key words: β-thal/HbE, paracetamol, glucuronidation, pharmacokinetics