P15 A PHARMACOKINETIC STUDY FOR SINGLE ORAL DOSAGES OF FEXOFENADINE AT DIFFERENT PREPARATIONS (60, 120, AND 180 MG TABLETS) IN HEALTHY THAI SUBJECTS

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ABSTRACT

Fexofenadine hydrochloride is a nonsedative, selective H_1-receptor antagonist that relieves allergic symptoms associated with histamine-mediated disorders such as allergic rhinitis and chronic urticaria. Pharmacokinetic study of orally administered 60, 120 and 180 mg dosages in 12 healthy Thai volunteers were performed using a randomized, single blinded, three-arm cross-over design. Plasma concentrations of fexofenadine HCl were assayed by LC-MS/MS method. All pharmacokinetic parameters were analyzed using a one-compartment model with first order kinetics and then examined for the difference among 3 doses of treatment using the three-way analysis of variance with 90% confidence interval. The mean peak plasma concentrations for subjects receiving 60, 120, and 180 mg fexofenadine were 249.19 ± 390.20, 397.21 ± 195.51 and 571.83 ± 538.21 ng/mL respectively. AUCs were 1,343.66 ± 718.70, 3,177.87 ± 1,407.32 and 4,579.27 ± 2,124.70 ng.h/mL respectively. T_{max}'s were 1.79 ± 0.58 , 1.63 ± 0.64 and 1.92 ± 0.79 h respectively. C_{max}'s were 290.46 ± 390.02, 443. 10 ± 183.93 and 716.63 ± 506.18 ng/mL respectively. High variation in plasma drug concentrations after administering 180-mg dosage was observed and suggested that this oral dosage could generate plasma drug concentrations that came near zero-order elimination kinetics especially in the first few hours after the ingestion. The pharmacokinetic parameters that have a linear relationship with the studied doses were C_{max} and AUC. The parameters that were relatively constant included t_{max}, $t_{1/2}$, clearance and volume of distribution. No gender difference in all studied pharmacokinetic parameters of fexofenadine HCl was observed. No adverse drug reaction nor any significant change in vital signs, ECG (rate and QT_c intervals) was observed throughout the study. This study showed that a single oral dose of fexofenadine HCl at either 60, 120, or 180 mg was well tolerated and safe in Thai healthy volunteer.