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A two-way crossover bioequivalence study of cefadroxil after single oral administration of droxil and ultracef suspensions to 24 healthy human volunteers

FA Mohammed¹, S S Alsokari¹, M E Wagih¹, K Alghamdi¹, M K Quato² and S M Saad-Eldin²

¹Albaha University, KSA

²Menia University, Egypt

This study presents a two-way, single oral dose, two-weeks washout, crossover bioequivalence study carried out on 24 human volunteers to compare the bioavailability of two locally marketed pharmaceutical products containing cefadroxil, namely, droxil suspension (Test product commercially marketed suspension containing 500 mg of cefadroxil per 10 ml, produced by the United Pharmaceutical Manufacturing Company, Amman, Jordan) and ULTRACEF[®] suspension (Reference product, commercially marketed suspension containing 500 mg of cefadroxil per 10 ml, Produced by BRISTOL Laboratories, USA). The two products were administered to 24 healthy human volunteers under fasting condition. Following drug administration, venous blood samples (8 ml) for determination of cefadroxil were collected pre-dose (0 hours) and at 0.25, 0.5, 0.75, 1, 1.25, 1.50, 1.75, 2, 2.5, 3, 4, 5, 6, 8 and 10 hours after drug administration. Plasma was separated immediately by centrifugation and stored at -20°C until analysis. Cefadroxil analysis was carried out by a fully developed HPLC assay procedure. The results obtained revealed that the two products were bioequivalent as indicated by the absence of statistical differences in the plasma concentrations or pharmacokinetics parameters of the two products. The two products therefore can be alternatively prescribed.

fergmed@yahoo.com

Estrogen suppresses the proliferation of hepatocellular carcinoma cells

George G Chen, Jianwai Ren, Billy C S Leung, Rocky Ho and Paul B S Lai

The Chinese University of Hong Kong, China

Clinically, hepatocellular carcinoma (HCC) occurs much more frequently to males than females, but, the underlying mechanisms remain largely unknown. In this study the inhibitory effect of estrogen on the proliferation of liver cancer cells mediated by cytochrome P450 1A2 (CYP1A2) is demonstrated, indicating a potential role of estrogen metabolism in preventing the development of HCC. Our data have revealed the importance of CYP1A2 in estrogen metabolism and hepato-carcinogenesis, not only providing new evidence to understand clinical observations of HCC gender disparity, but also identifying potential targets for HCC prevention and treatments.

gchen@cuhk.edu.hk

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