

中文摘要

二克氯吩鈉(Diclofenac sodium)為一非固醇類抗炎藥，屬於苯基乙酸衍生物，常用於治療風濕性關節炎。目前已廣泛應用於市場上，但因原開發廠的產品較為昂貴，且需仰賴進口，因此有許多國內的藥廠開始研發相同成分、劑量及劑型的產品，本實驗主要是比較兩種二克氯吩鈉持釋劑型配方 DSSR 及 Voltaren[®] SR 在八位健康男性之生體可用率，以及兩種二克氯吩鈉腸衣膠囊 Weren[®] EMC 及 Diclo-puren[®]在十二位健康男性之生體可用率，藉由計算出之相關藥物動力學參數以評估其生體可用率及兩組產品的個別生體相等性，以確保用藥者的安全。利用高效液相層析分析法分析個別血漿檢品，使用 RP-18 層析管，以甲醇:0.1 % 磷酸溶液 (78/22) 作為移動相，以 Mefenamic acid 作為內部標準品，UV 偵測波長 280nm 來測定之。此一方法具有良好的線性關係，其同日內、異日間精確度，及定量極限之變異係數均在 10 % 內，相對回收率亦大於 90 %。

實驗結果發現持釋劑型 DSSR 之血漿中 diclofenac sodium 的最高濃度出現在第 3.57 ± 0.79 小時為 $0.215 \pm 0.095 \mu\text{g/ml}$ ，明顯低於 Voltaren[®] SR 出現在第 5.57 ± 2.07 小時的 $0.679 \pm 0.461 \mu\text{g/ml}$ ；DSSR 之曲線下面積為 $2.93 \pm 2.57 \mu\text{g}\cdot\text{hr/ml}$ 與 Voltaren[®] SR 的 $3.70 \pm 1.38 \mu\text{g}\cdot\text{hr/ml}$ 有明顯差異。而腸衣膠囊 Weren[®] EMC 及 Diclo-puren[®]在十二位受試者之平均曲線下面積(2.34 ± 0.19 vs. $2.34 \pm 0.22 \mu\text{g}\cdot\text{hr/ml}$)，平均最高濃度(1.16 ± 0.20 vs. $1.17 \pm 0.23 \mu\text{g/ml}$)，及達峰時間(均為 1.5 hr)等藥物動力學參數並無統計上之差異。由此可證，持釋劑型 DSSR 及 Voltaren[®] SR 不具有生體相等性。而腸衣膠囊 Weren[®] EMC 及 Diclo-puren[®]因藥物動力學參數均無統計上的差異，故可證明兩者具有生體相等性。

Abstract

Diclofenac sodium is a phenylacetic acid derivatives of the NSAIDs, which is used in in the treatment of rheumatic disorders. In this study, the bioavailability of two sustained-release dosage form of diclofenac sodium: DSSR and Voltaren[®] SR (Ciba-Geigy) in eight healthy male volunteers, and the bioavailability of two enteric-coated beads dosage form of diclofenac sodium: Weren[®] EMC (Yu Sheng) and Diclo-puren[®] (Yung Shin) in twelve healthy male volunteers were evaluated. From calculated pharmacokinetic parameters, the possible bio-equivalency of these two groups formulations were determined.

We used high performance liquid chromatography method to analysis the plasma samples. The HPLC conditions are included RP-18 column, mobile phase is methanol:0.1% ortho-phosphoric acid=78:22, internal standard is Mefenamic acid, and monitoring at UV 280 nm. This method showed good linearity, the intra- and inter-day validation is reasonably with the C.V. less than 10 %. The relative recovery ratio is above 90 %.

We found that two sustained-release dosage form of diclofenac sodium: DSSR and Voltaren[®] SR were not equal. The two enteric-coated beads dosage form of diclofenac sodium: Weren[®] EMC and Diclo-puren[®], By coparing the pharmacokinetics included AUC, C_{max}, T_{max}, T_{1/2}, there are no significant statistic difference between each pair of the parameter (P >0.05), This indicated that this two products were equal.