EFFECTS OF CONCURRENT ADMINISTRATION OF CAFFEINE WITH ASPIRIN ON ASPIRIN PHARMACOKINETICS AND HEPATIC DRUG METABOLISM

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ABSTRACT

Concurrent administration of caffeine (C) with aspirin (A) orally to rats (A:C = 100:9.2, twice daily for 7 days and A:C = 200:18.4 mg/kg, twice daily for 2 days) caused significant increase in the area under the plasma salicylate time curve when compared to aspirin administration alone or after giving drug combination as a single dose. These multiple doses treatment with either aspirin alone or with caffeine had no effect on the liver and kidney as shown by SGPT, BUN and photomicrograph. The same treatment with aspirin, caffeine or aspirin with caffeine caused dose and time-dependent increase in hepatic aniline hydroxylase activity without affecting aminopyrine N-demethylase activity and the microsomal protein content. Caffeine did not caused any additive effect on enzyme induction by aspirin at low dose (A:C = 50:4.6 mg/kg and 100:9.2 mg/kg) but showed significant additive effect at higher dose (A:C = 200:18.4 mg/kg). Enzyme induction of aspirin was confirmed by the decrease in the zoxazolamine paralysis time in vivo.