Effect of nutritional status on chloramphenicol pharmacokinetics (CAP)

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Fourteen healthy males 19-40 years old were selected according to nutritional status using weight/height (W/H) as % of ideal and body fat derived from fat fold measurements. The "underweight group" had W/H ranging from 80-100 ((mean±SD 91.7±6.4 and 18.2±2.6% body fat, the control group had W/H 100-120 (mean±SD 108.8±7.5) and (24.4±3% fat). Both groups received 25 mg/kg body weight CAP as succinate by intravenous bolus. Blood samples were obtained at 0, 30, 60, 90, 120, 240 and 360 min. Free plasma CAP levels were measured by a radioenzymatic method. Pharmacokinetics parameters were obtained from the linear regression of log e plasma concentration versus time: slope (K), half life (t 1/2), distribution volume (Vd), l/kg BW; Vd l/kg fat. No significant differences were found between the two groups for the classic pharmacokinetics parameters, but Vd l/kg fat was significantly different between the groups 6.52±2.51 for the underweight versus 4.1±0.44 for control ($p<0.02$). We conclude that