

Absorption and disposition kinetics of amoxicillin in normal human subjects

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Pharmacokinetic parameters of amoxicillin were studied in healthy fasted subjects after both oral and intravenous administration of a single 50 mg dose. Serum levels and urinary excretion rates were determined at various time intervals by a microbiological method. The conventional two-compartment model with elimination occurring from the central compartment was used to analyze the data. Mean values were 3.40 h^{-1} for λ_1 and 0.68 h^{-1} for λ_2 . Distribution constants k_{12} and k_{21} were 0.92 h^{-1} and 1.99 h^{-1} , respectively. The rate constant for elimination from the central compartment, k_{10} , was 1.16 h^{-1} . The volume of distribution was 20.2 liters (0.30 liter/kg), and the serum clearance was 13.3 liters/h. The absorption rate constant, k_a , in the oral study, calculated by the Loo Riegelman method, was 1.02 h^{-1} , and the absorption half life was 0.72 h. Absolute bioavailability after the oral dose was determined by comparing both the areas under the curve (AUC) and fractions of the antibiotic excre