Original Article

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Dietary saccharin kinetics

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Abstract

Six adult female subjects who use saccharin-containing products in their diet were asked to take divided equal doses of saccharin every 6 hr to maintain their average daily intake for 3 days. At the end of this period, each subject took a single dose that was equal to one divided dose. Saccharin concentrations in plasma and urine samples were used to assess the kinetic profile. Saccharin absorption was rapid with maximum concentrations in plasma in 0.5 to 1.0 hr. Maximum plasma concentrations and areas under the plasma concentration-time curves were proportional to dose. Renal clearance exceeded glomerular filtration rate in all cases and approximated renal plasma flow when corrected for the saccharin free fraction in plasma. Mean elimination half-life was 7.5 hr and mean apparent volume of distribution was 264 l. The kinetic parameters indicate that saccharin is distributed as a function of lean rather than total body mass (suggesting that saccharin does not distribute into body fat). This observation, together with data from studies in animals, suggests that there may be one or more high-retention compartments for saccharin.

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