1: Clin Pharmacol Ther. 1981 May;29(5):625-33. Related Articles, Links

Analgesic drugs in breast milk and plasma.

Findlay JW, DeAngelis RL, Kearney MF, Welch RM, Findlay JM.

The disposition of salicylic acid, phenacetin, caffeine, and codeine, and two metabolites, acetaminophen and morphine, was studied in breast milk and plasma of two lactating mothers after single oral doses of a compound analgesic. Salicylic acid penetrated poorly into milk, with peak levels of only 1.12 to 1.60 micrograms/ml, whereas peak plasma levels were 33 to 43.4 micrograms/ml. The drug was also eliminated more slowly from milk than plasma. In contrast, caffeine and phenacetin kinetics in breast milk and plasma were similar, but milk levels were somewhat lower than plasma levels in both subjects. Metabolically produced acetaminophen levels in both fluids were much higher than those of the parent drug, phenacetin, in one subject, but early plasma and milk phenacetin levels exceeded those of acetaminophen in the other subject, thereafter dropping sharply to assume the pattern of the first subject. Elimination of the metabolite, acetaminophen, from milk was slower than from plasma (subject 1, half-life (t1/2) of drug in milk, 4.7 hr; t1/2 in plasma, 2.9 hr). In both subjects codeine concentrations in milk were 1.5 to 2.4 times as high as in plasma at the same times after drug. Metabolically produced morphine levels in milk from both mothers were low but exceeded those in plasma after 1 hr. Calculations based on average milk concentrations over the 12 hr after drug in subject 1 revealed milk excretion of 0.7% or less of the ingested dose of each drug. Similar calculations based on predicted steady-state milk drug concentrations in subject 2 indicated maximum milk excretion of 2.7% of the dose. In each case caffeine was excreted in the milk in the greatest amount.

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