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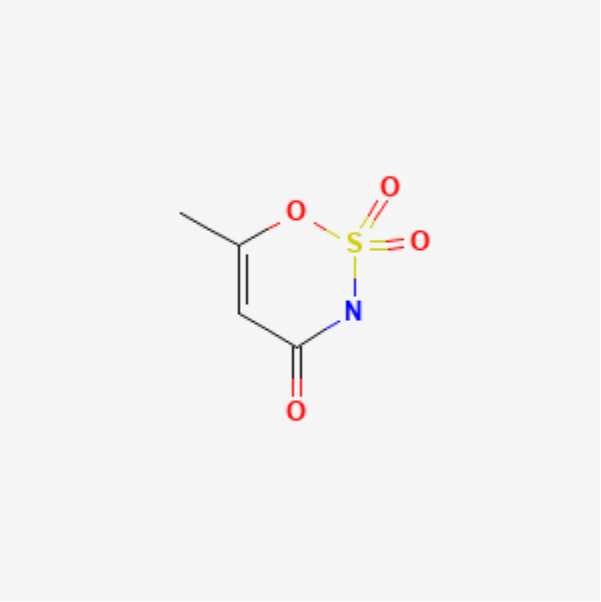
Acesulfame

Revised: July 18, 2022.

CASRN: 33665-90-6



Drug Levels and Effects

Summary of Use during Lactation

Acesulfame has been found in variable concentrations in the breastmilk of nursing mothers who report consuming artificially sweetened beverages and sweetener packets in the past 24 hours. Even some mothers who reported not consuming artificial sweeteners have small amounts of acesulfame in their breastmilk. However, it is not likely to reach an intake greater than the acceptable daily intake.[1] Ingestion of diet drinks containing low-calorie sweeteners might increase the risk of vomiting in breastfed infants. Some authors suggest that women may wish to limit the consumption of nonnutritive sweeteners while breastfeeding because their effect on the nursing infants are unknown.[2,3]

Drug Levels

Maternal Levels. Twenty lactating women completed background questionnaires about breastfeeding and the intake of nonnutritive sweeteners in the prior 24 hours. Each then donated a milk sample that was analyzed for the presence of nonnutritive sweeteners. Sweetener intake was primarily from diet sodas and sweetener packets. Of the 14 women who reported intake of a nonnutritive sweetener, 9 had acesulfame detectable in their breastmilk in concentrations ranging from 0.01 to 2.22 mg/L. In addition, 4 of the 6 women reporting no nonnutritive sweetener intake also had milk acesulfame levels ranging from 0.02 to 0.09 mg/L, probably from hidden sources in food.[2]

Thirty-four women, 14 with normal weight and 20 with obesity, ingested 12 fluidounces of a caffeine-free diet cola containing 68 mg of sucralose and 41 mg acesulfame potassium after an overnight fast prior to breakfast. Breastmilk samples were taken from the same breast every hour for 6 hours. Acesulfame was detectable in breastmilk at baseline before the soda in 18% of women. Peak acesulfame concentrations in breastmilk ranged from 299 to 4764 mcg/L, with one woman having the very high concentration; the median peak concentrations was 945 mcg/L. Acesulfame first appeared in breastmilk 2 hours after ingestion and the peak acesulfame concentration in breastmilk occurred at about 4 hours for all but the outlier, who had a peak concentration at 1 hour after ingestion.[4]

Forty-nine women consumed a beverage containing 85 mg of acesulfame potassium. Normal and overweight women were about equally represented in the sample. Breastmilk samples were collected before the beverage and at 30, 60, 120, 180, 240, 300, and 360 minutes after the beverage. The average peak milk level in 46 of the women was 936 mcg/L and it occurred at 4 hours after the beverage.[5]

Infant Levels. Relevant published information was not found as of the revision date.

Effects in Breastfed Infants

A cross-sectional survey assessed the dietary history of US mothers nursing infants between 11 and 15 weeks of age. The survey was used to estimate the amount of diet soda and fruit drinks consumed by the women. There were no statistically significant differences in infants' weight or z-scores based on low calorie sweetener exposure. However, infants exposed to low calorie sweetener in milk once or less per week had a statistically significantly higher risk of vomiting than those who were not exposed. Greater exposure was not associated with vomiting. It was not possible to assess the effects of specific sweeteners.[6]

Effects on Lactation and Breastmilk

Relevant published information was not found as of the revision date.

Alternate Drugs to Consider

Aspartame

References

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Substance Identification

Substance Name

Acesulfame

CAS Registry Number

33665-90-6

Drug Class

Breast Feeding

Lactation

Milk, Human

Artificial Sweeteners

Sweetening Agents