



Caraway

Revised: May 15, 2024.

Drug Levels and Effects

Summary of Use during Lactation

Caraway (*Carum carvi*) seeds contain numerous volatile oils, the most prominent being carvone and limonene. Caraway is a purported galactagogue,[1-6] but it has also been used to decrease breastmilk oversupply in Persian traditional medicine.[7] Maternal use has been advocated to reduce colic in the breastfed infant.[8] No scientifically valid clinical trials support these uses, although one small, old study found no galactagogue effect. Galactagogues should never replace evaluation and counseling on modifiable factors that affect milk production. [9] Two studies found small, but measurable amounts of d-carvone in the milk of mothers given the chemical experimentally. Caraway is "generally recognized as safe" by the U.S. Food and Drug Administration. It is usually well tolerated, with the primary side effects being gastrointestinal such as heartburn, eructation, flatulence, and nausea. In two studies nursing mothers were given d-carvone. No adverse effects were noted in mothers or infants.

Dietary supplements do not require extensive pre-marketing approval from the U.S. Food and Drug Administration. Manufacturers are responsible to ensure the safety, but do not need to *prove* the safety and effectiveness of dietary supplements before they are marketed. Dietary supplements may contain multiple ingredients, and differences are often found between labeled and actual ingredients or their amounts. A manufacturer may contract with an independent organization to verify the quality of a product or its ingredients, but that does *not* certify the safety or effectiveness of a product. Because of the above issues, clinical testing results on one product may not be applicable to other products. More detailed information [about dietary supplements](#) is available elsewhere on the LactMed Web site.

Drug Levels

Maternal Levels. Eighteen lactating women were given 100 mg of d-carvone mixed with lactose and talc in a capsule on 3 test days. Milk samples were collected every 2 hours for 8 hours starting at the time of ingestion. Carvone was detected in milk at all collection times, with the average concentrations of 1.3 mcg/L at 0 hours, 7.2 mcg/L at 2 hours, 5.6 mcg/L at 4 hours, 4.3 mcg/L at 6 hours and 2.7 mcg/L at 8 hours after the dose. The average peak carvone concentration in milk was 10.5 mcg/L. Carvone metabolites were not detected in any milk samples.[10]

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In another study, 20 mothers consumed 30 mg of d-carvone in 75 grams of hummus every third day for 28 days (10 exposures) at about 2 hours before a "usual" nursing time. Breastmilk samples were obtained 2 hours after ingestion on the first and last days of carvone intake. Carvone was detectable in the milk of 18 mothers. Average carvone concentrations in breastmilk were 2.5 mcg/L and 3.8 mcg/L on the first and last days of sampling, respectively. However, these values did not differ statistically, and the combined average carvone concentration was 3.2 mcg/L. A control group of 20 women who did not ingest d-carvone had no detectable carvone in their breastmilk.[11]

Five women who were nursing infants between 6 and 55 weeks of age drank 950 mL of fennel-anise-caraway tea (Messmer Ostfriesische Tee Gesellschaft Laurens Spethmann GmbH & Co. KG, Seevetal, Germany). The main odorant components of the tea are the following terpenes: limonene, 1,8-cineole, fenchone, estragole, carvone, trans-anethole, p-anisaldehyde and anisketone. Mothers collected milk samples at 30 minutes, 1 and 2 hours after ingesting the tea. Ingestion of the tea did not increase the overall terpene content of the milk, but there was wide variation from mother to mother. Some mothers had high background levels of some terpenes, probably from other foods or person care products. In addition, a sensory panel found no significant change in the odor profile of the breastmilk samples compared to blank samples.[12]

Eighteen nursing mothers who were nursing their infants of 8 to 53 weeks of age were served a curry dish that contained an average of 394 mcg of 1,8-cineole. Baseline 1,8-cineole concentrations in milk averaged 1.44 mcg/L (range 0.07 to 7.57 mcg/L). Milk samples contained 1,8-cineole in concentrations of 0.19 to 7.41 mcg/L at 1 hour after eating, 0.33 to 7.86 mcg/L at 2 hours after eating and 0.22 to 3.33 mcg/L at 3 hours after eating.[13]

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

Effects in Breastfed Infants

A study compared 3 groups of women. One group of 20 nursing mothers consumed 30 mg of d-carvone in 75 grams of hummus every third day for 28 days (10 exposures) at about 2 hours before a "usual" nursing time. A second group of 20 nursing mothers followed the same regimen, but their hummus contained no d-carvone. A third group of 8 mother received the d-carvone flavored hummus, but were exclusively formula feeding their infants. After this 28-day period, both groups of breast-fed infants showed greater acceptance of d-carvone-flavored mashed potatoes than the formula-fed infants who preferred the unflavored potatoes. The authors interpreted these results to mean that breastfed infants are more receptive to a wide array of flavors than formula-fed infants.[11]

Effects on Lactation and Breastmilk

A group of 5 nursing mothers were given no herb for 5 days, 15 mL of a 10% infusion of caraway seeds 3 times daily for 10 days, followed by another 5-day control period from days 15 to 20. Their diet and environment were kept constant during the study period. Milk volume was measured daily and milk fat percentage was measured on days 5, 10, 15 and 20. No effect on milk volume or percentage of fat was seen.[14] Because of the lack of randomization, blinding and controls, and small number of participants, no valid conclusion can be made from this study on the galactagogue effects of caraway.

A randomized trial assigned mothers of preterm infants to receive either a purported herbal galactagogue tea twice daily, a fruit tea twice daily or nothing. The galactagogue tea mixture (Natal, Hipp [Turkey]) contained 1% stinging nettle as well as melissa, caraway, anise, fennel, goat's rue, and lemon grass in unspecified amounts. All mothers received similar breastfeeding advice from the same nurse and two groups were told that the tea would increase milk production, but compliance with the study teas was not assessed. Mother used breast pumps to extract and measure their milk and output on day 1 and day 7 of the study were compared. Although the increase in volume of extracted milk was greater in the galactagogue tea group, there was no difference in maternal serum prolactin between the groups at 7 days. No difference in infant weight gain was seen between

groups, although the authors stated that additional supplementation was provided to all infants in addition to the pumped milk.[15] The study was not blinded, the randomization method was not stated, intent-to-treat analysis was not performed, and some of the numerical results were internally inconsistent, so the quality of the study was poor.

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Substance Identification

Substance Name

Caraway

Scientific Name

Carum carvi

Drug Class

Breast Feeding

Lactation

Milk, Human

Complementary Therapies

Food

Galactogogues

Phytotherapy

Plants, Medicinal