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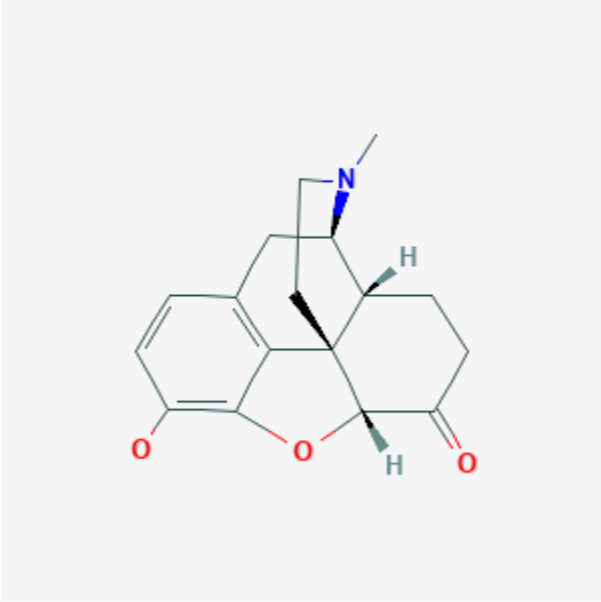
Hydromorphone

Revised: February 7, 2019.

CASRN: 466-99-9



Drug Levels and Effects

Summary of Use during Lactation

Limited data indicate that hydromorphone is excreted into breastmilk in small amounts, but large maternal dosages have caused neonatal central nervous system depression. In general, maternal use of oral narcotics during breastfeeding can cause infant drowsiness, central nervous system depression and even death. Hydromorphone use should be limited in nursing mothers.[1] Newborn infants seem to be particularly sensitive to the effects of even small dosages of narcotic analgesics. Once the mother's milk comes in, it is best to provide pain control with a nonnarcotic analgesic and limit maternal intake of hydromorphone to a few days at a low dosage with close infant monitoring. If the baby shows signs of increased sleepiness (more than usual), difficulty breastfeeding, breathing difficulties, or limpness, a physician should be contacted immediately.

Drug Levels

In adults, hydromorphone has an oral bioavailability of 62% and is metabolized to inactive metabolites. While not commonly used in infants, an appropriate dose for this age group is 10 mcg/kg parenterally or 30 mcg/kg orally every 4 hours as needed.

Maternal Levels. Eight lactating women (time postpartum not given) were given a single 2 mg intranasal dose of hydromorphone. Milk was collected 7 times, beginning 2 hours after and ending 24 hours after the dose. Peak milk levels occurred 2 hours after the dose. The half-life of elimination from milk was 10.5 hours. The reported average milk level, over the 24 hour period after the single dose, was about 1 mcg/L. The authors calculated that an exclusively breastfed infant would receive 0.67% of the maternal weight-adjusted dosage.[2] Using the average milk level reported in this study, an exclusively breastfed infant would receive 0.15 mcg/kg daily from a single maternal 2 mg intranasal hydromorphone dose. Intranasal hydromorphone is not currently available in the U.S.

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

Effects in Breastfed Infants

A 6-day-old infant was being partially breastfed by a mother who was taking hydromorphone 4 mg every 4 hours for pain following a cesarean section. The infant was brought to the emergency department because of excessive drowsiness. The infant was having intermittent bradycardia and had an apneic event requiring bag-valve-mask intervention. The infant received 0.36 mg of naloxone and within 30 seconds developed spontaneous respirations, a heart rate of 165 beats/minute and increased alertness. Fifteen minutes later, he had another apneic episode that resolved rapidly with another dose of naloxone. Extensive laboratory testing was performed and all tests were negative, including a urine opiate screen. The authors note that most urine opiate screening tests are insensitive to semisynthetic opiates such as hydromorphone that are not metabolized to morphine.[3] The infant's apnea was probably caused by hydromorphone in breastmilk.

Effects on Lactation and Breastmilk

Narcotics can increase serum prolactin.[4] However, the prolactin level in a mother with established lactation may not affect her ability to breastfeed.

Alternate Drugs to Consider

Acetaminophen, Ibuprofen, Morphine

References

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2. Edwards JE, Rudy AC, Wermeling DP et al. Hydromorphone transfer into breast milk after intranasal administration. Pharmacotherapy. 2003;23:153-8. PubMed PMID: 12587803.
3. Schultz ML, Kostic M, Kharasch S. A case of toxic breast-feeding? Pediatr Emerg Care. 2019;35:E9-E10. PubMed PMID: 28067687.
4. Tolis G, Dent R, Guyda H. Opiates, prolactin, and the dopamine receptor. J Clin Endocrinol Metab. 1978;47:200-3. PubMed PMID: 263291.

Substance Identification

Substance Name

Hydromorphone

CAS Registry Number

466-99-9

Drug Class

Breast Feeding

Lactation

Analgesics, Opioid

Narcotics

Antitussive Agents

Opiates