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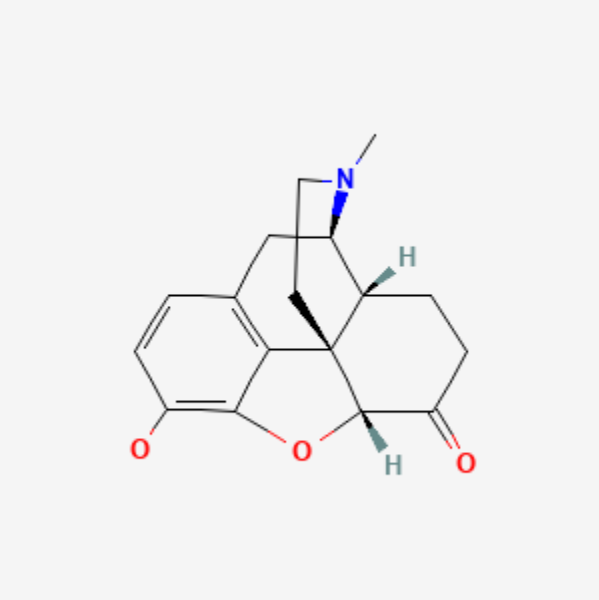
Hydromorphone

Revised: June 15, 2026.

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 opioids during breastfeeding can cause infant drowsiness, which may progress to rare but severe central nervous system depression. Newborn infants seem to be particularly sensitive to the effects of even small dosages of narcotic analgesics. If hydromorphone is required by the mother of a newborn, it is not a reason to discontinue breastfeeding; however, 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 2 to 3 days at a low dosage with close infant monitoring.[1] If the baby shows signs of increased sleepiness (more than usual), difficulty breastfeeding, breathing difficulties, or limpness, a physician should be contacted immediately. Withdrawal symptoms can

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occur in breastfed infants when maternal administration of an opioid analgesic is stopped, or when breastfeeding is stopped.

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 US.

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 oral 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 found that 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.

An infant was born to a mother with opioid use disorder who was taking up to 2 grams of intravenous fentanyl daily. In the hospital she was transitioned to intravenous hydromorphone 120 mg three times daily, oral hydromorphone 32 mg every hour as needed, and methadone 70 mg daily by mouth. After 9 days of tapering the oral morphine dosage, the infant was given 72 mL of the mother's expressed milk. On day 10, the infant received two doses of 0.1 mg of oral morphine and then breastfed for 30 minutes 3 hours after a maternal dose of 110 mg of intravenous hydromorphone. The infant was alert and active, feeding and sleeping well, and the infant's morphine was discontinued. There were no clinically relevant episodes of apnea, bradycardia, desaturation, signs of respiratory depression, or excessive sedation. The infant continued to receive formula plus either breastfeeding or expressed milk with no clinically important adverse effects. The mother's hydromorphone dose was tapered over 47 days while oral methadone and oral slow-release morphine were increased to 190 mg and 1200 mg daily, respectively, and she was discharged on day 58 postpartum. The extent of breastfeeding after hospital discharge was not reported. At 4 months of age, the infant scored above average on all developmental domains.[4]

In population study in the province of Ontario, Canada, 85,852 who filled an opioid prescription within seven days of discharge after delivery were matched to 538,815 did not. Compared with infants born to mothers who were not prescribed an opioid, those born to mothers prescribed an opioid were no more likely to be admitted to hospital in the 30 days after the index date. Infants born to mothers prescribed opioids after delivery were slightly more likely to be taken to the emergency department in the subsequent 30 days (hazard ratio 1.04). No infant deaths occurred. Twelve percent of the mothers prescribed an opioid were prescribed hydromorphone. Of note is that the median drug supply was for 3 days (IQR 2-4).[5]

Effects on Lactation and Breastmilk

Opioids can increase serum prolactin.[6] However, the prolactin level in a mother with established lactation may not affect her ability to breastfeed.

A randomized study in women receiving a cesarean section compared postoperative patient-controlled analgesia with hydromorphone 0.2 mg/kg to sufentanil 2 mcg/kg. Both regimens included intravenous palonosetron 4 mcg/kg. The hydromorphone group had higher breastfeeding satisfaction at 72 hours postpartum. The frequency of dizziness and drowsiness within 48 hours also was lower in the hydromorphone group.[7]

A randomized trial allotted women undergoing cesarean section to receive combined spinal-epidural anesthesia with either sufentanil 3 mcg/kg or hydromorphone 0.15 mg/kg plus each group received tropisetron 0.1 mg/kg diluted to 150 mL. The times to first lactation were no different between the groups.[8]

Alternate Drugs to Consider

Acetaminophen, Butorphanol, Fentanyl, Hydromorphone, Ibuprofen, Morphine

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Substance Identification

Substance Name

Hydromorphone

CAS Registry Number

466-99-9

Drug Class

Breast Feeding

Lactation

Milk, Human

Analgesics, Opioid

Narcotics

Antitussive Agents

Opiates