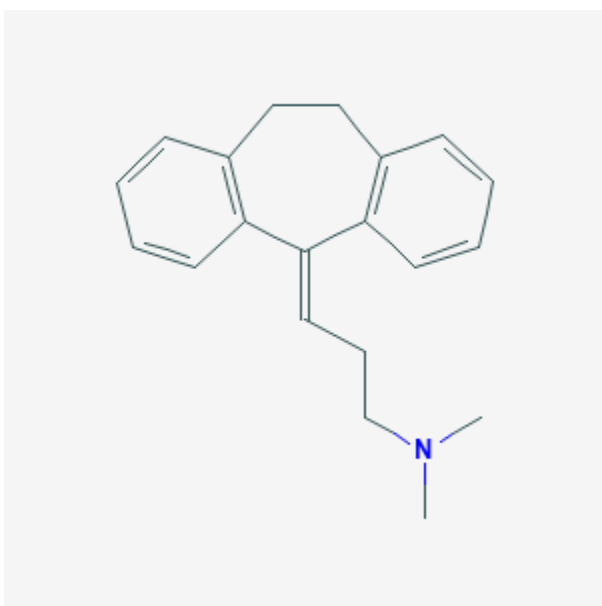




Amitriptyline

Revised: February 17, 2020.

CASRN: 50-48-6



Drug Levels and Effects

Summary of Use during Lactation

Milk levels of amitriptyline and its metabolites are low. Immediate side effects have not been reported and a limited amount of follow-up has found no adverse effects on infant growth and development. Amitriptyline use during breastfeeding would usually not be expected to cause any adverse effects in breastfed infants, especially if the infant is older than 2 months. However, rare sedation has been reported in a neonate. Other agents with fewer active metabolites may be preferred when large doses are required or while nursing a newborn or preterm infant.

Drug Levels

Maternal Levels Amitriptyline is metabolized to nortriptyline which has antidepressant activity equal to amitriptyline's.[1]

A mother who had been taking amitriptyline 100 mg daily for 6 weeks postpartum had breastmilk levels of amitriptyline and nortriptyline of 151 and 59 mcg/L, respectively, 16 hours after a dose. Eleven days later, breastmilk levels of amitriptyline and nortriptyline were 135 and 52 mcg/L, respectively, 14 hours after the dose. [2] The amounts in milk represent an infant dosage of about 1.8% of the maternal weight-adjusted dosage.

Amitriptyline and nortriptyline were measured in breastmilk in a mother who was taking amitriptyline 75 mg daily. Her milk amitriptyline levels were 104 and 72 mcg/L and her nortriptyline levels were 75 and 63 mcg/L at 2 and 10 weeks, respectively, after starting treatment (time after dose not specified). After 19 weeks of therapy, an amitriptyline dose of 25 mg daily produced milk amitriptyline levels of 30 mcg/L; nortriptyline levels were not detectable (<30 mcg/L). The authors estimated that this infant would receive 1% of the maternal weight-adjusted dosage.[3]

Another mother who was taking amitriptyline 175 mg daily had amitriptyline and nortriptyline milk levels of 13 and 15 mcg/L each on the morning and evening of the first day of therapy. On days 2 to 26 of therapy, milk amitriptyline ranged from 23 to 38 mcg/L. On day 26 milk nortriptyline was about 64 mcg/L. E-10-hydroxynortriptyline was found in milk in levels averaging 89 mcg/L over this 26-day time period.[4]

A 2-week postpartum mother of a preterm infant had been taking amitriptyline 100 mg daily for 4 days when milk was analyzed. Milk amitriptyline levels were highest at 1.5 and 6 hours after the dose at 103 and 100 mcg/L, respectively. They fell to 29 mcg/L 24 hours after the dose. Milk nortriptyline levels were highest at 18 hours after the dose at 58 mcg/L.[5] Using the peak milk level data from this study, an exclusively breastfed infant would receive an estimated maximum of 0.9% of the maternal weight-adjusted dosage.

Two mothers who were taking amitriptyline had milk samples taken 12 to 15 hours after their daily dose. The mother taking 100 mg daily had a foremilk level of 30 mcg/L and a hindmilk level of 113 mcg/L. The mother taking 175 mg daily had a hindmilk level of 197 mcg/L.[6] Using the hindmilk data from this study, an exclusively breastfed infant would receive an estimated maximum of 1% of the maternal weight-adjusted dosage.

Infant Levels. A mother who had been taking amitriptyline 150 mg daily for 3 weeks was nursing her infant (extent not stated). Amitriptyline and nortriptyline were undetectable (<28 mcg/L) in the infant's serum.[7]

A mother who had been taking amitriptyline 100 mg daily for 7.5 weeks postpartum was nursing her infant. Amitriptyline and nortriptyline were undetectable (<10 mcg/L) 14 hours after a dose.[2]

A 3-week-old breastfed had undetectable serum amitriptyline (<5 mcg/L) and nortriptyline (<15 mcg/L) during maternal amitriptyline use of 75 mg daily.[3]

After 26 days of breastfeeding (4 of 6 daily feedings; 500 to 600 mL daily) during maternal use of amitriptyline 175 mg daily, amitriptyline and its metabolites were undetectable in the serum of one infant.[4]

One infant whose mother was taking amitriptyline 100 mg daily, had a plasma level of 7.5 mcg/L at an unspecified time after the maternal dosage.[8]

Effects in Breastfed Infants

At least 23 infants have been reported to have been exposed to amitriptyline in breastmilk with no reports of adverse reactions with maternal dosages from 75 to 175 mg daily.[3,6,9,10]

Follow-up for 1 to 3 years in a group of 20 breastfed infants whose mothers were taking a tricyclic antidepressant found no adverse effects on growth and development. One of the mothers whose infant was followed up at 18 months of age was taking amitriptyline 150 mg daily.[9] Two small controlled studies indicate that other tricyclic antidepressants have no adverse effect on infant development.[8,11] In one of the studies, 2 mothers were taking amitriptyline 100 and 175 mg daily. One of the infants tested in the low normal range from birth and on repeat testing.[8]

In another study, 25 infants whose mothers took a tricyclic antidepressant during pregnancy and lactation were tested formally between 15 to 71 months and found to have normal growth and development. Some of the mothers were taking amitriptyline.[10]

A nursing mother was prescribed amitriptyline 10 mg daily for insomnia. After 3 days of the medication, her 15-day-old infant developed severe sedation and an estimated 80% decrease in breastfeeding because of the sedation. The infant was otherwise normal on examination. The drug was discontinued and symptoms decreased within 24 hours and were absent after 48 hours. Amitriptyline was restarted at 10 mg daily. The same effects reappeared in the infant and again disappeared by 48 hours after discontinuation of the drug.[12] The infant's sedation was probably caused by amitriptyline in breastmilk.

A case-control study in Israel compared 280 infants of nursing mothers taking long-term psychotropic drugs to the infants of 152 women taking antibiotics. Neonatal infant sleepiness was reported by 1 mother taking amitriptyline and none taking antibiotics.[13]

Effects on Lactation and Breastmilk

Amitriptyline has caused increased prolactin levels in nonpregnant, nonnursing patients.[14-16] The clinical relevance of these findings in nursing mothers is not known. The prolactin level in a mother with established lactation may not affect her ability to breastfeed.

An observational study looked at outcomes of 2859 women who took an antidepressant during the 2 years prior to pregnancy. Compared to women who did not take an antidepressant during pregnancy, mothers who took an antidepressant during all 3 trimesters of pregnancy were 37% less likely to be breastfeeding upon hospital discharge. Mothers who took an antidepressant only during the third trimester were 75% less likely to be breastfeeding at discharge. Those who took an antidepressant only during the first and second trimesters did not have a reduced likelihood of breastfeeding at discharge.[17] The antidepressants used by the mothers were not specified.

A retrospective cohort study of hospital electronic medical records from 2001 to 2008 compared women who had been dispensed an antidepressant during late gestation (n = 575; amitriptyline n = 30) to those who had a psychiatric illness but did not receive an antidepressant (n = 1552) and mothers who did not have a psychiatric diagnosis (n = 30,535). Women who received an antidepressant were 37% less likely to be breastfeeding at discharge than women without a psychiatric diagnosis, but no less likely to be breastfeeding than untreated mothers with a psychiatric diagnosis.[18]

Alternate Drugs to Consider

Nortriptyline, Paroxetine, Sertraline

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Substance Identification

Substance Name

Amitriptyline

CAS Registry Number

50-48-6

Drug Class

Breast Feeding

Lactation

Antidepressive Agents

Antidepressive Agents, Tricyclic