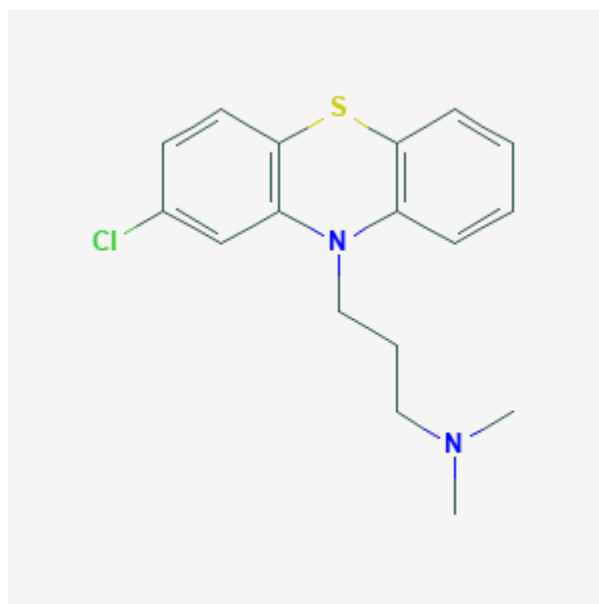




Chlorpromazine

Revised: October 31, 2018.

CASRN: 50-53-3



Drug Levels and Effects

Summary of Use during Lactation

Chlorpromazine is detectable in the milk of some mothers during therapy, but levels appear not to correlate well with the maternal dose or serum level. Some breastfed infants become drowsy during maternal chlorpromazine therapy. Very limited long-term follow-up data indicate no adverse developmental effects when the drug is used alone. However, using it in combination with haloperidol can negatively affect development. Monitor the infant for excessive drowsiness during breastfeeding and for developmental milestones, especially if other antipsychotics are used concurrently.

Drug Levels

Maternal Levels. A peak level of 290 mcg/L was found 2 hours after a single oral dose of 1200 mg in one woman. This was estimated to be about 1.6% of the infant dosage.[1]

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Chlorpromazine appeared in milk at a level of 10 to 14 mg/L with a 200 mg dose in another mother.[2]

Chlorpromazine metabolites appeared in milk only with doses above 200 mg in a study of 15 patients. It was not detectable (assay limit not specified) in 3 of the women's milk.[3]

The above studies used old insensitive and nonspecific assays. A more recent paper reported chlorpromazine milk levels of 7 to 98 mcg/L in 4 women whose serum levels ranged from 16 to 52 mcg/L (dosage not stated). Metabolites were also detectable, but not quantified. No clear, consistent relationship was found between serum and milk levels.[4]

Chlorpromazine was measured in the milk of 4 women on long-term oral chlorpromazine therapy. In one mother taking 40 mg daily, milk level was 5.5 mcg/L; in 3 others, the drug was undetectable (<5 mcg/L) in milk with maternal doses of 100, 120 and 200 mg daily.[5][6]

Four patients who were taking chlorpromazine had foremilk and/or hindmilk samples collected on 1 or 2 occasions 12 to 15 hours after the previous dose of chlorpromazine. HPLC assay found that foremilk chlorpromazine levels ranged from <1 to 271 mcg/L, with no correlation to the maternal doses of 50 to 600 mg daily. Three hindmilk concentrations ranged from 4.2 to 18.9 mcg/L. Measurement of the same samples with an enzyme immunoassay found higher levels, ranging from undetectable to 568 mcg/L. The authors considered these higher values to represent the contribution of undetermined metabolites that were unmeasured by HPLC. [7]

Infant Levels. Two patients who were taking chlorpromazine in doses of 50 and 400 mg daily breastfed their infants (extent not stated). Two samples of urine were provided by each infant on separate occasions. Enzyme immunoassay, which apparently measures chlorpromazine plus some metabolites, found urine drug concentrations ranging from 0.98 to 1.4 mcg/L.[7]

Effects in Breastfed Infants

In an early report on the use of chlorpromazine in "numerous" cases (dosage unspecified), it was noted that "occasionally" breastfed newborns whose mothers were taking chlorpromazine exhibited placidity, with only one infant sufficiently symptomatic to require discontinuation of chlorpromazine.[8]

Drowsiness and lethargy occurred in one breastfed infant possibly related to chlorpromazine; another breastfed infant had no adverse effects. Neither maternal dosages nor serum levels were stated; however, the breastmilk chlorpromazine concentration was 92 mcg/L in the mother of the affected infant and 7 mcg/L in the mother of the unaffected infant.[4]

A 5-month-old breastfed infant whose mother was taking chlorpromazine and dichloralphenazone, a chloral hydrate prodrug, became drowsy. Drowsiness was possibly related to chlorpromazine, but dichloralphenazone probably contributed.[9]

Seven infants were breastfed for 3 to 4 months during maternal chlorpromazine therapy 50 to 150 mg/day at bedtime. They were followed clinically for periods of 5 to 16 months, blood counts and liver function tests were normal and the infants were healthy with normal development and behavior.[10] Five of the infants were later followed up at ages up to 4 to 5 years. No discernible problems in behavior, or emotion or mental disturbances were noted.[11]

Six infants whose mothers were taking chlorpromazine had no discernible adverse effects from chlorpromazine in breastmilk. The infants were breastfed from birth, four for 3 months, one for 7 weeks, and one for 1 month. [12]

In a small prospective study on the long-term effects of antipsychotics in breastfed infants, a decline in developmental scores was found at 12 to 18 months of age in 2 of the 4 the infants of mothers taking both

chlorpromazine and haloperidol. The other two infants and all infants exposed to either drug alone developed normally.[7]

Effects on Lactation and Breastmilk

Phenothiazines cause galactorrhea in 26 to 40% of female patients.[13][14] Hyperprolactinemia appears to be the cause of the galactorrhea.[15][16][17] The hyperprolactinemia is caused by the drug's dopamine-blocking action in the tuberoinfundibular pathway.[18]

Chlorpromazine has been used to enhance milk production,[8][19] although this use has been supplanted by the use of less sedating drugs such as metoclopramide and domperidone.[20]

Alternate Drugs to Consider

Haloperidol, Olanzapine, Risperidone

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Substance Identification

Substance Name

Chlorpromazine

CAS Registry Number

50-53-3

Drug Class

Breast Feeding

Lactation

Antipsychotic Agents

Phenothiazines