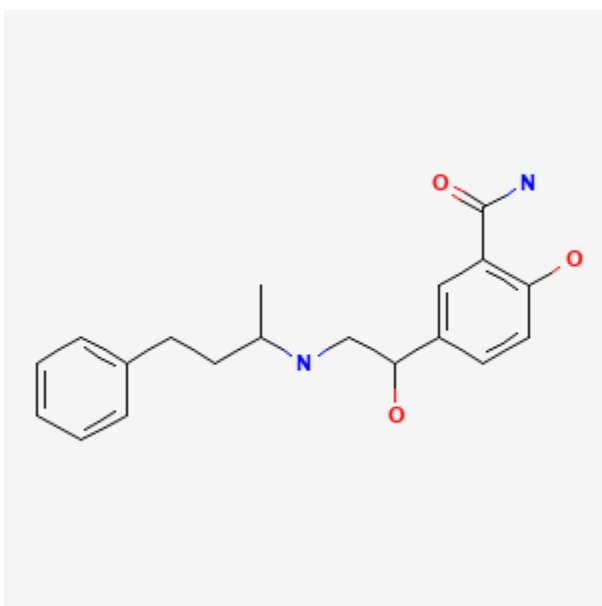




Labetalol

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CASRN: 36894-69-6



Drug Levels and Effects

Summary of Use during Lactation

Because of the low levels of labetalol in breastmilk, amounts ingested by the infant are small and would not be expected to cause any adverse effects in fullterm breastfed infants. No special precautions are required in most infants. However, other agents may be preferred while nursing a preterm infant. Labetalol may predispose nursing mothers to Raynaud's phenomenon of the nipple.

Drug Levels

The excretion of beta-adrenergic blocking drugs into breastmilk is largely determined by their protein binding. Those with low binding are more extensively excreted into breastmilk.[1] Accumulation of the drugs in the

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infant is related to the fraction excreted in urine. With 50% protein binding, 5% renal excretion and a moderate half-life, labetalol presents moderately low risk for accumulation in infants.

Maternal Levels. Random milk levels from 15 women on the third day postpartum averaged 27.5 mcg/L after maternal doses ranging from 330 to 400 mg daily. One of the women who took labetalol 400 mg daily for 5 weeks had no detectable drug in breastmilk (assay limit not specified). In another 9 women taking 600 to 800 mg daily, the average random milk level was 41 mcg/L. In one patient taking 1200 mg daily, a random milk level of 600 mcg/L was found.[2]

Peak milk levels averaging 70 mcg/L were found after a single 200 mg oral dose in 9 women.[3] Peak milk levels of 129, 223 and 662 mcg/L were found in 3 women taking 600, 600 and 1200 mg daily, respectively.[4] Peak milk levels occur 1 to 3 hours after the dose.[3,4]

Infant Levels. The average dose received by breastfed infants is estimated to be between 0.004% and 0.07% of the maternal dose.[3,5]

In a 6-day-old breastfed infant whose mother was taking labetalol 600 mg daily, labetalol in plasma was 18 and 21 mcg/L at 4 and 8 hours after the maternal dose; labetalol was undetectable in a 7-day-old infant whose mother was taking the same dosage.[4]

Effects in Breastfed Infants

One investigator reported that no adverse effects occurred in breastfed infants whose mothers were taking labetalol in doses of 330 to 800 mg daily.[3]

A 26-week premature infant weighing 640 grams developed sinus bradycardia (80 to 90 bpm) and isolated atrial premature beats after nasogastric feeding with mother's pumped breastmilk was begun on day 8 of life. The mother was taking labetalol 300 mg twice daily by mouth for hypertension. Bradycardia and premature beats resolved within 24 hours of substitution of formula for breastmilk. No other causes for the bradycardia could be identified. One untimed sample of the mother's breastmilk contained 710 mcg/L of labetalol.[6] Although the authors estimated the infant's dose to be 100 mg/kg daily, a recalculation using their data indicates that the infant's dose was only 100 mcg/kg daily.

A 2-month-old infant was being breastfed exclusively by a mother taking labetalol 100 mg twice daily. The infant's electrocardiogram had a regular heart rate, but borderline prolonged QT. The infant was started on propranolol 1 mg/kg daily for infantile hemangioma. One month later, the infant had a normal QT interval. A second infant was exclusively breastfed by a mother taking labetalol 150 mg twice daily and nifedipine 60 mg daily. The infant was started on propranolol 0.6 mg/kg daily for infantile hemangioma. The propranolol dose was increased over 2 weeks to 3.4 mg/kg daily. The infant had some sleeping difficulties with the higher propranolol dose, but no other symptoms.[7]

Effects on Lactation and Breastmilk

Intravenous labetalol can increase serum prolactin in men and non-nursing women, although the increase is greater in women. Oral labetalol does not increase serum prolactin.[8,9] The maternal prolactin level in a mother with established lactation may not affect her ability to breastfeed.

A woman with a history of symptoms of Raynaud's phenomenon developed Raynaud's phenomenon of the nipples when treated for pregnancy-induced hypertension with labetalol 100 mg twice daily. She breastfed for 5 weeks, but nursing caused pain in her nipples. In a subsequent pregnancy, similar symptoms occurred during treatment with labetalol 100 mg twice daily. Discontinuing labetalol eliminated the nipple pain in both instances.[10]

A pregnant woman was treated on two occasions with intravenous labetalol for pre-eclampsia. On each occasion, she reported a burning sensation of the nipples. While continuing on labetalol, sustained-release nifedipine was added to her regimen and the burning of the nipple did not return.[11]

Alternate Drugs to Consider

Propranolol, Metoprolol

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Substance Identification

Substance Name

Labetalol

CAS Registry Number

36894-69-6

Drug Class

Breast Feeding

Lactation

Antihypertensive Agents

Adrenergic Beta-Antagonists

Antiarrhythmics