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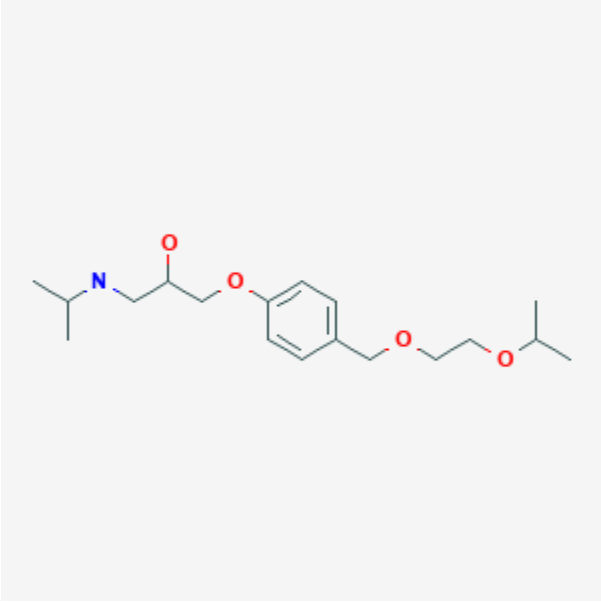
Bisoprolol

Revised: June 3, 2019.

CASRN: 66722-44-9



Drug Levels and Effects

Summary of Use during Lactation

Because there is little published experience with bisoprolol during breastfeeding, other agents may be preferred, especially while nursing a newborn or preterm infant.

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 infant is related to the fraction excreted in urine. With 30% protein binding, 50% renal excretion and a moderately long half-life, bisoprolol presents a moderately high risk for accumulation in infants, especially neonates. No published studies could be located that measured bisoprolol in human milk or the serum of breastfed infants.

Maternal Levels. A woman was admitted at 36 weeks of pregnancy with complete heart block followed by ventricular tachycardia and fibrillation. After stabilization, she was given several doses of amiodarone and begun on bisoprolol 5 mg daily by mouth on day 9 of admission. She pumped her milk and provided 6 aliquots over a 6 day period (time with respect to dosage not stated). Bisoprolol was undetectable (<1 mcg/L) in all samples.[2]

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

Effects in Breastfed Infants

A study of mothers taking beta-blockers during nursing found a numerically, but not statistically significant increased number of adverse reactions in those taking any beta-blocker. Although the ages of infants were matched to control infants, the ages of the affected infants were not stated. However, none of the mothers were taking bisoprolol.[3] Beta-adrenergic blocking drugs with breastmilk excretion characteristics similar to bisoprolol have caused adverse effects in breastfed newborns.[4][5]

A woman was diagnosed with Cushing's disease during pregnancy. Postpartum she took metyrapone 250 mg 3 times daily, bisoprolol 10 mg twice daily, and captopril 12.5 mg twice daily. She breastfed her preterm infant about 50% milk and 50% formula. At 5 weeks postpartum, the infant's pediatric team found his growth and development to be appropriate.[4]

Effects on Lactation and Breastmilk

A study in 6 patients with hyperprolactinemia and galactorrhea found no changes in serum prolactin levels following beta-adrenergic blockade with propranolol.[5] Relevant published information on the effects of beta-blockade or bisoprolol during normal lactation was not found as of the revision date.

Alternate Drugs to Consider

Propranolol, Labetalol, Metoprolol

References

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3. Ho TK, Moretti ME, Schaeffer JK et al. Maternal beta-blocker usage and breast feeding in the neonate. Pediatr Res. 1999;45:67A. Abstract 385.
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Substance Identification

Substance Name

Bisoprolol

CAS Registry Number

66722-44-9

Drug Class

Breast Feeding

Lactation

Antihypertensive Agents

Adrenergic Beta-Antagonists

Antiarrhythmics