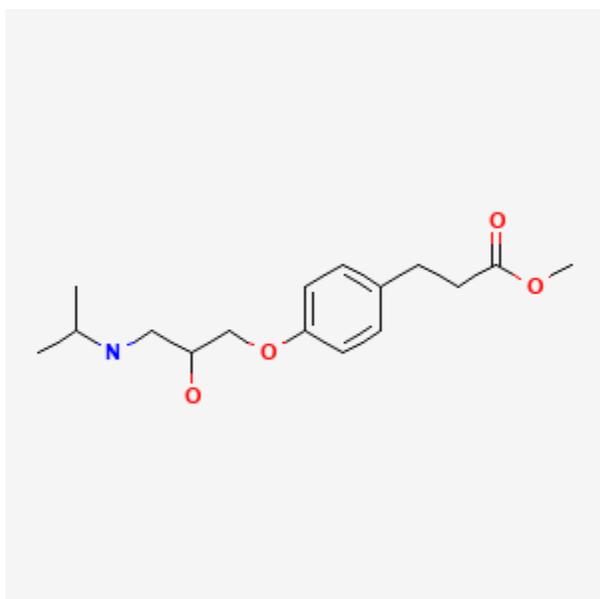




## Esmolol

Revised: October 15, 2024.

CASRN: 81147-92-4



## Drug Levels and Effects

### Summary of Use during Lactation

No published information is available on the use esmolol during breastfeeding. Based on its physicochemical properties and extremely short half-life, esmolol would not be expected to cause any adverse effects in breastfed infants.

### 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 55% protein binding, less than 1% renal excretion and an extremely short half-life of less than 10 minutes, esmolol presents no risk for accumulation in infants.

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

*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. None of the mothers were taking esmolol.[2]

## Effects on Lactation and Breastmilk

Relevant published information on the effects of beta-blockade or esmolol during normal lactation was not found as of the revision date. A study in 6 patients with hyperprolactinemia and galactorrhea found no changes in serum prolactin levels following beta-adrenergic blockade with propranolol.[3]

## Alternate Drugs to Consider

Propranolol, Labetalol, Metoprolol

## References

1. Riant P, Urien S, Albengres E, et al. High plasma protein binding as a parameter in the selection of betablockers for lactating women. *Biochem Pharmacol* 1986;35:4579-81. PubMed PMID: 2878668.
2. Ho TK, Moretti ME, Schaeffer JK, et al. Maternal beta-blocker usage and breast feeding in the neonate. *Pediatr Res* 1999;45 (4, pt. 2):67A. doi:10.1203/00006450-199904020-00402
3. Board JA, Fierro RJ, Wasserman AJ, et al. Effects of alpha- and beta-adrenergic blocking agents on serum prolactin levels in women with hyperprolactinemia and galactorrhea. *Am J Obstet Gynecol* 1977;127:285-7. PubMed PMID: 556882.

## Substance Identification

### Substance Name

Esmolol

### CAS Registry Number

81147-92-4

### Drug Class

Breast Feeding

Lactation

Milk, Human

Antihypertensive Agents

Adrenergic Beta-Antagonists

## Antiarrhythmics