

Breastfeeding and Medication



Breastfeeding and Bisoprolol

Use labetalol, metoprolol or propranolol as alternative if possible, especially in neonates. But with older babies theoretical risk is low from one single case study where levels were undetectable

Bisoprolol is a beta blocker used to treat hypertension and is particularly used where there are cardiac issues. It may be used to prevent future heart disease, heart attacks and strokes or to treat irregularities of heart beat. Sometimes it is not possible to replace it with beta blockers on which we have more information in lactation e.g. propranolol, labetalol or metoprolol.

Hypoglycaemia in the neo natal period

In many maternity units the use of beta blockers triggers the hypoglycaemia policy involving blood sugar testing. The amount of labetalol, propranolol and metoprolol passing into breastmilk is low and these drugs are less likely to lower blood sugars than atenolol (which has low plasma protein binding and passes more extensively into milk). The risk to the baby stems from the fact that babies born to mothers with pre-eclampsia may be born (or induced) early or may have experienced intra-uterine growth retardation. The efficacy of the baby's feeding and milk transfer should be assessed as well as blood sugars. If necessary the mother may need to hand express and syringe/cup/spoonfeed colostrum to her infant.

Bisoprolol studies

Many mothers with pre-existing conditions are taking bisoprolol throughout pregnancy. Bisoprolol has 30% protein binding and a half-life of 9–12 hours, so it presents a moderately high risk for accumulation in infants, especially neonates. Only one study seems to exist where a mother delivered at 36 weeks' gestation following major cardiac abnormalities. From day nine she expressed daily for six days. Her milk was analysed for bisoprolol. It was undetectable (<1 mcg/L) in all samples but the baby remained exclusively artificially fed.

Bisoprolol in lactation (Brand name: Cardicor®, Emlor®)

Only one study of the use of bisoprolol appears in the literature. Khurana et al. (2014) studied a mother who was initiated on it six days after birth for a cardiac condition. She expressed samples of

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milk on day 11 and 18 after birth. Drug levels in milk were undetectable but the baby did not receive any breastmilk so data is incomplete.

Bisoprolol is almost completely absorbed from the GI tract and undergoes only minimal first-pass metabolism resulting in an oral bio-availability of approximately 90%. It is 30% plasma protein bound. It is a cardio-selective beta blocker. Its pharmacokinetic properties suggest that it may accumulate particularly in neonates and its use should be avoided unless essential. Other beta blockers demonstrate better safety data in lactation.

The BNF recommends that the amount of most beta blockers in breastmilk is probably too small to be harmful although it is advisable to monitor the infant for possible symptoms of beta-blockade.

Use labetalol, metoprolol or propranolol as alternative if possible, especially in neonates

References

- Baby Friendly Initiative, Hypoglycaemia Policy Guidelines, UNICEF UK.
- British Association of Perinatal Medicine, Identification and Management of Neonatal Hypoglycaemia in the Full-Term Infant – A Framework for Practice, April 2017, www.bapm.org/resources.
- Khurana R, Bin Jardan YA, Wilkie J, Brocks DR, Breast milk concentrations of amiodarone, desethylamiodarone, and bisoprolol following short-term drug exposure: two case reports, *J Clin Pharmacol*, 2014;54:828–31.

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