



Darbepoetin

Revised: December 3, 2018.

CASRN: 209810-58-2

Drug Levels and Effects

Summary of Use during Lactation

The excretion of darbepoetin alfa in breastmilk or its effects on breastfed infants have not been studied. However, erythropoietin is a normal component of human milk and darbepoetin is immunologically and biologically indistinguishable from native erythropoietin. Intravenous darbepoetin has been given safely to newborn infants in doses much larger than those expected to appear in breastmilk. No special precautions are required during breastfeeding.

Drug Levels

Maternal Levels. Relevant published information on exogenous administration of darbepoetin alfa to nursing mothers was not found as of the revision date. However, breastmilk normally contains erythropoietin.[1]

Infant Levels. Published information on absorption of darbepoetin alfa from breastmilk was not found as of the revision date. However, several studies in which oral doses of epoetin alfa and other recombinant forms of erythropoietin were given to preterm infants found that epoetin is absorbed to a small extent. Increases in hematocrit in infants treated with oral epoetin alfa have been small to negligible.[2][3][4][5][6][7] However, one study found that hospitalized preterm infants taking enteral feedings and given 400 units daily of recombinant human erythropoietin by mouth with ferrous sulfate had higher reticulocyte counts and serum erythropoietin concentrations upon hospital discharge than control infants given only ferrous sulfate.[8]

Effects in Breastfed Infants

Enhancement of gastrointestinal tract maturation has been proposed as a function of erythropoietin in breastmilk.[1][8]

Effects on Lactation and Breastmilk

In small studies, epoetin alfa administration decreased serum prolactin in patients with amyotrophic lateral sclerosis,[9] but had no effect in normal subjects or in patients with renal failure undergoing chronic ambulatory

peritoneal dialysis.[10][11] The prolactin level in a mother with established lactation may not affect her ability to breastfeed.

Alternate Drugs to Consider

Epoetin alfa

References

1. Semba RD, Juul SE. Erythropoietin in human milk: physiology and role in infant health. *J Hum Lact.* 2002;18:252-61. PubMed PMID: 12192960.
2. Pasha YZ, Ahmadpolir-Kacho M, Hajiahmadi M, Hosseini M. Enteral erythropoietin increases plasma erythropoietin level in preterm infants: a randomized controlled trial. *Indian Pediatr.* 2008;45:25-8. PubMed PMID: 18250501.
3. Calhoun DA, Christensen RD. Hematopoietic growth factors in neonatal medicine: the use of enterally administered hematopoietic growth factors in the neonatal intensive care unit. *Clin Perinatol.* 2004;31:169-82. PubMed PMID: 15183665.
4. Ballin A, Bilker-Reich A, Arbel E et al. Erythropoietin, given enterally, stimulates erythropoiesis in premature infants. *Lancet.* 1999;353:1849. Letter. PubMed PMID: 10359412.
5. Juul SE. Enterally doses recombinant human erythropoietin does not stimulate erythropoiesis in neonates. *J Pediatr.* 2003;143:321-6. PubMed PMID: 14517513.
6. Juul SE, Cristensen RD. Absorption of enteral recombinant human erythropoietin by neonates. *Ann Pharmacother.* 2003;37:782-6. PubMed PMID: 12773061.
7. Britton JR, Christensen RD. Enteral administration of recombinant erythropoietin to preterm infants. *J Perinatol.* 1995;15:281-3. PubMed PMID: 8558334.
8. Miller M, Iliff P, Stoltzfus RJ, Humphrey J. Breastmilk erythropoietin and mother-to-child HIV transmission through breastmilk. *Lancet.* 2002;360:1246-8. PubMed PMID: 12401271.
9. Tokgoz B, Utas C, Dogukan A et al. Influence of long term erythropoietin therapy on the hypothalamic-pituitary-thyroid axis in patients undergoing CAPD. *Ren Fail.* 2002;24:315-23. PubMed PMID: 12166698.
10. Bernini GP, Mariotti F, Brogi G et al. Effects of erythropoietin administration on prolactin secretion in normal subjects. *Nephron.* 1993;65:522-6. PubMed PMID: 8302403.
11. Markianos M, Kosmidis ML, Sfagos C. Reductions in plasma prolactin during acute erythropoietin administration. *Neuro Endocrinol Lett.* 2006;27:355-8. PubMed PMID: 16816832.

Substance Identification

Substance Name

Darbepoetin

CAS Registry Number

209810-58-2

Drug Class

Breast Feeding

Lactation

Colony-Stimulating Factors

Hematinics

Hematopoietic Cell Growth Factors