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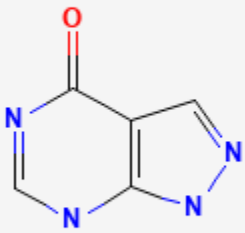
Allopurinol

Revised: March 21, 2022.

CASRN: 315-30-0



Drug Levels and Effects

Summary of Use during Lactation

Limited information indicates that a maternal dose of allopurinol of 300 mg daily provides near-therapeutic dose and plasma levels in an exclusively breastfed infant. The manufacturer recommends avoiding allopurinol during breastfeeding and for one week after the last dose. If allopurinol is required by the mother, it is not a reason to discontinue breastfeeding, but exclusively breastfed infants should be monitored if this drug is used, including observation for allergic reactions (such as rash) and periodic CBC and differential blood counts.

Drug Levels

Allopurinol is metabolized to oxypurinol which has xanthine oxidase inhibitory activity equal to allopurinol's. Oxypurinol is well absorbed from the gastrointestinal tract.

Maternal Levels. A woman who was 5 weeks postpartum had been taking allopurinol 300 mg orally for 4 weeks. Two hours after a dose her breastmilk contained 0.9 mg/L of allopurinol and 53.7 mg/L of its active metabolite oxypurinol. Four hours after the dose, her breastmilk contained 1.4 mg/L of allopurinol and 48 mg/L of oxypurinol. The authors calculated that the exclusively breastfed infant would receive between 0.14 and 0.2 mg/kg of allopurinol and between 7.2 to 8 mg/kg of oxypurinol daily. This dose of oxypurinol is slightly less than the infant allopurinol dose of 10 mg/kg daily.[1,2]

Infant Levels. A 5-week-old infant whose mother had been taking allopurinol 300 mg daily for 4 weeks had plasma levels of allopurinol that was undetectable (<0.5 mg/L) and of oxypurinol that was 6.6 mg/L 2 hours after nursing and 4 hours after the mother's dose of allopurinol. This plasma level was 33 to 48% of the measured maternal plasma oxypurinol levels.[1,2]

Effects in Breastfed Infants

One infant breastfed from age 1 week to age 7 weeks during maternal allopurinol therapy with 300 mg or allopurinol daily. The infant had no observable side effects and no changes in clinical chemistry and hematology values.[2]

A national survey of gastroenterologists in Australia identified 21 infants who were breastfed by mothers taking a combination of allopurinol and a thiopurine (e.g. azathioprine, mercaptopurine) to treat inflammatory bowel disease. All had taken the combination during pregnancy also. Two postpartum infant deaths occurred, both at 3 months of age. One was a twin (premature birth-related) and the other from SIDS. The authors did not believe the deaths were medication related.[3] No information was provided on the extent of breastfeeding, specific thiopurines, drug dosages or the outcomes of the other infants.

Effects on Lactation and Breastmilk

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

Alternate Drugs to Consider

Probenecid

References

1. Kamilli I, Gresser U, Schaefer C, et al. Allopurinol in breast milk. Adv Exp Med Biol. 1991;309A:143–5. PubMed PMID: 1789194.
2. Kamilli I, Gresser U. Allopurinol and oxypurinol in human breast milk. Clin Investig. 1993;71:161–4. PubMed PMID: 8461629.
3. Beswick L, Shukla D, Friedman AB, et al. National audit: Assessing the use and safety of allopurinol thiopurine co-therapy in pregnant females with inflammatory bowel disease. J Gastroenterol Hepatol 2016;31 (Suppl 2):128-9. Abstract. doi:10.1111/jgh.13521

Substance Identification

Substance Name

Allopurinol

CAS Registry Number

315-30-0

Drug Class

Breast Feeding

Lactation

Antigout Agents

Enzyme Inhibitors

Gout Suppressants