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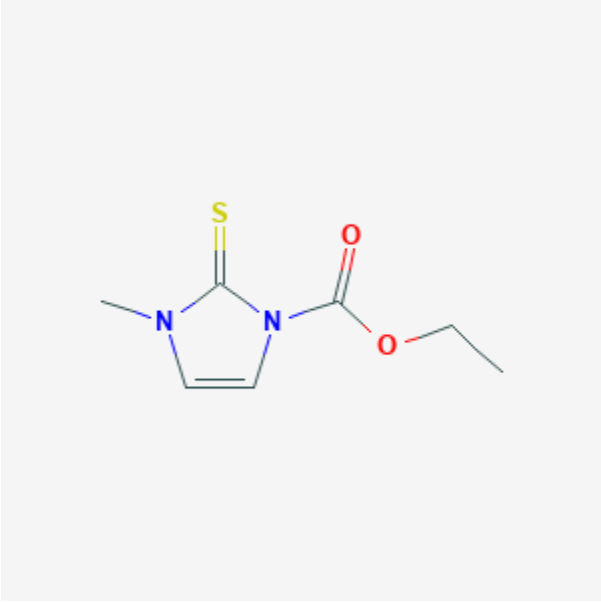
Carbimazole

Revised: December 3, 2018.

CASRN: 22232-54-8



Drug Levels and Effects

Summary of Use during Lactation

Carbimazole is not approved for marketing in the United States by the U.S. Food and Drug Administration, but is available in other countries. It is a prodrug for methimazole which has been studied extensively during breastfeeding; maternal methimazole therapy does not affect thyroid function or intellectual development in breastfed infants with doses up to 20 mg daily. Doses of carbimazole of 30 mg daily or 50 mg weekly have not adversely affected the few breastfed infants studied and no cases of thyroid function alteration has been reported among infants exposed to methimazole via breastmilk.

The American Thyroid Association recommends only monitoring infants for appropriate growth and development during routine pediatric health and wellness evaluations and routine assessment of serum thyroid function in the child is not recommended.[1] Rare idiosyncratic reactions (e.g., agranulocytosis) might occur,

and the infant should be watched for signs of infection. Monitoring of the infant's complete blood count and differential is advisable if there is a suspicion of a drug-induced blood dyscrasia.

Drug Levels

Carbimazole is a prodrug that is rapidly converted to the active drug methimazole. The methimazole dose is 61% of the carbimazole dose after conversion. *Maternal Levels.* A woman (time postpartum not stated) given a single dose of 10 mg of carbimazole excreted a total of 0.47% of the dose in her breastmilk in 24 hours.[2]

Five lactating women who were 2 to 6 weeks postpartum were given a single dose of carbimazole 40 mg orally, equivalent to 24.5 mg of methimazole. Methimazole milk concentrations were measured every hour for 8 hours. The average milk concentration was 182 mcg/L at 1 hour after the dose and decreased to 83 mcg/L at 8 hours after the dose. The average total amount of methimazole excreted into milk over 8 hours was 34 mcg (range 29 to 47 mcg).[3]

A mother with twins began taking carbimazole 30 mg daily 2 months postpartum. The dosage was lowered as she became euthyroid. Free methimazole was measured in breastmilk 10 times between weeks 2 and 16 of therapy. The mean milk methimazole concentration was 43 mcg/L (range 0 to 92 mcg/L), although the exact dosage the mother was taking during all of these measurements was not stated. The peak milk methimazole concentration occurred about 4 hours after the dose.[4]

Infant Levels. A mother with twins began taking carbimazole 30 mg daily 2 months postpartum. The dosage was lowered as she became euthyroid. The infants were breastfed (extent not stated) and plasma methimazole concentrations were measured between weeks 1 and 16 of therapy. Average serum levels were 45 mcg/L (range 0 to 105 mcg/L) and that in twin 2 was 52 mcg/L (range 0 to 156 mcg/L), with the highest values reported with a maternal dose of 30 mg daily.[4]

Effects in Breastfed Infants

Eleven mothers were taking oral carbimazole in dosages ranging from 5 to 20 mg daily during pregnancy and 5 to 15 mg daily during breastfeeding (extent not stated). None of the 12 infants, including one set of twins, had a serum thyroxine (T4) concentration below the lower limit of normal on day 4 of life. Thyrotropin (TSH) concentrations were normal in all infants when measured at various times over the first 21 days postpartum.[5]

A mother with twins began taking carbimazole 30 mg daily 2 months postpartum. The dosage was lowered as she became euthyroid. The infants were breastfed (extent not stated) and clinical and laboratory examinations were performed over the following 4 months. There was no evidence of alterations in thyroid function.[4]

A mother was taking carbimazole 50 mg once weekly during pregnancy and postpartum. Her infant was exclusively breastfed for the first 84 days of life and had clinical and laboratory examinations performed over the first 4 months of life. Although the infant's tone and deep tendon reflexes were slightly increased and she was easily irritable, serum thyroid hormone levels were normal as was her growth. No symptoms or signs of hypothyroidism were observed.[6]

Effects on Lactation and Breastmilk

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

Alternate Drugs to Consider

Methimazole, Propylthiouracil

References

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Substance Identification

Substance Name

Carbimazole

CAS Registry Number

22232-54-8

Drug Class

Breast Feeding

Lactation

Antithyroid Agents

Thionamides