



Coal Tar

Revised: February 15, 2024.

CASRN: 8007-45-2

Drug Levels and Effects

Summary of Use during Lactation

Coal tar applied topically to maternal skin can result in pyrene absorption by the infant, probably by skin-to-skin or skin-to-mouth contact with the mother. Because of the potential toxicity of coal tar to the breastfed infant, alternate drugs are preferred.[1,2] If a coal tar product is used, it would be prudent to treat the smallest area of skin possible. It is particularly important to ensure that the infant's skin does not come into direct contact with the areas of skin that have been treated.

Drug Levels

Maternal Levels. A woman was treated with topical coal tar-containing medications for the treatment of atopic dermatitis. They were applied to the entire body except for the breasts and face. Treatment was started when the infant was 3 months old and continued for 50 days. Breastmilk was analyzed before treatment and on 11 occasions during therapy. Pyrene and benzo[a]pyrene were undetectable (<0.0035 and 0.056 micromol/L, respectively). The pyrene metabolite, 1-hydroxypyrene, was detected in trace amounts in 3 of the 11 samples.[3]

Infant Levels. A woman was treated with topical coal tar-containing medications for the treatment of atopic dermatitis. They were applied to the entire body except for the breasts and face. Treatment was started when the infant was 3 months old and continued for 50 days. The mother breastfed her infant (extent not stated) and the infant's urine was collected before the start of treatment and 4 times during maternal therapy with coal tar. The pyrene metabolite, 1-hydroxypyrene, was detected in all of the infant's urine samples. The baseline (pretreatment) concentration was 1.63 micromol/mol of creatinine. Subsequent (during maternal treatment) urine concentrations were 9.96, 97.1, 8.67 and 11.3 micromol/mol of creatinine. Since the mother's breastmilk contained no detectable pyrene or benzo[a]pyrene and only low levels of 1-hydroxypyrene, the authors postulated that the infant obtained the pyrene via skin-to-skin or skin-to-mouth contact with the mother and metabolized it to 1-hydroxypyrene.[3]

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Effects in Breastfed Infants

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

Effects on Lactation and Breastmilk

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

Alternate Drugs to Consider

(Psoriasis) [Adalimumab](#), [Certolizumab Pegol](#), [Etanercept](#), [Infliximab](#), [Phototherapy](#), [Tretinoin](#)

References

1. Butler DC, Heller MM, Murase JE. Safety of dermatologic medications in pregnancy and lactation: Part II. Lactation. *J Am Acad Dermatol* 2014;70:417.e1-10. PubMed PMID: 24528912.
2. Yaghi M, McMullan P, Truong TM, et al. Safety of dermatologic medications in pregnancy and lactation: An Update - Part II: Lactation. *J Am Acad Dermatol* 2024. PubMed PMID: 38280680.
3. Scheepers PT, van Houtum JL, Anzion RB, et al. Uptake of pyrene in a breast-fed child of a mother treated with coal tar. *Pediatr Dermatol* 2009;26:184-7. PubMed PMID: 19419468.

Substance Identification

Substance Name

Coal Tar

CAS Registry Number

8007-45-2

Drug Class

Breast Feeding

Lactation

Milk, Human

Keratolytic Agents