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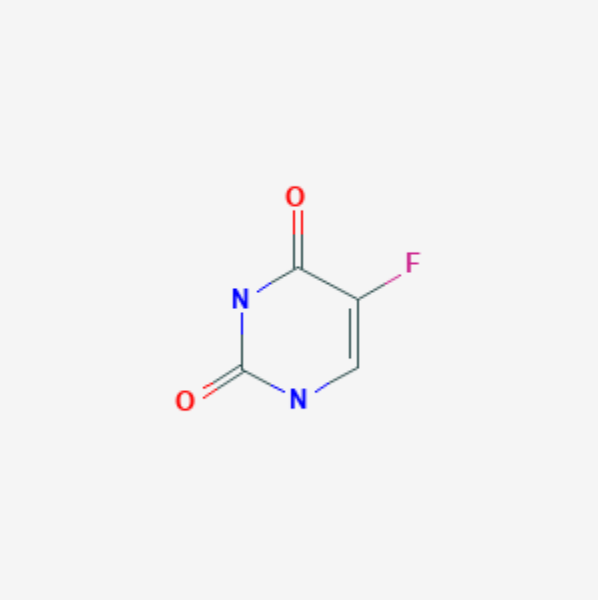
Fluorouracil

Revised: December 3, 2018.

CASRN: 51-21-8



Drug Levels and Effects

Summary of Use during Lactation

Most sources consider breastfeeding to be contraindicated during maternal antineoplastic drug therapy. It might be possible to breastfeed safely during intermittent therapy with an appropriate period of breastfeeding abstinence, but the duration of abstinence is not clear. Limited information indicates that a maternal continuous intravenous fluorouracil infusion at a dose of 200 mg/square meter daily produces undetectable levels in milk. If fluorouracil use is undertaken, monitoring of the infant's complete blood count and differential is advisable. Chemotherapy may adversely affect the normal microbiome and chemical makeup of breastmilk.[1] Women who receive chemotherapy during pregnancy are more likely to have difficulty nursing their infant.

Topical fluorouracil applied away from the breast should pose negligible risk for the breastfed infant; however, it is 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 mother who was 9 months postpartum was diagnosed with rectal cancer and began treatment with pelvic radiotherapy and a continuous intravenous infusion of fluorouracil 200 mg/square meter daily. Her plasma fluorouracil concentration was constant at about 110 micromoles/L (14.3 mg/L) from weeks 2 to 5 of therapy. She discontinued nursing her infant and pumped her breasts twice daily and collected 36 breastmilk samples before, during and for 10 days following fluorouracil therapy (exact times not specified). Fluorouracil was undetectable (<0.5 micromol/L [<65 mcg/L]) in all of the milk samples.[2]

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

Effects in Breastfed Infants

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

Effects on Lactation and Breastmilk

A telephone follow-up study was conducted on 74 women who received cancer chemotherapy at one center during the second or third trimester of pregnancy to determine if they were successful at breastfeeding postpartum. Only 34% of the women were able to exclusively breastfeed their infants, and 66% of the women reported experiencing breastfeeding difficulties. This was in comparison to a 91% breastfeeding success rate in 22 other mothers diagnosed during pregnancy, but not treated with chemotherapy. Other statistically significant correlations included: 1. mothers with breastfeeding difficulties had an average of 5.5 cycles of chemotherapy compared with 3.8 cycles among mothers who had no difficulties; and 2. mothers with breastfeeding difficulties received their first cycle of chemotherapy on average 3.4 weeks earlier in pregnancy. Of the 9 women who received a fluorouracil-containing regimen, 8 had breastfeeding difficulties.[3]

References

1. Urbaniak C, McMillan A, Angelini M et al. Effect of chemotherapy on the microbiota and metabolome of human milk, a case report. Microbiome. 2014;2:24. PubMed PMID: 25061513.
2. Peccatori FA, Giovannetti E, Pistilli B et al. "The only thing I know is that I know nothing": 5-fluorouracil in human milk. Ann Oncol. 2012;23:543-4. PubMed PMID: 22275286.
3. Stopenski S, Aslam A, Zhang X et al. After chemotherapy treatment for maternal cancer during pregnancy, is breastfeeding possible? Breastfeed Med. 2017;12:91-7. PubMed PMID: 28170295.

Substance Identification

Substance Name

Fluorouracil

CAS Registry Number

51-21-8

Drug Class

Breast Feeding

Lactation

Antimetabolites

Antineoplastic Agents

Antimetabolites, Antineoplastic

Immunosuppressive Agents