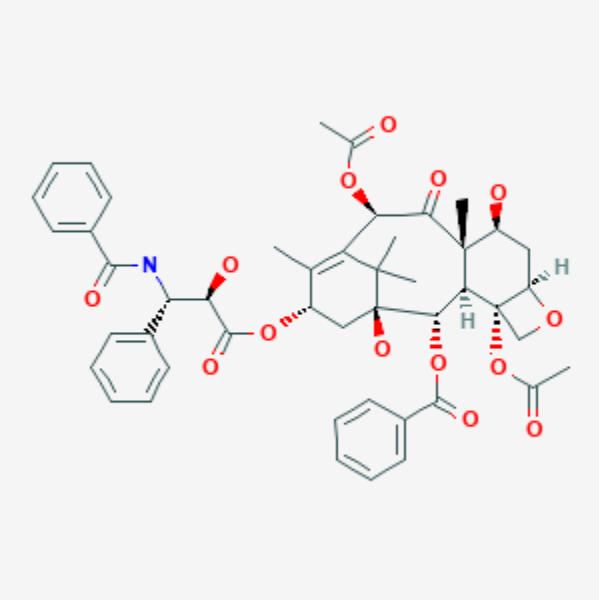
U.S. National Library of Medicine
National Center for Biotechnology Information

NLM Citation: Drugs and Lactation Database (LactMed) [Internet]. Bethesda (MD): National Library of Medicine (US); 2006-. Paclitaxel. [Updated 2020 Jan 20].
Bookshelf URL: https://www.ncbi.nlm.nih.gov/books/

Paclitaxel

Revised: January 20, 2020.

CASRN: 33069-62-4



Drug Levels and Effects

Summary of Use during Lactation

Most sources consider breastfeeding to be contraindicated during maternal antineoplastic drug therapy.[1] Based on limited data, paclitaxel appears to be excreted into milk in relatively large amounts. It might be possible to breastfeed safely during intermittent therapy with an appropriate period of breastfeeding abstinence, but the duration abstinence is not clear. The manufacturer recommends that breastfeeding be discontinued during paclitaxel therapy and for 2 weeks after the last dose

Chemotherapy may adversely affect the normal microbiome and chemical makeup of breastmilk.[2] Women who receive chemotherapy during pregnancy are more likely to have difficulty nursing their infant.

Drug Levels

Maternal Levels. A woman with a history of treatment for thyroid cancer and recurrence during pregnancy was treated postpartum with paclitaxel and carboplatin. Her intravenous paclitaxel dose was 56.1 mg (30 mg per square meter) weekly for 6 weeks. Whole milk samples were obtained at 4, 28, 172, and 316 hours after the sixth dose. The highest milk paclitaxel level was 1.17 mg/L in the 28-hour sample and paclitaxel was undetectable (<80 mcg/L) in the 316 hour sample. Metabolites were not measured. The authors calculated an average milk paclitaxel level over the 316 hour collection period of 0.78 mg/L, resulting in an estimated total weight-adjusted infant daily dose of 16.7% of the maternal weekly dose.[3] Note that the above estimate of the infant daily dose is expressed as percentage of the maternal weekly dose, and that authors used a level of zero as the trough milk level, rather than a milk level taken before the sixth dose (which would equal approximately the 172-hour level of 0.97 mg/L), resulting in an underestimate of the AUC and infant dose.

A 17-week pregnant woman with breast cancer received a regimen of fluorouracil, epirubicin and cyclophosphamide, followed by 9 weekly doses of paclitaxel 80 mg/sq. m. Her infant was delivered after the 6th dose of paclitaxel. She pumped milk and discarded it until after the 9th dose of paclitaxel when maternal blood and milk samples were colleted. Paclitaxel concentration in milk was 111.4 mcg/L at 11 hours after the dose. Milk concentration decrease to 6.8 mcg/L at 27 hours after the dose. Milk paclitaxel levels were undetectable (<2.5 mcg/L) at 71.25 hours after the dose, and thereafter until 360 hours after the dose.[4]

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 taxane-containing regimen, 7 had breastfeeding difficulties.[5]

References

1. Pistilli B, Bellettini G, Giovannetti E, et al. Chemotherapy, targeted agents, antiemetics and growth-factors in human milk: How should we counsel cancer patients about breastfeeding? Cancer Treat Rev. 2013;39:207–11. PubMed PMID: 23199900.
2. 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.
3. Griffin S, Milla M, Baker T, et al. Transfer of carboplatin and paclitaxel into breast milk. J Hum Lact. 2012;28:457–9. PubMed PMID: 23087196.
4. Jackson C, Morris T, Hung N, et al. Breast milk paclitaxel excretion following intravenous chemotherapy-a case report. Br J Cancer. 2019;121:421–4. PubMed PMID: 31363168.
5. 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

Paclitaxel

CAS Registry Number

33069-62-4

Drug Class

Breast Feeding

Lactation

Antineoplastic Agents