Can mothers breastfeed after a medical termination of pregnancy?

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Summary

- There will be occasions when women who are breastfeeding request an abortion.
- Mifepristone and misoprostol are recommended for medical termination of pregnancy, however as they are usually only given as one-off doses, any risk of accumulation in the infant from exposure via the breast milk, is limited.
- There are no data on the direct effect of mifepristone or misoprostol on the lactation process or on a breastfed infant.
- Limited data suggest that the levels of mifepristone in milk are low, especially when using the 200 mg dose and that breastfeeding can be safely continued in an uninterrupted manner during medical abortion.
- Oral misoprostol is excreted into human breast milk in small amounts which are rapidly eliminated. No interruption of breastfeeding is necessary when misoprostol is given by any route.
- As a precaution, infants exposed to mifepristone or misoprostol via breastmilk should be monitored for nausea, vomiting and poor feeding.

Background

NICE guidance for medical termination of pregnancy recommends oral mifepristone, followed by the prostaglandin E1 analogue, misoprostol (1). Misoprostol may be given via a variety of routes (orally, intravaginally, bucally or sublingually).

There will be occasions when women who are breastfeeding request an abortion and require advice as to whether they can continue to breastfeed after a medical termination of pregnancy.

Answer

Mifepristone

Based on its lipophilic properties, low molecular weight, and protein binding of 98%, only small amounts of mifepristone would be expected to pass into breast milk (2, 3, 4). This is supported by the single published study of mifepristone use with breastfeeding, in which milk samples were collected from 12 women who had undergone a medical abortion during the first 7 days after intake of either 200 mg (n=2) or 600 mg (n=10) of mifepristone (4). Milk levels of mifepristone were highest in the samples collected during the first 6 hours following drug intake, and ranged from 0.063 micromol/L to 0.913 micromol/L. Thereafter, mifepristone levels declined for up to 7 days. The lowest levels of mifepristone in milk were measured following ingestion of the 200 mg dose. The authors concluded that the levels of mifepristone in milk are low, especially when using the 200 mg dose, and that breastfeeding can be safely continued in an uninterrupted manner during medical abortion of this kind (4).

The elimination of mifepristone is biphasic with an initial half-life of between 12 and 72 hours, and a terminal half-life (including all active metabolites) of up to 90 hours (2, 3). Despite this, as mifepristone is only taken as a one-off dose, and low levels of drug are anticipated in the milk, no interruption in breast feeding is needed.

Misoprostol

Misoprostol is a synthetic prostaglandin E1 analogue (5). Naturally occurring prostaglandin E1, and other naturally occurring prostaglandins, are present naturally in colostrum and milk (6, 7). Misoprostol is rapidly and almost completely absorbed after oral administration, although it undergoes extensive first pass metabolism to its active metabolite, misoprostol acid (MPA). Absorption after vaginal administration is slower and more variable, but the total systemic exposure is higher than after oral administration. Sublingual administration is reported to have the greatest bioavailability when compared to other routes (8). After buccal administration, the area-under-the-curve is just half that of vaginal administration (8).

There are only two published studies of oral misoprostol secretion into breast milk, which both show that drug levels are undetectable after 5 hours. In the first, 20 women were given 600 micrograms misoprostol orally either immediately or within 2 to 4 days after delivery. Maternal plasma levels were measured in all 20 women, but milk colostrum levels were measured in only 12 due to inadequate colostrum supply immediately after the birth. Mean MPA colostrum levels peaked one hour after administration at 20.9 picograms/mL and gradually declined to less than 1 picogram/mL after 5 hours (detection limit). These levels were significantly below maternal plasma levels (mean at 2 minutes of 91.5 picogram/mL, peak at 20 minutes of 344.6 picogram/mL, falling to 27.8 picogram/mL at 120 minutes) (9). This study measured misoprostol in colostrum, so the levels of MPA in more lipid-rich mature milk may not be the same.

In the second study of 10 lactating mothers given 200 micrograms misoprostol orally for uterine atony, mean MPA milk levels of 7.6 picograms/mL were seen at 1.1 hours. Levels rapidly declined to a median of 0.2 picograms/mL at 5 hours. The milk half-life was calculated as 1.1 hours. The infants were not reported to be breastfed during this study, and the effect, if any, of the small amounts of MPA on a breastfed infant is therefore unknown (10).

There is no information regarding the pharmacokinetics of misoprostol in breast milk for non-oral routes of administration (8).

Due to the low levels of oral misoprostol found in breast milk, no interruption of breastfeeding is necessary (6). There is no information regarding the level of misoprostol after other routes of administration, but based on pharmacokinetics, the levels in milk are also likely to be low and no interruption in breastfeeding is required.

Limitations

- The above recommendations are based on pharmacokinetic observations only, and not supported by clinical evidence. Any effect on a breastfed infant is unknown.
- Where a surgical method is being offered, the effects of local or general anaesthetics must be considered when advising on the safety of breastfeeding. This is beyond the scope of this Q&A.
- The above information applies to women taking no additional medications and a full-term, fit and healthy infant only. Should the infant be premature, unwell, or the mother taking other medication, an individual risk assessment is required. Please contact the UK Drugs in Lactation Advisory Service for advice on 0116 258 6491 **/** 0121 424 7298 or ukdilas.enquiries@nhs.net

References

1. National Institute for Health and Care Excellence (2019) *Abortion care* (NICE Guideline 140). [Accessed 13 October 2020]. Available at www.nice.org.uk/guidance/ng140
2. Summary of Product Characteristics. Mifegyne®. Exelgyn. Text last revised 18 April 2019. Available at http://www.medicines.org.uk/emc/. Accessed on 06/10/20
3. Brayfield A (ed), Martindale: The Complete Drug Reference. [online] London: Pharmaceutical Press. Available at http://www.medicinescomplete.com/ . Accessed on 06/10/20
4. Saav I, Fiala C, Hämäläinen JM et al. Medical abortion in lactating women—low levels of mifepristone in breast milk. Acta Obstet Gynecol Scand 2010; 89: 618–622
5. Summary of Product Characteristics. Topogyne®. Exelgyn. Text last revised 19 June 2019. Available at http://www.medicines.org.uk/emc/. Accessed on 13/10/2020
6. Drugs and lactation Database (Lactmed). LactMed. Toxnet Toxicology Data network. Available from https://toxnet.nlm.nih.gov/newtoxnet/lactmed.htm Accessed 13/10/2020
7. Shimizu T, Yamashiro Y, Yabuta K. Prostaglandin E1, E2, and F2 alpha in human milk and plasma. Biol Neonate 1992;61:222–225
8. Tang OS, Gemzell-Danielsson K, Ho PC. Misoprostol: pharmacokinetic profiles, effects on the uterus and side-effects. Int J Gynaecol Obstet 2007;99:5160–5167
9. Abdel-Aleem H, Villar J, Gulmezoglu AM et al. The pharmacokinetics of the prostaglandin E1 analogue misoprostol in plasma and colostrum after postpartum oral administration. Eur J Obstet Gynecol Reprod Biol 2003;108:25–28
10. Vogel D, Burkhardt T, Rentsch K et al. Misoprostol versus methylergometrine: Pharmacokinetics in human milk. Am J Obstet Gynecol 2004;191:2168–2173

Quality Assurance

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Search strategy

1. Embase and Medline (UKDILAS standard search pattern)
2. UKDILAS In-house database/ resources
3. Manufacturers for mifepristone and misoprostol

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