

Breastfeeding and radiologic procedures

Jack Newman MD FRCPC

April 2007

ABSTRACT

QUESTION

Recently, some of my patients were instructed not to breastfeed for 24 to 48 hours after magnetic resonance imaging scans. Is this based on scientific evidence?

ANSWER

No. On the contrary, evidence indicates unequivocally that the contrast media used for both magnetic resonance imaging and computed tomography scans are excreted into breast milk in such small quantities that there is no concern at all for nursing babies.

The contrast medium used for magnetic resonance imaging (MRI) scans is gadopentetate. It is excreted into breast milk in extremely small amounts. Less than 0.04% of the dose administered to a mother will appear in her milk.¹ Also, of that tiny amount excreted into the milk, only 0.8% is actually absorbed by the baby.² Considering that we do MRI scans of small babies, concern about continuing breastfeeding after MRI makes no sense at all.

In the case of computed tomography (CT) scans, the contrast medium is an iodinated compound. Although iodine itself does enter into the milk, the iodine of contrast material is bonded to a carrier molecule, and the compound does not enter the milk in any noticeable amount.^{3,4} As with gadopentetate, the amount absorbed from the gut and transferred to the baby is virtually none for most compounds, and actually none for some others.

Contrast media used in other radiologic procedures, such as intravenous pyelogram lymphangiograms, are iodinated compounds similar to the ones used for CT scans. None of these compounds (or gadopentetate) is radioactive, so there is no concern from that point of view.

Finally, the real question is, which is more hazardous for the baby, breast milk containing minuscule amounts of contrast media, most of which are not absorbed, or formula, even for only 24 hours? We can say unequivocally that, given the risk of interrupting breastfeeding, mothers should be reassured that they will be doing the best for their babies by not interrupting breastfeeding for even 1 second after MRI, CT, or most other radiologic procedures.

Risks associated with interrupting breastfeeding include the following.

- Foreign proteins will be introduced at an unnecessarily young age if the baby is younger than 6 months.
- Formula is very different from mother's milk, which is the physiologically normal food for babies and young children.
- Breastfeeding difficulties can arise if babies are fed by bottle, even for only 24 hours. Not infrequently, babies completely refuse the breast afterward.
- For babies older than 6 or 7 months, mothers might have to deal with inconsolably crying babies who want the breast. What can we suggest to mothers of ravenous babies who refuse to take bottles or drink from cups? Older babies care not only for the milk, but also for the breast, something not widely considered when we ask mothers to interrupt breastfeeding. From many points of view, but especially for babies, there is much more to breastfeeding than breast milk.

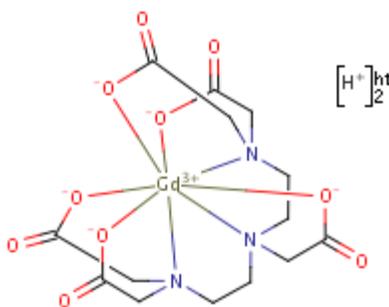
In 2001, the American College of Radiology's Committee on Drugs and Contrast Media finally got in line with the evidence and stated the obvious: "We believe, therefore, that the available data suggest that it is safe for the mother and infant to continue breastfeeding after receiving such an agent."⁵ Unfortunately, the committee added—without scientific evidence—the following sentence: "If the mother so desires, she may abstain from breastfeeding for 24 hours with active expression and discarding of breast milk from both breasts during that period." Whatever happened to common sense and physicians' role in counseling? Why would mothers so desire if they were given the straight goods on how little contrast medium gets into the milk and told that they should not interrupt breastfeeding if they wish to do the best for their babies?

References

1. Kubik-Huch RA, Gottstein-Aalame NM, Frenzel T, Seifert B, Puchert E, Wittek S, et al. Gadopentetate dimeglumine excretion into human breast milk during lactation. *Radiology* 2000;216(2):555-8.
 2. Rofsky NM, Weinreb JC, Litt AW. Quantitative analysis of gadopentetate dimeglumine excreted in breast milk. *J Magn Reson Imaging* 1993;3(1):131-2.
 3. Nielsen ST, Matheson I, Rasmussen JN, Skinnemoen K, Andrew E, Hafsahl G. Excretion of iohexol and metrizoate in human breast milk. *Acta Radiol* 1987;28(5):523-6.
 4. Ilett KF, Hackett LP, Paterson JW, McCormick CC. Excretion of metrizamide in milk. *Br J Radiol* 1981;54(642):537-8.
 5. American College of Radiology, Committee on Drugs and Contrast Media. Administration of contrast medium to breastfeeding mothers. *ACR Bull* 2001;57(10):12-3.
-

Gadopentetate

CASRN: 80529-93-7



Summary of Use during Lactation:

Although early investigators recommended withholding breastfeeding following administration of gadopentetate, a more recent and much larger study indicated that the amounts of gadolinium excreted into breastmilk are less than 1% of the amount allowed to be given to infants. In addition, because gadopentetate is poorly absorbed orally, it is not likely to reach the bloodstream of the infant or cause any adverse effects in breastfed infants. Guidelines developed by several professional organizations state that breastfeeding need not be disrupted after a nursing mother receives a gadolinium-containing contrast medium.[1][2][3]