

DRUG INFORMATION

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SAFETY OF MAGNESIUM SULPHATE (IV) IN BREASTFEEDING

Question:

What is the safety of intravenous magnesium sulphate in breastfeeding?

Answer:

There is little information that describes the passage of magnesium into breast milk following parenteral administration in pre-eclamptic women^[1-4].

Variability in maternal dietary intake and magnesium supplementation does not appear to correlate with secretion into milk^[1]. A study investigating the effects of maternal use of magnesium based laxatives did not demonstrate any change in the nature or frequency of stools in 50 breastfed infants^[2]. However, parenteral administration of magnesium sulphate in ten pre-eclamptic women immediately post-partum, was reported to be associated with an increase in colostrum magnesium concentrations (see below)^[5].

Cruikshank *et al.*,^[5] investigated the magnesium and calcium content of colostrum/breast milk expressed from ten women who were treated with intravenous magnesium sulphate for pre-eclampsia. These women were treated with a 4g loading dose of magnesium sulphate followed by a dose of 1g per hour for 24 hours after the birth.

Breast milk samples were taken at the time of stopping the infusion (at 24 hours) and at 48 and 72 hours post-delivery. Magnesium concentrations from these women were compared with milk samples taken from five women who were breastfeeding but were not treated with parenteral magnesium sulphate. Control samples were taken at 24, 48 and 72 hours post-delivery. In this study, the concentrations of magnesium in the breast milk of treated women were found to be significantly higher than in non-treated women at 24 hours post-partum (6.40+/-0.42mg/dL compared with 4.77+/-0.45mg/dL; p<0.05). At 48 and 72 hours post-partum, magnesium concentrations in milk were not statistically different between the groups.

These results suggest that breastfeeding starting 24 hours after the end of the infusion should not be problematical. It should be noted that the variability between women treated with magnesium sulphate and those who were not might be confounded by the nature of the milk sample. In the treated women, the milk sample was taken from women who were not breastfeeding and the milk sample was 'fore milk' (from unemptied breasts). The control samples were breastfeeding their infants and the milk samples were taken at the end of a breastfeeding session ie 'hind milk'^[5]. The difference in milk sampling may account for some of the difference in magnesium concentrations^[1]. There was not a statistically significant difference in milk calcium concentrations between the treated and untreated groups^[5].

Milk formulae based on cow's milk are reported to have a much higher magnesium concentration than human milk^[1]. Higher magnesium exposure using cow's milk formula does not appear to have been associated with toxicity or adverse effects in the infant^[1].

The American Academy of Paediatrics considers magnesium sulphate to be compatible with breastfeeding^[2].

Signs of excessive magnesium in the infant may include diarrhoea, central nervous system depression, respiratory depression, flushing and hypocalcaemia^[6-7].

Conclusions:

From the limited data available, it appears that the passage of magnesium into colostrum/mature breast milk following intravenous magnesium sulphate administration immediately post-partum does not appear to be overly problematical. However, as with the use of any drug in breastfeeding, its use should be considered in terms of risks and benefits. The risk of increased magnesium exposure via breast milk will be increased in premature infants who will have reduced ability to eliminate drugs. All infants who may be exposed to increased magnesium ingestion should be monitored for signs of toxicity.

References:

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