Magnesium maintenance therapy for preventing preterm birth after threatened preterm labour

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RHL summary

Findings of the review: Maintenance treatment with magnesium is one of the tocolytic therapies for preventing further contractions after an episode of threatened preterm labour. Four randomized controlled trials (422 women) undertaken in North America were analysed. Three trials had compared oral magnesium with: (i) oral ritodrine or no treatment; (ii) oral terbutaline sulphate; and (iii) oral placebo. One trial had compared gradual reduction in intravenous magnesium sulphate with no treatment. Only one trial had a low risk of bias, while in the other three the risk of bias was unclear. There was no difference in preterm birth, maternal re-admission for threatened preterm birth, gestational age at birth, respiratory distress syndrome, periventricular haemorrhage, admission to neonatal intensive care unit, neonatal length of hospital stay, in magnesium versus no-magnesium groups. Women in the magnesium group were more likely to develop diarrhoea. No data on long-term infants outcomes were reported.

Implementation: At the present time there is no evidence to recommend maintenance magnesium treatment after threatened preterm birth to prevent preterm birth.

Cochrane review

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Abstract

Magnesium maintenance therapy is one of the types of tocolytic therapy used after an episode of threatened preterm labour (usually treated with an initial dose of tocolytic therapy) in an attempt to prevent the onset of further preterm contractions.

To assess whether magnesium maintenance therapy is effective in preventing preterm birth after the initial threatened preterm labour is arrested.
We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (31 January 2013).

Randomised controlled trials of magnesium therapy given to women after threatened preterm labour.

The review authors independently assessed the studies for inclusion, assessed risk of bias and carried out data extraction. We checked data entry.

We included four trials involving 422 women. Three trials had high risk of bias and none included any long-term follow-up of infants. No differences in the incidence of preterm birth or perinatal mortality were seen when magnesium maintenance therapy was compared with placebo or no treatment; or alternative therapies (ritodrine or terbutaline). The risk ratio (RR) for preterm birth (less than 37 weeks) for magnesium compared with placebo or no treatment was 1.05, 95% confidence interval (CI) 0.80 to 1.40 (two trials, 99 women); and 0.99, 95% CI 0.57 to 1.72 (two trials, 100 women) for magnesium compared with alternative therapies. The RR for perinatal mortality for magnesium compared with placebo or no treatment was 5.00, 95% CI 0.25 to 99.16 (one trial, 50 infants); and 5.00, 95% CI 0.25 to 99.16 (one trial, 50 infants) for magnesium compared with alternative treatments.

Women taking magnesium preparations were less likely to report side effects (RR 0.67, 95% CI 0.47 to 0.96, three trials, 237 women), including palpitations or tachycardia (RR 0.26, 95% CI 0.13 to 0.52, three trials, 237 women) than women receiving alternative therapies. Women receiving magnesium were however, more likely to experience diarrhoea (RR 6.79, 95% CI 1.26 to 36.72, three trials, 237 women).

There is not enough evidence to show any difference between magnesium maintenance therapy compared with either placebo or no treatment, or alternative therapies (ritodrine or terbutaline) in preventing preterm birth after an episode of threatened preterm labour.

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