Oral misoprostol for induction of labour

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RHL summary

Key Findings

This review compared oral misoprostol to other induction agents, including: IV oxytocin, vaginal dinoprostone, sublingual misoprostol, intracervical prostaglandins and placebo/no treatment. The key findings were:

- Women prescribed oral misoprostol had higher rates of birth within 24 hours compared to placebo/no treatment with no change in perinatal outcome.
- Compared to no treatment, oral misoprostol was associated with lower rates of oxytocin administration and neonatal ICU admission.
- Oral misoprostol was associated with lower rates of cesarean section compared to IV oxytocin, vaginal dinoprostone and placebo/no treatment.
- Oral misoprostol was associated with higher rates of uterine hyperstimulation compared to intracervical prostaglandins.
- Oral misoprostol was associated with higher rates of meconium staining of the liquor compared to oxytocin.
- Oral misoprostol had no significant difference to sublingual misoprostol, however, compared to vaginal misoprostol the results were dose dependent. As the dose of oral misoprostol increased so did the rate of uterine hyperstimulation.

Evidence included in this review

76 trials of 14,412 women were included within the review. The most common comparison was against vaginal misoprostol (37 trials). Other trials compared oral misoprostol against vaginal dinoprostone, intracervical prostaglandin and IV oxytocin.

Quality assessment

There was substantial heterogeneity between trials, however, due to the large number of included trials outcomes were able to be analyzed. Most trials had a low risk or unclear risk of bias.

Clinical implications

Despite concerns regarding uterine hyperstimulation, oral misoprostol appears to have comparable efficacy to oxytocin. The findings appear to support low doses (20-25mcg in solution) of misoprostol for induction of labour. A woman’s clinical history and presentation must be carefully considered prior to its use.
Further research

Further RCTs could be designed to explore low doses of misoprostol ranging from 20-50 mcg. Furthermore, qualitative studies could help clarify the value women place on having a shorter labour opposed to the risks associated with such a labour.

Cochrane review


Abstract

Misoprostol is an orally active prostaglandin. In most countries misoprostol is not licensed for labour induction, but its use is common because it is cheap and heat stable.

To assess the use of oral misoprostol for labour induction in women with a viable fetus.

We searched the Cochrane Pregnancy and Childbirth Group's Trials Register (17 January 2014).

Randomised trials comparing oral misoprostol versus placebo or other methods, given to women with a viable fetus for labour induction.

Two review authors independently assessed trial data, using centrally-designed data sheets.

Overall there were 76 trials (14,412 women) which were of mixed quality.

In 12 trials comparing oral misoprostol with vaginal dinoprostone (3859 women), women given oral misoprostol were less likely to need a caesarean section (RR 0.88, 95% CI 0.78 to 0.99; 11 trials; 3592 women). There was some evidence that they had slower inductions, but there were no other statistically significant differences.

Nine trials (1282 women) compared oral misoprostol with intravenous oxytocin. The caesarean section rate was significantly lower in women who received oral misoprostol (RR 0.77, 95% CI 0.60 to 0.98; nine trials; 1282 women), but they had increased rates of meconium-stained liquor (RR 1.65, 95% CI 1.04 to 2.60; seven trials; 1172 women).

Thirty-seven trials (6417 women) compared oral and vaginal misoprostol and found no statistically significant difference in the primary outcomes of serious neonatal morbidity/death or serious maternal morbidity or death. The results for vaginal birth not achieved in 24 hours, uterine hyperstimulation with fetal heart rate (FHR) changes, and caesarean section were highly heterogenous - for uterine hyperstimulation with FHR changes this was related to dosage with lower rates in those with lower doses of oral misoprostol. However, there were fewer babies born with a low Apgar score in the oral group (RR 0.60, 95% CI 0.44 to 0.82; 19 trials; 4009 babies) and a decrease in postpartum haemorrhage (RR 0.57, 95% CI 0.34 to 0.95; 10
trials; 1478 women). However, the oral misoprostol group had an increase in meconium-stained liquor (RR 1.22, 95% CI 1.03 to 1.44; 24 trials; 3634 women).

Oral misoprostol as an induction agent is effective at achieving vaginal birth. It is more effective than placebo, as effective as vaginal misoprostol and results in fewer caesarean sections than vaginal dinoprostone or oxytocin.

Where misoprostol remains unlicensed for the induction of labour, many practitioners will prefer to use a licensed product like dinoprostone. If using oral misoprostol, the evidence suggests that the dose should be 20 to 25 mcg in solution. Given that safety is the primary concern, the evidence supports the use of oral regimens over vaginal regimens. This is especially important in situations where the risk of ascending infection is high and the lack of staff means that women cannot be intensely monitored.