Uterine rupture in second-trimester misoprostol-induced abortion after cesarean delivery: a systematic review

Goyal V

CRD summary
This review concluded that the risk of uterine rupture was similar in women with and without a prior caesarean delivery who used misoprostol (prostaglandin analogue) for second-trimester abortion. The authors’ conclusions appeared to reflect the limited evidence available but, given the limitations with the review process and the uncertain quality of the included studies, they should be interpreted with caution.

Authors’ objectives
To assess the risk of uterine rupture in women with a prior caesarean delivery who use misoprostol for second-trimester abortion.

Searching
MEDLINE, EMBASE, CINAHL, LILACS and the Cochrane Library were searched up to 2008 for articles in English. Search terms were reported.

Study selection
Studies that assessed the use of misoprostol for second-trimester abortion in women with prior caesarean delivery were eligible for inclusion. Eligible studies had to report the frequency of uterine rupture (as defined in the review) in women with and without previous caesarean delivery. Case reports, narrative reviews, and commentaries were excluded.

The included studies were carried out in 11 different countries. Included women had a history of at least one caesarean delivery or no previous caesarean delivery (including women with previous vaginal delivery and women who had not given birth). Where reported, women were between 10 and 28 weeks gestation. Misoprostol regimens varied, with most studies administering a dose between 200 and 400 micrograms, either orally, vaginally or sublingually. Some studies used additional techniques/treatments to induce abortion or evacuate incomplete abortion.

One reviewer screened relevant articles for inclusion.

Assessment of study quality
The author did not state that they assessed validity.

Data extraction
One reviewer extracted data on the number of uterine ruptures to calculate the risk of rupture, the 95% confidence intervals (CIs), and the number needed to harm.

Methods of synthesis
Estimates of risk and the 95% confidence intervals were pooled, but the methods were not reported. Further analyses appear to have been undertaken to assess the effects of using misoprostol alone or with another method for labour induction.

Results of the review
Sixteen observation studies were included in the review (n=3,556 women; 722 women with prior caesarean delivery, 2,834 without this history).

There was no statistically significant risk of uterine rupture in women with prior caesarean delivery (risk 0.28%, 95% CI 0.08 to 1.00) or women without prior caesarean delivery (risk 0.04%, 95% CI 0.01 to 0.20). The number needed to harm one women with a prior history of caesarean delivery would be 414 women treated with misoprostol.
The risk of uterine rupture was not statistically significant among women with or without prior history of caesarean delivery, using misoprostol alone, or with another method for labour induction (findings reported in the review).

**Authors' conclusions**
The risk of uterine rupture was similar in women with and without prior caesarean delivery undergoing second-trimester abortion with misoprostol. This risk may be acceptable to both patients and providers.

**CRD commentary**
The review question was clear and was supported by appropriate inclusion criteria for participants, intervention and outcome, with broad criteria for study design. Five databases were searched, but the search was restricted to articles in English, which meant that language bias may have been introduced. There were no apparent attempts to search for unpublished data, so potentially relevant articles may have been missed. Study selection and data extraction were not performed in duplicate, so reviewer error and bias could not be ruled out.

Validity assessment was not undertaken, so the quality of the included studies was unknown. The methods used to pool the data were not reported and it was unclear whether the pooling of the studies was appropriate given the differences in study methods and the lack of data on patient characteristics. In addition, statistical heterogeneity did not appear to have been assessed. The author acknowledged that there were a limited number of women at risk and, given the even smaller number of uterine ruptures experienced, a precise estimate was not possible.

The authors' conclusions appeared to reflect the evidence but, given the limitations with the review process, the uncertain quality of the included studies and the general lack of detail reported in the review, the authors' conclusions should be interpreted with caution.

**Implications of the review for practice and research**
The author did not state any implications for practice or research.

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