

Surgical or medical abortion of pregnancies between 13⁺⁰ and 23⁺⁶ weeks' gestation? A systematic review and new NICE national guidelines

Mia Schmidt-Hansen ¹, Patricia A Lohr ², Sharon Cameron,³ Elise Hasler¹

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¹National Guideline Alliance, Royal College of Obstetricians and Gynaecologists, London, UK

²British Pregnancy Advisory Service (BPAS), Stratford upon Avon, UK

³Sexual and Reproductive Health Services, NHS Lothian, Edinburgh, UK

Correspondence to

Dr Mia Schmidt-Hansen, National Guideline Alliance, Royal College of Obstetricians and Gynaecologists, 10-18 Union Street, London SE1 1SZ, UK; MSchmidt-Hansen@rcog.org.uk

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ABSTRACT

Background Abortion in the second trimester may be performed surgically or medically.

The objective of this systematic review was to examine the effectiveness, safety and acceptability/satisfaction of surgical compared with medical abortion of pregnancy between 13⁺⁰ and 23⁺⁶ weeks' gestation for a new national guideline.

Methods We searched Embase, Medline and the Cochrane Library on 4 March 2019. We included randomised controlled trials (RCTs; any size) and non-randomised comparative studies with n≥100 in each arm, published in English from 1985. Risk-of-bias was assessed using the Cochrane Collaboration checklist for RCTs. Meta-analysis of risk ratios (RRs)

used the Mantel-Haenszel method. The quality of the evidence was assessed using GRADE.

Results Two RCTs (n=140) were included.

'Incomplete abortion requiring surgical intervention' was clinically significantly higher with medical than surgical methods (RR=4.58, 95% CI 1.07 to 19.64). 'Abortion completed by the intended method' was statistically, but not clinically, significantly lower after medical than surgical methods, but was marked by high between-study heterogeneity (RR=0.88, 95% CI 0.79 to 0.98). To the extent that 'haemorrhage requiring transfusion/≥500 mL blood loss', 'uterine injury', 'cervical injury requiring repair' and 'infection reported within 1 month of abortion' were reported, they did not differ significantly between methods. Depending on measurement method, 'patient satisfaction/acceptability' was either clinically significantly higher or comparable after surgical than medical methods. The quality of this evidence was limited by low event rates and attrition bias.

Key messages

- Abortion in the second trimester may be performed safely and effectively surgically using dilatation and evacuation or medically using mifepristone and misoprostol.
- This systematic review examined the safety and effectiveness of surgical and medical abortion of pregnancy between 13⁺⁰ and 23⁺⁶ weeks' gestation.
- Based on this evidence and consensus, women should be offered the choice of medical or surgical methods of abortion between 13⁺⁰ and 23⁺⁶ weeks' gestation.

Conclusion Based on this evidence and consensus, women should be offered the choice of medical or surgical methods of abortion between 13⁺⁰ and 23⁺⁶ weeks' gestation, unless not clinically appropriate.

INTRODUCTION

In the second trimester abortion may be performed surgically or by the administration of medications. Some women prefer surgical abortion because it is predictable and quick, and can be performed with a general anaesthetic or sedation. Others prefer medical abortion because it does not involve surgical instrumentation or anaesthesia.¹⁻³

The recommended medical regimen in the second trimester is mifepristone followed 36-48 hours later by admission and repeated doses of the prostaglandin-analogue misoprostol.^{4 5} The median

induction-to-abortion interval is 6–8 hours, with nulliparity, higher gestational age, and increasing maternal age associated with longer durations between the initiation of misoprostol and expulsion.⁶ The recommended method of surgical abortion in the second trimester is dilatation and evacuation (D&E).^{6,7} A D&E is characterised by preparation of the cervix using medications such as misoprostol or mifepristone or by insertion of absorptive natural or synthetic cervical tents (osmotic dilators) 3–24 hours preoperatively⁶ followed by removal of the fetus and placenta using specialised forceps. A D&E is an outpatient surgical procedure, may be performed with local anaesthesia, sedation or general anaesthesia, and takes about 10–15 min to complete.

Prior to current methods of medical abortion, previous medical alternatives to D&E involved saline, urea or prostaglandin F2-alpha. The comparative safety of D&E and medical abortion was first established by large cohort studies and case series conducted in the USA. Instillation of saline, urea or prostaglandin F2-alpha was demonstrated to carry a significantly higher risk of serious complications than D&E, including death.⁸ One randomised trial of D&E to instillation of prostaglandin F2-alpha confirmed that complications were less frequent with D&E, as were side effects.⁹ Modern medical abortion using mifepristone and misoprostol is safer and more effective, has much shorter induction-to-abortion intervals and is better tolerated than these outdated medical abortion procedures.¹⁰ In addition, in contrast to surgical D&E, the safety and success of the medical method depends on the medication and not on the skill of a surgeon. Moreover, studies have shown that both methods are safe and effective in the first trimester.^{3 11 12}

Choice is an integral part of abortion care. Providing evidence-based information on the differences between methods is essential in helping a woman select the abortion method that is right for her.^{4,5} We performed a systematic review and compared the effectiveness, safety and acceptability of surgical and medical abortion of pregnancies between 13⁺⁰ and 23⁺⁶ weeks' gestation in order to inform recommendations of method choices for a national guideline on abortion care for England.¹³

METHODS

Eligibility criteria for study consideration

Randomised controlled trials (RCTs) of any size and non-randomised comparative studies with $n \geq 100$ in each arm, published in English from 1985 onwards were eligible for inclusion. A minimum number of 100 women in each arm was chosen because since allocation to treatment in such studies is non-random, the intervention groups tend to differ on a number of (baseline) characteristics that the analyses need to take into account in terms of adjustment. Balancing the need for covariate adjustment and a sample size

that is appropriate for such analyses, alongside the desire not to miss any potentially relevant evidence of a reasonable quality, 100 was chosen as the minimum number of participants per arm where it was thought that such analyses can provide meaningful results, when also taking into account that meta-analysis of non-randomised studies is often not possible. The date 1985 was selected as mifepristone was not licensed for use prior to this date in any country. Eligible studies compared surgical (using D&E or vacuum aspiration) to medical (using mifepristone and misoprostol (any regimen)) abortion between 13⁺⁰ and 23⁺⁶ weeks' gestation, reporting any of the following outcomes: 'incomplete abortion with the need for surgical intervention', 'haemorrhage requiring transfusion/ ≥ 500 mL blood loss', 'patient satisfaction/acceptability', 'abortion completed by intended method', 'uterine injury (including rupture)', 'cervical injury requiring repair', and 'infection reported within 1 month of abortion'.

Information sources and search strategy

On 4 March 2019 we searched Embase Classic and Embase (1947–2019 March 01); Ovid MEDLINE(R) Epub Ahead-of-Print, In-Process & Other Non-Indexed Citations, Ovid MEDLINE(R) Daily and Ovid MEDLINE(R) (1946–2019 March 01); and Cochrane Database of Systematic Reviews (CDSR) and Cochrane Central Register of Controlled Trials (CENTRAL) on Cochrane Library via Wiley Online (March 2019; 3 of 12) using the search strategies detailed in online supplementary appendix S1. Once this search had been performed we only included records published from 1985 onwards in the final database. We also consulted experts in this field for any ongoing or missed trials.

Study selection and data extraction

First, one author screened the titles and abstracts of the records identified by the computerised search, classifying them into 'potentially relevant' and 'not relevant'. Second, the same author examined the full texts of the potentially relevant studies and classified them into 'include' and 'exclude'. Third, the final list of included studies was confirmed by consensus between three of the authors: the author who had performed the screen and two authors who are experts in the field and familiar with the literature. One of the authors extracted the following data from each of the included studies: country, dates, aim, inclusion and exclusion criteria, baseline characteristics, surgical and medical abortion details and outcome data for each of the intervention groups. A further two of the authors performed spot checks of the extracted data.

Assessment of risk of bias

One author assessed the risk of bias in each of the studies using the Cochrane Collaboration quality checklist for RCTs.¹⁴ Selection bias and outcome

reporting bias were assessed at study-level whereas performance bias, detection bias and attrition bias were assessed at outcome-level. We searched for, but did not find any, non-randomised comparative studies, which would have been assessed for risk of bias using the Newcastle-Ottawa scale for cohort studies.¹⁵

Data synthesis

All the outcomes were analysed as risk ratios (RRs). Meta-analyses were performed in Review Manager 5.3¹⁶ using the Mantel-Haenszel method. Heterogeneity was assessed using the I^2 : if I^2 was 0%–50%, a fixed effect model was used; if I^2 was 51%–80%, a random effects model was used; and if $I^2 > 80\%$, the RRs would not be pooled, but rather reported individually for each study. Subgroup analyses based on complex pre-existing medical conditions (none vs present) and whether the abortion was performed due to fetal anomaly (yes vs no) were planned. Whenever possible we aimed to conduct intention-to-treat analyses of the RCTs to preserve randomisation. Although we had not aimed to perform any sensitivity analyses, we performed a post hoc sensitivity analysis of a statistically, but not clinically (see below), significant result with an I^2 of 48% by conducting a random effects analysis because we recognise that our I^2 thresholds are relatively arbitrary and we wanted to further interrogate the robustness of a potentially weak result.

Quality of the evidence

The GRADE system was used to rate the quality of the evidence for each outcome using the GRADEpro profiler Guideline Development Tool software.¹⁷ For a result to be considered clinically significant, a minimal important difference (MID; that is, effect size) between the intervention groups was defined as a statistically significant RR > 1.25 or < 0.8 for dichotomous outcomes and 0.5 times the SD of the control group for continuous outcomes apart from 'haemorrhage requiring transfusion/ ≥ 500 mL blood loss', where simple statistical significance was also considered clinically significant due to the severity of this outcome. Imprecision was therefore present if the 95% CI of the RR crossed 0.8 and/or 1.25 or ± 0.5 times the SD for all outcomes apart from 'haemorrhage requiring transfusion/ ≥ 500 mL blood loss'. As the MID for this outcome was statistical significance, the imprecision ratings were undertaken by using the optimum information size (OIS) so that if the total event rate ≥ 300 , then the quality was not downgraded; if the event rate = 150–299, then the quality was downgraded by one level; and if the event rate < 150 , then the quality was downgraded by two levels. When an outcome was reported as a median for which no MIDs are available, imprecision ratings were also undertaken by using the OIS so that if the total $n \geq 400$, then the quality was not downgraded; if the total $n = 200$ –399, then the quality was downgraded by

one level; and if the total $n < 200$, then the quality was downgraded by two levels.

'Incomplete abortion with the need for surgical intervention' was selected as a critical outcome due to the impact a second procedure will have on both the woman and on available resources. Although 'haemorrhage requiring transfusion/ ≥ 500 mL blood loss' is a relatively rare outcome, it was also selected as a critical outcome as it can be very serious when it occurs. The final critical outcome was 'patient satisfaction/acceptability' as abortion is an area where women are known to have strong preferences and providers wish to provide women with a service that meets their needs. Although 'cervical trauma', 'uterine perforation', and 'infection within 1 month of abortion' are rare in women undergoing abortion, they were included as important outcomes given the seriousness of such events and to allow for a balance of the benefits and harms of the different abortion methods to be assessed. 'Abortion completed by the intended method' was included as an important outcome to capture the failure rate of each abortion method as this also has implications for resource use and is likely to influence patient preference due to the need for a second visit if the chosen method fails.

Patient involvement

This systematic review was undertaken as part of the 2019 National Institute for Health and Care Excellence (NICE) guideline on 'Abortion Care',¹³ which was developed by a technical team at the National Guideline Alliance (NGA), based at the Royal College of Obstetricians and Gynaecologists (RCOG), and a guideline committee recruited specifically for this purpose. The guideline committee comprised a mix of clinical experts, commissioners and patient members, who collaboratively decided on the focus and specific parameters of the clinical question under consideration. Both the guideline scope and the draft guideline itself were also subject to public consultation before being finalised. During both consultations any organisation registering as a stakeholder could send in their comments, which the NGA/guideline committee took into account in the final versions of both the scope and guideline.

RESULTS

Study selection

The search of all the databases identified 1732 records of which 1703 were excluded based on title/abstract and 29 were obtained for full-text review. Subsequently, 27/29 papers were excluded as they did not meet the inclusion criteria and two studies, both RCTs, were included (see online supplementary appendices S2–S3 for further details).^{18 19} We did not find any non-randomised studies meeting the inclusion criteria.

Table 1 Summary of the characteristics of the included studies

Study and setting	Population	Intervention/comparison
Grimes 2004 RCT (pilot) USA	n=18 English-speaking women aged ≥18 years with gestational age of 13.9–19.9 weeks, including patients who had experienced a fetal death or had a fetus with congenital anomalies or chromosomal defect.	Medical abortion: Oral mifepristone 200 mg on Day 1 and vaginal misoprostol 800 µg on Day 3 ± oral misoprostol 400 µg every 3 hours up to a maximum of four doses. Pain relief provided by a patient-controlled analgesia system dispensing a continuous infusion of morphine. versus Surgical abortion: Dilation & evacuation performed under light general anaesthesia.
Kelly 2010 RCT UK	n=122 Pregnant women requesting and accepted for an abortion under Clause C of the Human Fertilisation and Embryology Act (1990) amendment of the Abortion Act (1967), gestational age 13 ⁺⁰ to 19 ⁺⁶ weeks at the time of abortion; women aged <16 years also eligible if deemed Fraser competent and had a parent/guardian present and consenting; previous caesarean section was not an exclusion criterion.	Medical abortion: Oral mifepristone 200 mg on Day 1 and vaginal misoprostol 800 µg 36–48 hours later ± oral/vaginal misoprostol 400 µg (depending on vaginal bleeding) every 3 hours up to a maximum of four doses (pain relief not described). versus Surgical abortion: Vacuum aspiration performed under general anaesthesia.

— RCT, randomised controlled trial.

Study characteristics

The two included trials randomised a total of 140 women, 69 to medical abortion and 71 to surgical abortion (table 1, online supplementary appendix S4).

Risk of bias of included studies

Both studies were at low risk of selection bias and selective reporting bias as they both had adequate generation of the randomisation list and allocation concealment, and reported the expected outcomes. Although both studies were also completely unblinded (women, healthcare staff, outcome assessors) we still considered the reported outcomes at low risk as they were either objective outcomes or only possible by the women knowing what they went through ('patient satisfaction/acceptability'). One of the studies was also at low risk of attrition bias as it reported intention-to-treat analyses for all of the outcomes, however this study was stopped early due to slow recruitment, recruiting only 18 of a planned 60 women.¹⁸ The other study was considered at low risk for all reported outcomes (intention-to-treat analyses done for the majority of the outcomes), apart from 'patient satisfaction/acceptability', which was at high risk of attrition bias due to ≥50% missing data in each group¹⁹ (see also online supplementary appendix S4).

Synthesis of results

Meta-analyses were undertaken for all the outcomes with the exception of patient satisfaction/acceptability. The rate of 'incomplete abortion requiring surgical intervention' (table 2; figure 1) was clinically significantly higher and the rate of 'abortion completed by the intended method' (table 2; figure 2) was statistically, but not clinically, significantly lower after medical than after the surgical abortion of pregnancy.

It is worth noting that in the latter case the between-study heterogeneity was high ($I^2=48\%$) and the use of a random-effects model, rather than fixed-effect model, for this analysis resulted in a statistically non-significant result (RR=0.83, 95% CI 0.57 to 1.22).

Grimes *et al*¹⁸ did not directly report 'haemorrhage requiring transfusion/≥500 mL blood loss', 'uterine injury including rupture' or 'cervical injury requiring repair', but did report that no serious adverse events occurred. Kelly *et al*¹⁹ found no significant differences in these outcomes between the medical and surgical abortion groups (table 2). None of the studies directly reported 'infection reported within 1 month of abortion', but infection was included in the definition of complications by Kelly *et al*,¹⁹ so presumably it was looked for, but not observed or reported by the authors; and Grimes *et al*¹⁸ did report that three women had fever (>38°C) (table 2).

Surgical abortion was associated with clinically significantly higher or comparable patient satisfaction/acceptability compared with medical abortion, depending on how patient satisfaction/acceptability was measured: A clinically significantly higher rate of women would choose surgical abortion again than medical abortion;¹⁹ and a clinically significantly higher rate of women consider their experience of abortion worse than expected in the medical abortion group than in the surgical abortion group (table 2).¹⁹ There was no difference between surgical and medical abortion if patient satisfaction was measured as ratings of 'satisfied with information/counselling pre-abortion' at 2 weeks;¹⁹ ratings of 'satisfied with care during the abortion' at 2 weeks;¹⁹ ratings of satisfied with counselling/support post-abortion at 2 weeks;¹⁹ or as ratings on a scale from 1 (very satisfied) to 5 (very dissatisfied)

Table 2 Summary of findings table													
Quality assessment							Patients (n)		Effect				
Studies (n)		Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Medical abortion	Surgical abortion	Relative (95% CI)	Absolute	Quality	Importance
Incomplete abortion requiring surgical intervention													
2	RCT	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious*	None		9/69 (13%)	2/71 (2.8%)	RR 4.58 (1.07 to 19.64)	101 more per 1000 (from 2 more to 525 more)	Moderate	Critical
Haemorrhage requiring transfusion/≥500 mL blood loss													
2	RCT	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious†	None		1/69 (1.4%)	5/71 (7%)	RR 0.21 (0.02 to 1.72)	56 fewer per 1000 (from 69 fewer to 51 more)	Low	Critical
Patient acceptability/satisfaction: patient acceptability (scale from 1 (very satisfied) to 5 (very dissatisfied)); at discharge													
1	RCT	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious‡	None		Median (IQR) 1 (1–1) (n=9)	Median (IQR) 1 (1–1) (n=9)	Not estimable	Not estimable	Low	Critical
Patient acceptability/satisfaction: patient acceptability (“Would choose the same method again”); at 2 weeks													
1	RCT	Very serious§	No serious inconsistency	No serious indirectness	Very serious¶	None		16/30 (53.3%)	26/26 (100%)§§	RR 0.54 (0.39 to 0.76)	460 fewer per 1000 (from 240 fewer to 610 fewer)	Very low	Critical
Patient acceptability/satisfaction: patient acceptability (“Experience of abortion worse than expected”); at 2 weeks													
1	RCT	Very serious§	No serious inconsistency	No serious indirectness	Very serious¶	None		16/30 (53.3%)	0/26 (0%)¶¶	RR 28.74 (1.81 to 456.75)	Not estimable	Very low	Critical
Patient acceptability/satisfaction: patient satisfaction (rating of satisfied with information/counselling pre-abortion); at 2 weeks													
1	RCT	Very serious§	No serious inconsistency	No serious indirectness	Very serious¶	None		29/29 (100%)	35/36 (97.2%)	RR 1.02 (0.95 to 1.11)	19 more per 1000 (from 49 fewer to 107 more)	Very low	Critical
Patient acceptability/satisfaction: patient satisfaction (rating of satisfied with care during abortion); at 2 weeks													
1	RCT	Very serious§	No serious inconsistency	No serious indirectness	Very serious¶	None		29/29 (100%)	35/36 (97.2%)	RR 1.02 (0.95 to 1.11)	19 more per 1000 (from 49 fewer to 107 more)	Very low	Critical
Patient acceptability/satisfaction: patient satisfaction (rating of satisfied with counselling/support post-abortion); at 2 weeks													
1	RCTV	Very serious§	No serious inconsistency	No serious indirectness	Very serious¶	None		28/29 (96.6%)	35/35 (100%)	RR 0.96 (0.88 to 1.05)	40 fewer per 1000 (from 120 fewer to 50 more)	Very low	Critical
Abortion completed by intended method													
2	RCT	No serious risk of bias	No serious inconsistency	No serious indirectness	Serious*	None		52/61 (85.2%)	65/67 (97%)	RR 0.88 (0.79 to 0.98)	116 fewer per 1000 (from 19 fewer to 204 fewer)	Moderate	Important

Continued

Table 2 Continued

Quality assessment												
Studies (n)		Patients (n)					Effect					
Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Medical abortion	Surgical abortion	Relative (95% CI)	Absolute	Quality	Importance	
Uterine injury (including rupture)												
2	RCT	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious**	None	0/69 (0%)	0/71 (0%)	Not estimable	Not estimable	Low	Important
Cervical injury requiring repair												
2	RCT	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious††	None	0/69 (0%)	1/71 (1.4%)	RR 0.34 (0.01 to 8.29)	9 fewer per 1000 (from 14 fewer to 103 more)	Low	Important
Infection reported within 1 month of abortion												
2	RCT	No serious risk of bias	No serious inconsistency	No serious indirectness	Very serious††	None	3/69 (4.3%)	0/71 (0%)	RR 7 (0.41 to 118.69)	Not estimable	Low	Important

*95% CI crosses one minimal important difference (MID) threshold (0.8 or 1.25).

†The MID for this outcome is statistical significance, and the imprecision ratings were undertaken on that basis by using the optimum information size (OIS) so that if the total event rate ≥ 300 , then the quality was not downgraded; if the event rate=150–299, then the quality was downgraded by one level; and if the event rate <150, then the quality was downgraded by two levels.

‡No MID available for this outcome as it is only reported as median's and ranges. Imprecision ratings were undertaken by using the OIS so that if the total $n \geq 400$, then the quality was not downgraded; if the total $n = 200$ –399, then the quality was downgraded by one level; and if the total $n < 200$, then the quality was downgraded by two levels.

§ $\geq 50\%$ missing data in each group.

¶Small sample size ($n < 66$).

**Low event rate (no events were observed in a total of 140 patients).

††Low event rate (one event was observed in a total of 140 patients).

‡‡95% CI crosses two MID thresholds (0.8 and 1.25).

§§26/26 should possibly be 36/36 as $n = 36$ analysed in this group. However, Table 2 of the original publication lists $n = 26$.

¶¶10/26 should possibly be 0/36 as $n = 36$ analysed in this group. However, Table 2 of the original publication lists $n = 26$.

CI, confidence interval; IQR, interquartile range; MID, minimal important difference; OIS, optimum information size; RCT, randomised controlled trial; RR, relative risk.

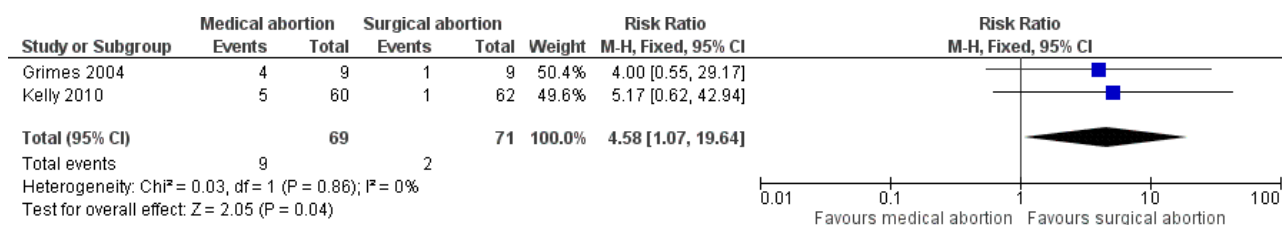


Figure 1 Incomplete abortion requiring surgical intervention. CI, confidence interval; df, degrees of freedom; M-H, Mantel-Haenszel method.

at discharge (table 2).¹⁸ We had aimed to undertake subgroup analyses based on complex pre-existing medical conditions (none vs present) and whether the abortion was performed due to fetal anomaly (yes vs no), but the included studies did not report such data and therefore we were unable to perform these analyses.

DISCUSSION

Main findings

The limited evidence that we found indicated that surgical abortion was either superior or comparable to medical abortion with mifepristone and misoprostol with respect to outcomes which were common enough to be evaluated in this systematic review. Although medical and surgical abortion did not differ significantly in terms of serious adverse events, very few adverse events were observed and the included studies were not powered to detect any difference in them between the abortion methods. Medical abortion was associated with a clinically significantly higher rate of an ‘incomplete procedure requiring surgical intervention’ and a statistically, but not clinically, significantly lower rate of ‘abortion completed by the intended method’ (although this finding did not hold up when using a random effects model). In addition, significantly more women would choose surgical abortion again if needed, and more women who had a medical abortion considered their experience worse than expected than those who had surgical abortion. Satisfaction with pre-, intra- or post-procedure care and overall satisfaction were not different between methods.

The quality of evidence for each of these outcomes ranged from very low (‘patient satisfaction/acceptability’), through low (‘haemorrhage requiring transfusion/ ≥ 500 mL blood loss’, ‘uterine injury including rupture’, ‘cervical injury requiring repair’ and ‘infection reported within 1 month of abortion’) to moderate (‘incomplete abortion with the need for

surgical intervention’ and ‘abortion completed by intended method’), and was mainly compromised by small event rates leading to imprecise results and, in the case of ‘patient satisfaction/acceptability’, by high attrition rates. Moreover, the studies did not include women having abortion of pregnancies $\geq 20^{+0}$ weeks’ gestation.

Strengths and limitations

Strengths of the study are that the research question was selected due to variation in practice in this area with a recognised need for guidance, and that the existing evidence base was examined in a systematic review using many of the well-established methods of the Cochrane Collaboration¹⁴ by experienced systematic reviewers within a long-standing guideline development framework with robust processes.²⁰ However, the Cochrane Collaboration promotes the practice of two authors independently undertaking a number of the tasks associated with conducting a systematic review, such as dual sifting of the search and dual data extraction and bias appraisal. In this systematic review, only one author performed these tasks formally, but this was accompanied by a more informal process of dual sifting, and data extraction and bias assessment checking, through pre-existing knowledge of the evidence base and spot checks of some of the detailed study results by two of the other authors.

Limitations of the study include the few available studies, both of which were challenged with achieving recruitment goals. It is possible that there have been developments in service delivery of second-trimester medical and surgical abortion or in clinical protocols, including management of cervical dilation and pain, that might impact on the acceptability of either method now or in the future.^{21 22}

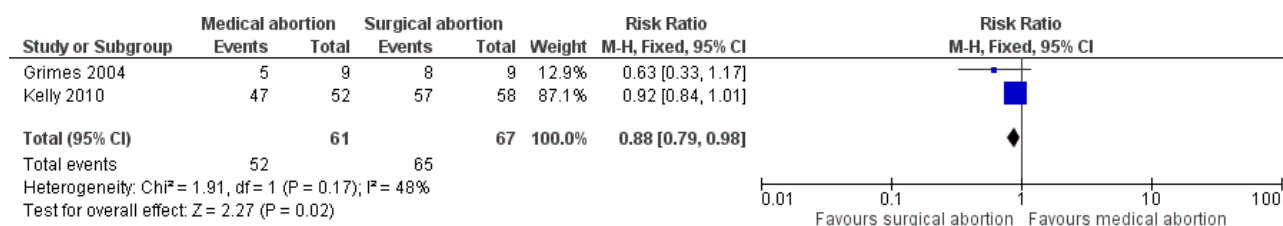


Figure 2 Abortion completed by the intended method. CI, confidence interval; df, degrees of freedom; M-H, Mantel-Haenszel method.

Interpretation

When the committee that had been recruited to develop the 2019 NICE clinical guideline on 'Abortion Care'¹³ considered the included evidence they noted that it was limited both in terms of number of included studies and their size, and that although the evidence favoured surgical over medical abortion for some of the outcomes (ie, 'incomplete abortion requiring surgical intervention' and 'patient satisfaction/acceptability'), for other outcomes where the absolute risk was low (ie, 'haemorrhage requiring transfusion/ ≥ 500 mL blood loss', 'uterine and cervical injury' and 'infection within 1 month of abortion'), the studies were not sufficiently powered to detect any between-group differences. The committee also noted that although the rate of abortions completed by the intended method did differ statically significantly between the methods, this difference was small, not clinically significant, marked by high between-study heterogeneity and did not hold up in a sensitivity analysis employing a random-effects model. Since evidence for the superiority of one method over another was either not available or did not allow differentiation between methods, a preference-sensitive care model that permitted choice dependent on how individuals value the risks and benefits of treatments was recommended. Moreover, the committee were aware that the included studies both had difficulties recruiting women to participate because this is an area of very strong patient preferences in terms of which method of abortion is wanted and of other studies demonstrating greater satisfaction with treatment if a woman was able to obtain the abortion method of her choice.^{2 23}

When making the recommendations below, the guideline committee also took into account evidence systematically reviewed in connection with other areas of the guideline showing that women value a choice of procedure at all gestations (see Evidence reports A and B of the guideline¹³) and the fact that although the evidence comparing medical and surgical abortion before 13⁺⁰ weeks' gestation was not reviewed, studies have shown that both methods are safe and effective at this gestational age.^{3 11 12} Moreover, the committee agreed to extend the recommendations up to 23⁺⁶

weeks' gestation despite the included evidence only covering up to 19⁺⁶ weeks' gestation because in their experience and knowledge the safety and effectiveness of the methods does not increase markedly for one method over the other as gestational age advances and therefore the need for preference-sensitive decision-making remained relevant.

Many services in Britain only offer either surgical or medical abortion and it is anticipated that this recommendation will lead to development of services. There are also relatively few doctors trained to provide surgical abortion in the second trimester in the National Health Service (NHS), and most independent sector services do not provide inpatient medical abortion. In addition, many NHS services that offer medical abortion in the second trimester only do so for abortions in cases of fetal anomaly. To address these issues, greater collaboration may be needed between and across sectors to provide women with a choice of methods. Theatre teams in the NHS will need support if they are going to introduce a new service offering surgical abortion by D&E. Modern D&E practice uses ultrasound scanning during surgery, so scan machines need to be available in theatre and staff need to be able to undertake intraoperative scanning. In addition, surgeons will need training and a reasonable caseload of second-trimester abortions in order to attain and maintain their skills and low complication rates with D&E. Before services can start offering medical abortion, they need to ensure they have beds available and nursing or midwifery staff who are trained to care for women having medical abortion of pregnancy in the second trimester regardless of indication.

CONCLUSIONS

On the basis of this evidence and the clinical experience of the guideline committee recruited to develop the 2019 NICE guideline on 'Abortion Care',¹³ the committee agreed the following recommendations:

- ▶ Offer a choice between medical or surgical abortion up to and including 23⁺⁶ weeks' gestationⁱ. If any methods would not be clinically appropriate, explain why.
- ▶ To help women decide between medical and surgical abortion, see the NICE decision aid on choosing medical or surgical abortion: <https://www.nice.org.uk/guidance/ng140/resources/patient-decision-aids-and-user-guides-6906582256>.
- ▶ Commissioners and providers should work together to ensure that women are promptly referred onwards if a service cannot provide an abortion after a specific gestational age or by the woman's preferred method.

ⁱSurgical abortion can be performed shortly after 23⁺⁶ weeks' gestation **only** if feticide is given at or before 23⁺⁶ weeks' gestation, according to the 2019 clarification of the time limits in the Abortion Act.

Additional educational resources

- ▶ Lohr PA, Hayes JL, Gemzell-Danielsson K. Surgical versus medical methods for second trimester induced abortion. *Cochrane Database Syst Rev* 2008;1:CD006714. doi: 10.1002/14651858.CD006714.pub2.
- ▶ Grossman D, Blanchard K, Blumenthal P. Complications after second trimester surgical and medical abortion. *Reprod Health Matters* 2008;16:173–82
- ▶ British Pregnancy Advisory Service (BPAS) website: <https://www.bpas.org>.

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Contributors PAL, SC, EH and MSH conceived and designed the review and wrote the protocol. EH devised and undertook the search strategy. MSH screened the search results and performed the data extraction and 'risk of bias' assessment of the included studies. MSH devised and performed the analysis strategy. PAL and SC interpreted the results. PAL, MSH, SC and EH wrote the first draft of different sections of the full review. All the authors critically revised the first draft of the review and approved the final version of the review.

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Patient consent for publication Not required.

Provenance and peer review Not commissioned; externally peer reviewed.

ORCID iDs

Mia Schmidt-Hansen <http://orcid.org/0000-0002-4503-6870>

Patricia A Lohr <http://orcid.org/0000-0003-1862-5730>

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Appendix S1

Search strategy for Medline & Embase (Multifile) via OVID

Search date 4 March 2019

#	Searches
1	exp abortion/ use emczd
2	exp pregnancy termination/ use emczd
3	exp Abortion, Induced/ use ppez
4	Abortion Applicants/ use ppez
5	exp Abortion, Spontaneous/ use ppez
6	exp Abortion, Criminal/ use ppez
7	Aborted fetus/ use ppez
8	fetus death/ use emczd
9	abortion.mp.
10	(abort\$ or postabort\$ or preabort\$).tw.
11	((f?etal\$ or f?etus\$ or gestat\$ or midtrimester\$ or pregnan\$ or prenatal\$ or pre natal\$ or trimester\$) and terminat\$).tw.
12	((f?etal\$ or f?etus\$) adj loss\$).tw.
13	((gestat\$ or midtrimester\$ or pregnan\$ or prenatal\$ or pre natal\$ or trimester\$) adj3 loss\$).tw.
14	((elective\$ or threaten\$ or voluntar\$) adj3 interrupt\$) and pregnan\$).tw.
15	1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10 or 11 or 12 or 13 or 14
16	exp Curettage/ use ppez
17	"dilation and evacuation"/ use emczd
18	"dilatation and curettage"/ use emczd
19	vacuum aspiration/ use emczd
20	((dilat\$ or vacuum\$ or suction\$ or surgical) adj5 (evac\$ or extract\$ or curet\$ or aspirat\$)).tw.
21	curettage\$.tw.
22	16 or 17 or 18 or 19 or 20 or 21
23	Mifepristone/ use ppez
24	mifepristone/ use emczd
25	(mifepriston\$ or mifeprex\$ or mifegyn\$ or ru-486\$ or ru486\$ or ru-38486\$ or ru38486\$).mp.
26	Misoprostol/ use ppez
27	misoprostol/ use emczd
28	(misoprostol\$ or cytotec\$ or arthrotec\$ or oxaprost\$ or cyprostol\$ or mibetec\$ or prostokos\$ or misotrol\$).mp.
29	(medica\$ adj5 evac\$).tw.
30	23 or 24 or 25 or 26 or 27 or 28 or 29
31	15 and 22 and 30
32	(surg\$ adj6 (abortion\$ or termination\$)).tw.
33	(medica\$ adj6 (abortion\$ or termination\$)).tw.
34	32 and 33
35	31 or 34
36	limit 35 to english language
37	remove duplicates from 36 [general exclusions filter applied]

Search strategy for the Cochrane Library (CDSR and CENTRAL) via Wiley Online

Search date 4 March 2019

#	Searches
#1	MeSH descriptor: [Abortion, Induced] explode all trees
#2	MeSH descriptor: [Abortion Applicants] explode all trees
#3	MeSH descriptor: [Abortion, Spontaneous] explode all trees
#4	MeSH descriptor: [Abortion, Criminal] explode all trees
#5	MeSH descriptor: [Aborted Fetus] explode all trees
#6	"abortion":ti,ab,kw (Word variations have been searched)
#7	(abort* or postabort* or preabort*):ti,ab,kw (Word variations have been searched)
#8	((fetal* or fetus* or foetal* or foetus* or gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) and terminat*):ti,ab,kw (Word variations have been searched)
#9	((fetal* or fetus* or foetal* or foetus*) next loss*):ti,ab,kw (Word variations have been searched)
#10	((gestat* or midtrimester* or pregnan* or prenatal* or pre natal* or trimester*) near/3 loss*):ti,ab,kw (Word variations have been searched)
#11	((elective* or threaten* or voluntar*) near/3 interrupt*) and pregnan*):ti,ab,kw (Word variations have been searched)
#12	#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11
#13	MeSH descriptor: [Curettage] explode all trees
#14	((dilat* or vacuum* or suction* or surgical) near/5 (evac* or extract* or curet* or aspirat*)):ti,ab,kw (Word variations have been searched)
#15	curettage:ti,ab,kw (Word variations have been searched)
#16	#13 or #14 or #15
#17	MeSH descriptor: [Abortifacient Agents] explode all trees
#18	abortifacient*:ti,ab,kw (Word variations have been searched)
#19	MeSH descriptor: [Mifepristone] explode all trees
#20	(mifepriston* or mifeprex* or mifegyn* or ru-486* or ru486* or ru-38486* or ru38486*):ti,ab,kw (Word variations have been searched)
#21	MeSH descriptor: [Misoprostol] explode all trees
#22	(misoprostol* or cytotec* or arthrotec* or oxaprost* or cyprostol* or mibetec* or prostokos* or misotrol*):ti,ab,kw (Word variations have been searched)
#23	(medica* near/5 evac*):ti,ab,kw (Word variations have been searched)
#24	#17 or #18 or #19 or #20 or #21 or #22 or #23
#25	(surg* near/6 (abortion* or termination*)):ti,ab,kw (Word variations have been searched)
#26	(medica* near/6 (abortion* or termination*)):ti,ab,kw (Word variations have been searched)
#27	#25 and #26
#28	#12 and #16 and #24
#29	#27 or #28

Appendix S2

Excluded studies

Study	Reason for Exclusion
Ashok, P. W., Hamoda, H., Flett, G. M. M., Kidd, A., Fitzmaurice, A., Templeton, A., Patient preference in a randomized study comparing medical and surgical abortion at 10-13 weeks gestation, <i>Contraception</i> , 71, 143-148, 2005	Population not in PICO (gestational age 10-13 weeks)
Ashok, P. W., Kidd, A., Flett, G. M. M., Fitzmaurice, A., Graham, W., Templeton, A., A randomized comparison of medical abortion and surgical vacuum aspiration at 10-13 weeks gestation, <i>Human Reproduction</i> , 17, 92-98, 2002	Population not in PICO (gestational age 10-13 weeks)
Autry, A. M., Hayes, E. C., Jacobson, G. F., Kirby, R. S., A comparison of medical induction and dilation and evacuation for second-trimester abortion, <i>American Journal of Obstetrics and Gynecology</i> , 187, 393-397, 2002	Interventions/comparisons not in PICO (medical abortion not undertaken with mifepristone and misoprostol)
Baldwin, M., Basnett, I., Dangol, D. S., Karki, C., Castleman, L., Edelman, A. B., Introduction of second trimester medical and surgical abortion in Nepal, <i>International Journal of Gynecology and Obstetrics</i> , 3), S290, 2012	Not RCT. Published as abstract only, not enough information available to ascertain relevance.
Costescu, D., Guilbert, E., No. 360-Induced Abortion: Surgical Abortion and Second Trimester Medical Methods, <i>Journal of Obstetrics and Gynaecology Canada</i> , 40, 750-783, 2018	Systematic review, included studies checked for relevance.
Cowett, A. A., Golub, R. M., Grobman, W. A., Cost-effectiveness of dilation and evacuation versus the induction of labor for second-trimester pregnancy termination, <i>American Journal of Obstetrics & Gynecology</i> , 194, 768-73, 2006	Not a systematic review and no original data.
Debby, A., Golan, A., Sagiv, R., Sadan, O., Glezerman, M, Midtrimester abortion in patients with a previous uterine scar, <i>European journal of obstetrics, gynecology, and reproductive biology</i> , 109, 177-180, 2003	Not RCT; non-comparative study
Di Carlo, C., Savoia, F., Ferrara, C., Sglavo, G., Tommaselli, G. A., Giampaolino, P., Cagnacci, A., Nappi, C., "In patient" medical abortion versus surgical abortion: patient's satisfaction, <i>Gynecological Endocrinology</i> , 32, 650-654, 2016	Population not in PICO (gestational age < 7 weeks)
Grossman,D., Blanchard,K., Blumenthal,P., Complications after Second Trimester Surgical and Medical Abortion, <i>Reproductive Health Matters</i> , 16, 173-182, 2008	Systematic review; checked for relevant studies, which are included separately in the current review
Lohr, Patricia A, Hayes, Jennifer L, Gemzell-Danielsson, Kristina, Surgical versus medical methods for second trimester induced abortion, <i>Cochrane Database of Systematic Reviews</i> , 2008	Systematic review; checked for relevant studies, which are included separately in the current review

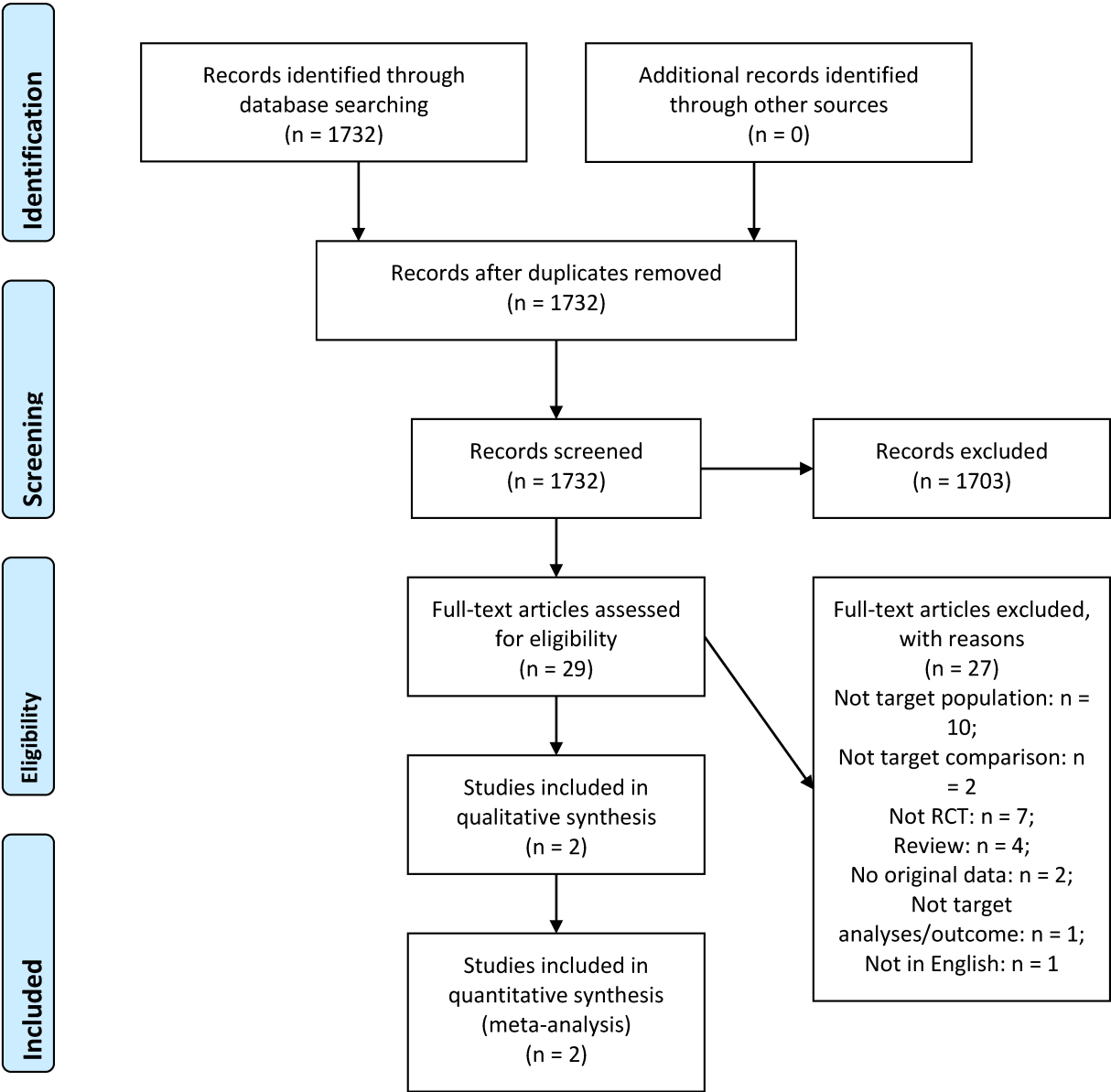
Study	Reason for Exclusion
Lowenstein, L., Deutch, M., Gruberg, R., Solt, I., Yagil, Y., Nevo, O., Bloch, M., Psychological distress symptoms in women undergoing medical vs. surgical termination of pregnancy, <i>General Hospital Psychiatry</i> , 28, 43-47, 2006	Population not in PICO (gestational age < 64 days)
Lys, R., Comparing medical versus surgical termination of pregnancy at 13-20 weeks of gestation: A randomised controlled trial, <i>BJOG: An International Journal of Obstetrics and Gynaecology</i> , 118, 1148-1149, 2011	Letter to the editor about Kelly et al., 2010 (and no other relevant data)
Medarametla, V., A comparative study of vaginal misoprostol versus trans-cervical foley catheter insertion along with vaginal misoprostol in termination of mid-trimester pregnancies, <i>European Journal of Contraception and Reproductive Health Care</i> , 21, 57-58, 2016	Does not appear to be an RCT. Published as abstract only, not enough information available to ascertain relevance, although comparison is probably not in PICO
Moreau, C., Trussell, J., Desfreres, J., Bajos, N., Medical vs. surgical abortion: The importance of women's choice, <i>Contraception</i> , 84, 224-229, 2011	Population not in PICO (gestational age < 8 weeks)
Moreau, C., Trussell, J., Desfreres, J., Bajos, N., Medical versus surgical abortion: The importance of women's choice, <i>Contraception</i> , 82 (2), 205, 2010	Not an RCT. Published as an abstract only; not enough information to ascertain relevance, but population probably not in PICO as appears to be a report of the same data as reported by Moreau 2011
Rademakers, J., Koster, E., Jansen-Van Hees, A. C. V., Willems, F., Medical abortion as an alternative to vacuum aspiration: First experiences with the 'abortion pill' in The Netherlands, <i>European Journal of Contraception and Reproductive Health Care</i> , 6, 185-191, 2001	Population not in PICO (gestational age < 50 days)
Robson, S. C., Kelly, T., Howel, D., Deverill, M., Hewison, J., Lie, M. L. S., Stamp, E., Armstrong, N., May, C. R., Randomised preference trial of medical versus surgical termination of pregnancy less than 14 weeks' gestation (TOPS), <i>Health Technology Assessment</i> , 13, 1-124, 2009	Includes population up to gestational age of 14 weeks; no subgroup analyses for subsection of population in PICO (i.e., gestational age 13-14 weeks)
Rodriguez, M. I., Mendoza, W. S., Guerra-Palacio, C., Guzman, N. A., Tolosa, J. E., Medical abortion and manual vacuum aspiration for legal abortion protect women's health and reduce costs to the health system: Findings from Colombia, <i>Reproductive Health Matters</i> , Part S1. 22, 125-133, 2015	Population not in PICO (first trimester only); also appears that medical abortion used misoprostol only and not in combination with mifepristone
Say, Lale, Brahmi, Dalia, Kulier, Regina, Campana, Aldo, Gülmezoglu, A Metin, Medical versus surgical methods for first trimester termination of pregnancy, <i>Cochrane Database of Systematic Reviews</i> , 2002	Systematic review; included studies checked for relevance

Study	Reason for Exclusion
Slade, P., Heke, S., Fletcher, J., Stewart, P., Termination of pregnancy: Patients' perceptions of care, <i>Journal of Family Planning and Reproductive Health</i> , 27, 72-77, 2001	Not RCT; population not in PICO (first trimester abortions)
Sonalkar, S., Ogden, S. N., Tran, L. K., Chen, A. Y., Comparison of complications associated with induction by misoprostol versus dilation and evacuation for second-trimester abortion, <i>International Journal of Gynecology and Obstetrics</i> , 138, 272-275, 2017	Comparison not in PICO (medical abortion performed with misoprostol alone, and no mifepristone)
Vijayasree, M., A comparative study of vaginal misoprostol versus trans - Cervical foley catheter insertion along with vaginal misoprostol in termination of mid-trimester pregnancies, <i>Journal of Obstetrics and Gynaecology Research</i> , 43, 23, 2017	Does not appear to be an RCT. Published as abstract only, not enough information available to ascertain relevance, although comparison is probably not in PICO
Virgo, K. S., Carr, T. R., Hile, A., Virgo, J. M., Sullivan, G. M., Kaikati, J. G., Medical versus surgical abortion: A survey of knowledge and attitudes among abortion clinic patients, <i>Women's Health Issues</i> , 9, 143-154, 1999	Analyses/outcomes not in PICO (survey completed while waiting for the abortion appointment)
Wadhera, S., Millar, W. J., Second trimester abortions: trends and medical complications, <i>Health reports / Statistics Canada, Canadian Centre for Health Information = Rapports sur la sante / Statistique Canada, Centre canadien d'information sur la sante</i> , 6, 441-454, 1994	Not RCT. Unclear if any medical abortions performed with mifepristone and misoprostol; comparisons not in PICO.
Xia, W., She, S., Lam, T. H., Medical versus surgical abortion methods for pregnancy in China: A cost-minimization analysis, <i>Gynecologic and Obstetric Investigation</i> , 72, 257-263, 2011	Population not in PICO (gestational age up to 49 days)
Yilmaz, N., Kanat-Pektas, M., Kilic, S., Gulerman, C., Medical or surgical abortion and psychiatric outcomes, <i>Journal of Maternal-Fetal and Neonatal Medicine</i> , 23, 541-544, 2010	Population not in PICO (gestational age up to 12 weeks)
Zou, Y, Liang, Y, Wu, Sc, Li, Yp, Yan, L, Mei, L, Zhang, Jq, Tong, L, Study on meta analysis regarding the acceptability of medical abortion compared with surgical abortion (Provisional abstract), <i>Chinese Journal of Epidemiology</i> , 27, 68-71, 2006	Full text not in English

APPENDIX S3



PRISMA 2009 Flow Diagram



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit www.prisma-statement.org.

APPENDIX S4

Evidence tables of included studies:

Study details	Participants	Interventions	Outcomes and Results	Comments
<p>Full citation Grimes,D.A., Smith,M.S., Witham,A.D., Mifepristone and misoprostol versus dilation and evacuation for midtrimester abortion: a pilot randomised controlled trial, BJOG: An International Journal of Obstetrics and Gynaecology, 111, 148-153, 2004</p> <p>Ref Id 117411</p> <p>Country/ies where the study was carried out USA</p> <p>Study type Randomised controlled trial</p> <p>Aim of the study "To test the feasibility of mounting a randomised controlled trial comparing mifepristone– misoprostol versus dilation and evacuation (D&E) for midtrimester abortion."</p>	<p>Sample size N = 18 randomised (47 women eligible, but 29 declined participation as they had a clear preference for abortion method. These 29 patients differed [unclear of this is statistically significantly] from those who were randomised on the following characteristics: They were older, more likely to be white, fewer previous pregnancies, and lower gestational age; only 1 of 11 women with confirmed fetal abnormalities consented to participate, and an additional 3 women with fetal death did not consent to participate)</p> <p>Characteristics Medical: N = 9; Median age (IQR) = 25 (22-27) years; race white/black: N = 1/8; median (IQR) gravidity: 3 (3- 4); median (IQR) parity: 2 (1- 2); median (IQR) prior abortions: 1 (0- 1); median (IQR) gestational age in completed weeks: 18 (17-18).</p> <p>Surgical: N = 9; Median age (IQR) = 26 (24-28) years; race white/black: N = 2/7; median (IQR) gravidity: 3 (3- 5); median (IQR) parity: 2 (1- 2); median (IQR) prior abortions: 1 (0- 2); median (IQR) gestational age in completed weeks: 18 (16-19). One patient went into labour after placement of laminaria and aborted (uneventfully) without receiving D & E; this patient is analysed in this</p>	<p>Medical abortion (Medical): Day 1: Oral mifepristone 200 mg. Day 3 vaginal misoprostol 800 mcg (four tablets); then misoprostol 400 mcg orally every 3 hours (max 4 doses) until abortion occurred. Patients also received prophylactic prochlorperazine and diphenoxylate (against vomiting and diarrhoea), a continuous infusion of morphine using a patient-controlled system, and prophylactic oral oxycycline. Placental removal was undertaken if the placenta failed to pass spontaneously within 2 hours of the fetus.</p> <p>versus</p> <p>Surgical abortion (Surgical): Day 1: Multiple laminaria were placed in the cervix under paracervical anaesthesia with 20 cc of 0.25% bupivacaine. Day 2-3 (Day 2 until July 2002, Day 3 thereafter): D & E performed under light general anaesthesia without intubation was used for each D & E. Patients also received prophylactic oral doxycycline.</p>	<p>Critical outcomes: Incomplete abortion with the need for surgical intervention: Medical: 4/9; Surgical: 1/9</p> <p>Hemorrhage requiring transfusion or ≥ 500ml of blood loss: Not directly reported, but the authors report that no serious adverse events occurred.</p> <p>Patient acceptability (Scale from 1 [very satisfied] to 5 [very dissatisfied]); at discharge; median (IQR): Medical (n = 9): 1 (1-1); Surgical (n = 9): 1 (1- 1). Please note, this outcome appears to be a mix of acceptability and satisfaction</p> <p>Important outcomes: Abortion completed by intended method: Medical: 5/9; Surgical: 8/9</p> <p>Uterine injury (including rupture): Not directly reported, but the authors report that no serious adverse events occurred.</p> <p>Cervical injury requiring repair: Not directly reported, but the authors report that no</p>	<p>Limitations</p> <p>Quality assessment: Risk of bias assessed using Cochrane risk of bias tool</p> <p>Random sequence generation: Low risk; computer-generated list; the person responsible for generating the randomisation list did not take part in enrolment</p> <p>Allocation concealment: Low risk; sequentially numbered opaque sealed envelopes; the person responsible for sealing the envelopes did not take part in enrolment</p> <p>Blinding of participants and personnel: Unblinded; low risk as all reported outcomes are either objective outcomes or only possible by patient knowing what they went through (patient satisfaction/acceptability).</p> <p>Blinding of outcome assessment: Unblinded; low risk as all reported outcomes are either objective outcomes or only possible by patient knowing what they went through (patient satisfaction/acceptability).</p> <p>Attrition: Low risk; ITT analyses done for all outcomes.</p>

Study details	Participants	Interventions	Outcomes and Results	Comments
<p>(p. 148)</p> <p>Study dates January 2002-January 2003</p> <p>Source of funding Not information reported</p>	<p>group.</p> <p>Inclusion criteria Age ≥ 18 years; English speaking; gestational age of 13.9–19.9 weeks (i.e., fetal biparietal diameter of 26–46 mm on ultrasound; also including patients who had experienced a fetal death or had a fetus with congenital anomalies or chromosomal defect.</p> <p>Exclusion criteria Prior caesarean delivery, prior myomectomy; medical conditions listed in package labelling as contraindications to use of mifepristone or misoprostol (e.g., chronic renal failure, asthma); transportation difficulties relating to the abortion visits; patients unwilling to return or to be contacted by telephone or letter two weeks later in follow up.</p>		<p>serious adverse events occurred.</p> <p>Infection reported within 1 month of abortion: Not directly reported, but the authors report that in Medical 3/9 and in Surgical 0/9 had fever (>38° C).</p>	<p>Selective reporting: Low risk</p> <p>Other bias: None reported</p> <p>Other information Study stopped early due to slow recruitment; had planned to recruit 60 women.</p> <p>"Patients receiving care in our abortion clinic are predominantly women of limited financial means, those with medical or social problems, and those with abnormal fetuses." (p. 149)</p>
<p>Full citation Kelly, T., Suddes, J., Howel, D., Hewison, J., Robson, S., Comparing medical versus surgical termination of pregnancy at 13-20 weeks of gestation: A randomised controlled trial, BJOG: An International Journal of Obstetrics and Gynaecology, 117, 1512-1520, 2010</p> <p>Ref Id 801908</p>	<p>Sample size N = 122 (out of 229 eligible; n = 107 refused participation)</p> <p>Characteristics Medical: N = 60; Mean age (SD) = 23.9 (6.3) years; mean gestation (SD) = 14.7 (1.6) weeks; primipara: N = 24; previous TOP: N = 14; previous CS [caesarian?]: N = 3. N = 8 did not receive mToP as they continued with their pregnancy.</p> <p>Surgical: N = 62; Mean age (SD) = 23.5 (5.8) years; mean gestation (SD) = 15.1 (1.9) weeks; primipara: N = 29; previous TOP: N = 21; previous CS [caesarian?]: N = 1. N = 4 did not</p>	<p>Medical abortion (Medical): Day 1: Oral mifepristone 200 mg orally. 36–48 hours later at 0800 hours: Vaginal misoprostol 800 mcg, followed by vaginal or oral 400 mcg misoprostol (depending on level of vaginal bleeding) every 3 hours (max 4 doses). If by 2400 hours the abortion had not occurred, 200 mg oral mifepristone administered, followed by 1 mg vaginal gemeprost 3-hourly from 0800 hours (max 5 doses). Medical abortion was considered to have failed if still no abortion by the following morning at 0800 hours. Surgical abortion was then undertaken. If the placenta was not passed within 4 hours of expulsion of the fetus despite a</p>	<p>Critical outcomes: Incomplete abortion with the need for surgical intervention: Medical: 5/60; Surgical: 1/62</p> <p>Hemorrhage requiring transfusion or ≥ 500ml of blood loss: Medical: 1/60; Surgical: 5/62</p> <p>Patient acceptability (as measured by "Would choose the same method again"); at 2 weeks: Medical: 16/30; Surgical: 26/26 [it should possibly be 36/36 as N = 36 analysed in this group. However, Table 2 lists N = 26]</p>	<p>Limitations</p> <p>Quality assessment: Risk of bias assessed using Cochrane risk of bias tool</p> <p>Random sequence generation: Low risk; computer-generated list; the person responsible for generating the randomisation list did not take part in enrolment</p> <p>Allocation concealment: Low risk; sequentially numbered opaque sealed envelopes; the person responsible for sealing the envelopes did not take part in</p>

Study details	Participants	Interventions	Outcomes and Results	Comments
<p>Country/ies where the study was carried out United Kingdom</p> <p>Study type Randomised controlled trial</p> <p>Aim of the study "To compare the psychological impact, acceptability and clinical effectiveness of medical versus surgical termination of pregnancy (TOP) at 13–20 weeks of gestation." (p. 1512)</p> <p>Study dates May 2000 to February 2004</p> <p>Source of funding University of Newcastle upon Tyne</p>	<p>receive surgical abortion as they continued with their pregnancy.</p> <p>Inclusion criteria Pregnant women requesting and accepted for abortion under clause C of the human Fertilisation and Embryology Act (1990) amendment of the Abortion Act (1967), gestational age 13+0 to 19+6 weeks at the time of abortion; women aged < 16 years also eligible if deemed Fraser competent and had a parent/guardian present and consenting; previous caesarean section was not an exclusion criterion.</p> <p>Exclusion criteria Fetal congenital abnormality; medical disease precluding medical abortion; unable to speak English (<5% of women presenting for abortion)</p>	<p>further dose of prostaglandin (in cases without significant bleeding), it was evacuated surgically. The women also received periabortion antibiotic prophylaxis with doxycycline 100 mg orally twice daily, starting on the day prior to abortion.</p> <p>versus</p> <p>sTOP: Day 1: Priming with Gemeprost 1 mg vaginally 3 and 6 hours prior to sTOP (nulliparous women and multiparous women ≥ 17 weeks of gestation) or with Gemeprost 1 mg vaginally 3 hours prior to sTOP (multiparous women between 13+0 and 16+6 weeks gestation). Vacuum aspiration performed under general anaesthesia with progressive dilation to 13 mm in women with 13+0 to 13+6 weeks gestational age using Hegar graded cervical dilators and vacuum aspiration performed using a 12-mm aspiration curette; or dilation up to 15 mm in women with 14+0 to 14+6 weeks gestational age and vacuum aspiration performed using a 14-mm aspiration curette, with any residual products removed with sponge forceps under ultrasound guidance; or progressive dilation using Hegar graded cervical dilators up to a diameter in mm corresponding to the gestational age in week in women with ≥15+0 weeks gestational age, with the products of conception removed by Sopher's forceps under ultrasound guidance. Routine perioperative uterotonic agents not used; and intravenous oxytocin (5 units) administered in 2 women with persistent post-evacuation bleeding.</p>	<p>Patient acceptability (as measured by "Experience of abortion worse than expected"); at 2 weeks: Medical: 16/30; Surgical: 0/26 [it should possibly be 0/36 as N = 36 analysed in this group. However, Table 2 lists N = 26]</p> <p>Patient satisfaction (as measured by rating of satisfied/not satisfied with information/counselling pre-abortion); at 2 weeks: Medical: satisfied/no satisfied 29/0; Surgical: satisfied/no satisfied 35/1</p> <p>Patient satisfaction (as measured by rating of satisfied/not satisfied with care during abortion); at 2 weeks: Medical: satisfied/no satisfied 29/0; Surgical: satisfied/no satisfied 35/1</p> <p>Patient satisfaction (as measured by rating of satisfied/not satisfied with counselling/support post-abortion); at 2 weeks: Medical: satisfied/no satisfied 28/1; Surgical: satisfied/no satisfied 35/0</p> <p>Important outcomes: Abortion completed by intended method: Medical: 47/52; Surgical: 57/58</p>	<p>enrolment</p> <p>Blinding of participants and personnel: Unblinded; low risk as all reported outcomes are either objective outcomes or only possible by patient knowing what they went through (patient satisfaction/acceptability).</p> <p>Blinding of outcome assessment: Unblinded; low risk as all reported outcomes are either objective outcomes or only possible by patient knowing what they went through (patient satisfaction/acceptability).</p> <p>Attrition: Low risk for all outcomes (ITT analyses done for majority of outcomes) apart from patient satisfaction/acceptability which is at high risk due to ≥ 50% missing data in each group.</p> <p>Selective reporting: Low risk</p> <p>Other bias: None reported</p> <p>Other information Trial registration number: ISRCTN17262711</p>

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		The women also received periabortion antibiotic prophylaxis with doxycycline 100 mg orally twice daily, starting on the day prior to abortion, and metronidazole 1 g rectally at the time of abortion.	<p>Uterine injury (including rupture): Medical: 0/60; Surgical: 0/62</p> <p>Cervical injury requiring repair: Medical: 0/60; Surgical: 1/62</p> <p>Infection reported within 1 month of abortion: Not directly reported, but infection included in the definition of complications in the methods section, so presumably it was looked for, just not observed.</p>	