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Research Article

Comparative Study Between Use of Cerviprime Gel and Mifepristone for Second Trimester Abortions in Tertiary Care Centre

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ABSTRACT

Introduction: Second trimester abortion remains a crucial aspect of reproductive healthcare with the choice of method of abortion significantly influencing the maternal safety and outcomes. Over 42 million abortions are carried out globally each year, with 10-15% of those procedures taking place during the second trimester. Over the last fifty years, the techniques of abortion have undergone remarkable changes. Currently, both cerviprime gel and mifepristone are used for induction of abortion. This study is designed to compare the outcomes of both.
Methods: This is an analytical study conducted in the department of Obstetrics and Gynaecology at SRTR Medical College, Ambajogai. The study was carried out for 1.5 years with a sample size of 100, divided equally between two groups, "Group A" and "Group B." They were administered Mifepristone and Cerviprime gel respectively for induction of abortion and the results were compared.
Results: It was observed that mifepristone significantly reduced induction-abortion interval, required lower oxytocin augmentation and misoprostol dosage. Complete abortion rates were higher in mifepristone group and side effects and complications were lesser.
Conclusion: The findings suggest that mifepristone is more effective and safer than cerviprime gel for second trimester abortions.

Keywords*: Mifepristone, Cerviprime Gel, Second trimester abortion.*

INTRODUCTION

Abortion, defined as the termination of pregnancy before viability, may be spontaneous or induced. Induced abortion is a common medical procedure and can be performed during the first or second trimester. Second-trimester abortions, occurring between 13 and 28 weeks of gestation, constitute 10–15% of all abortions worldwide but are associated with disproportionately higher maternal morbidity and mortality, particularly in low-resource settings.

In India, the Medical Termination of Pregnancy (MTP) Act of 1971 legalized abortion up to 20 weeks of gestation under specified conditions. The MTP (Amendment) Act of 2021 further extended the upper limit to 24 weeks for special categories of women, mandated medical boards for cases of substantial fetal abnormalities, and expanded eligibility under the "failure of contraception" clause to include unmarried women. These legal reforms aim to improve access, safety, and dignity in abortion care.

Globally, unsafe abortions remain a major contributor to maternal mortality, with more than half of second-trimester terminations being unsafe and the majority occurring in developing countries. Over the past five decades, methods of second-trimester abortion have evolved from invasive surgical procedures such as dilatation and curettage, saline instillation, and hysterotomy to safer medical methods involving prostaglandins and oxytocin. Currently, prostaglandin analogues such as misoprostol (PGE1) and cerviprime gel (PGE2) are widely used for cervical ripening and induction of abortion. While cerviprime is effective, its high cost and need for refrigeration limit its use.

Mifepristone, a synthetic antiprogestin, has emerged as a highly effective alternative, enhancing uterine sensitivity to prostaglandins and improving induction outcomes in both first- and second-trimester abortions. Given these developments, the present study was undertaken to compare the efficacy, safety, and outcomes of cerviprime gel versus mifepristone in second-trimester pregnancy termination, with the objective of identifying the more effective and safer regimen for clinical practice.

AIMS AND OBJECTIVES

Aim: To compare the efficacy of mifepristone with cerviprime gel for cervical ripening prior to induction of second-trimester abortion.

Objectives: To evaluate and compare the clinical outcomes of patients in whom either mifepristone or cerviprime gel was used for cervical ripening before induction of second-trimester abortion.

MATERIALS AND METHODS

Study Design and Setting:

This was an analytical comparative study conducted in the Department of Obstetrics and Gynecology at a tertiary care center and Government Medical College. The study was carried out over a period of 1.5 years.

Study Population:

The study included pregnant women requesting second-trimester abortion with legally valid indications as per the Medical Termination of Pregnancy (MTP) Act.

Sample Size:

A total of 100 participants were enrolled and randomly allocated into two groups (50 in each group).

Inclusion Criteria:

- Pregnant women with valid indications for second-trimester abortion as per the MTP Act.
- Willingness to provide informed written consent.

Exclusion Criteria:

- History of previous caesarean section scar.
- Known epilepsy, bronchial asthma, cardiac disease, renal disease, or hepatic disorder.
- Patients unwilling to participate.

Methodology

All participants underwent a detailed history, clinical examination, complete blood count, urine analysis, blood grouping, serological testing, and ultrasonography.

1. Group A (Mifepristone group): Patients received 200 mg of oral mifepristone followed by 200 µg misoprostol administered sublingually every 4 hours.
2. Group B (Cerviprime group): Patients received intracervical cerviprime gel under aseptic precautions, followed by 200 µg misoprostol administered sublingually every 4 hours.

Standard of care was maintained for both the groups.

Progress of abortion was monitored every 12 hours through abdominal and per-vaginal examination. If uterine contractions were inadequate, oxytocin infusion (up to 10 units in 500 mL normal saline) was administered. In cases of inadequate cervical dilation and effacement, Drotin or Buscopan was given.

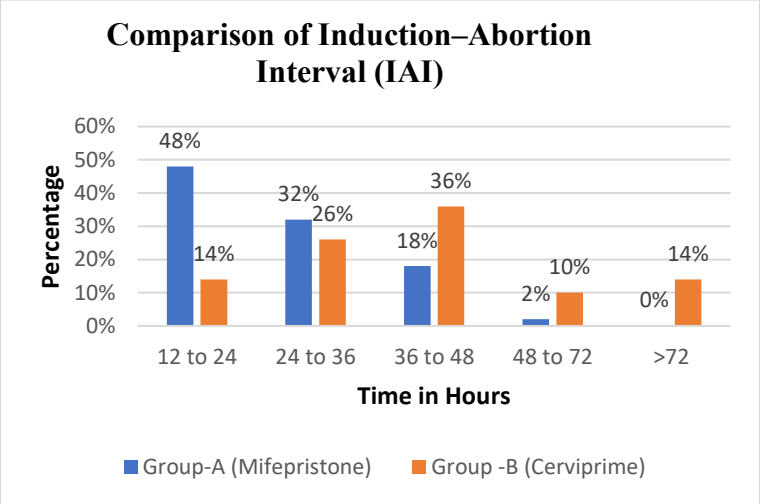
Patients who failed to expel the fetus within 72 hours were classified as treatment failures.

RESULTS

Induction–Abortion Interval (IAI)

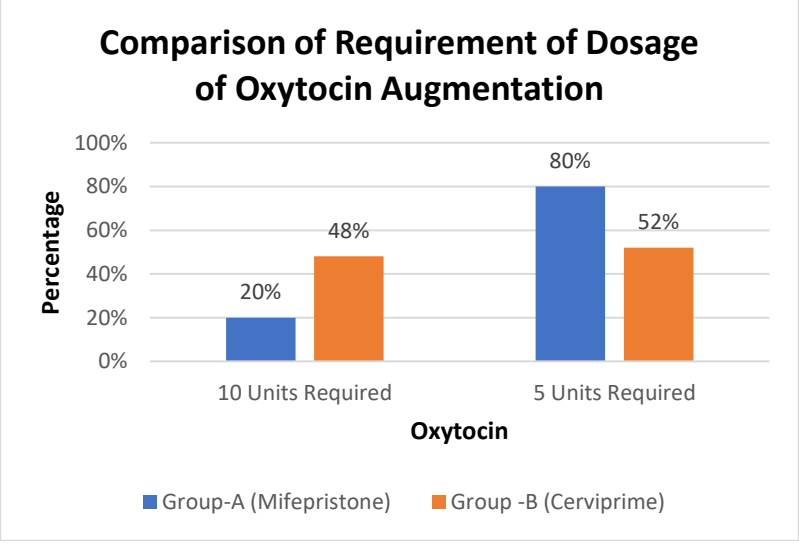
Induction abortion interval	**Group -B (Cerviprime)**	
Time in hours	**No of cases**	**No of cases**
12-24	24	7
24-36	16	13
36-48	9	18
48-72	1	5
>72	0	7
chi-square test	22.30	
P-value	0.000175	
Induction abortion interval	**Group -B (Cerviprime)**	

The induction–abortion interval demonstrated a statistically significant difference between the two groups. In the Mifepristone group (Group A), 48.0% of patients achieved abortion within 12–24 hours compared with only 14.0% in the Cerviprime group (Group B). Furthermore, 32.0% of patients in Group A aborted within 24–36 hours compared to 26.0% in Group B. A longer IAI was observed in Group B, with 36.0% of women requiring 36–48 hours and 10.0% requiring 48–72 hours, whereas only 18.0% and 2.0% of cases in Group A fell within these intervals, respectively. Notably, no patient (0.0%) in Group A required more than 72 hours, while 14.0% of women in Group B did. This difference was statistically significant ($\chi^2 = 22.30$, $p = 0.000175$).



1. **Requirement of Oxytocin Augmentation**

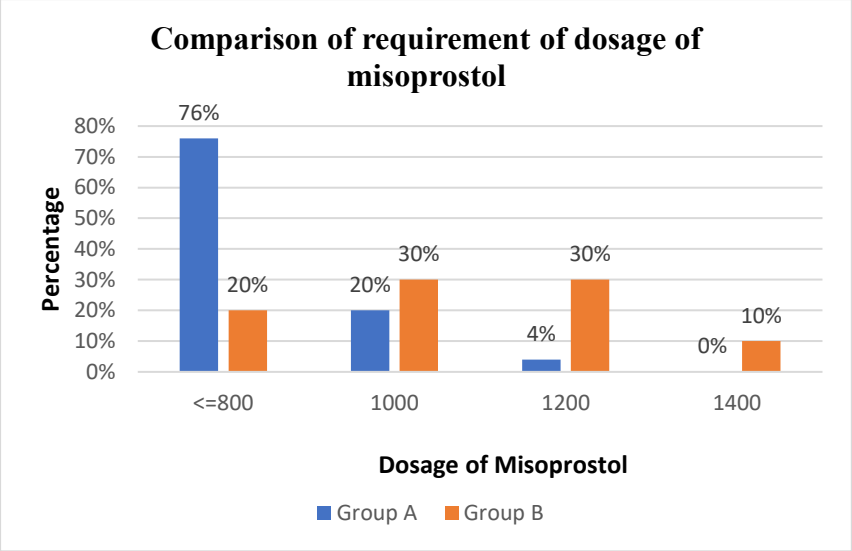
The need for oxytocin augmentation was significantly higher in Group B. Only 20.0% (n = 10) of women in Group A required oxytocin augmentation, compared with 48.0% (n = 24) in Group B. This difference was statistically significant ($\chi^2 = 8.7$, $p = 0.003$), indicating that Mifepristone was associated with a reduced requirement for oxytocin compared with Cerviprime.



Oxytocin	Group-A (Mifepristone)	Group -B (Cerviprime)	Chi-sq.	p-value
	No of cases	No of cases		
10 Units required	10	24	8.7	0.003
5 Unitsrequired	40	26		
Total	**50**	**50**		

2. Misoprostol Dosage Requirement

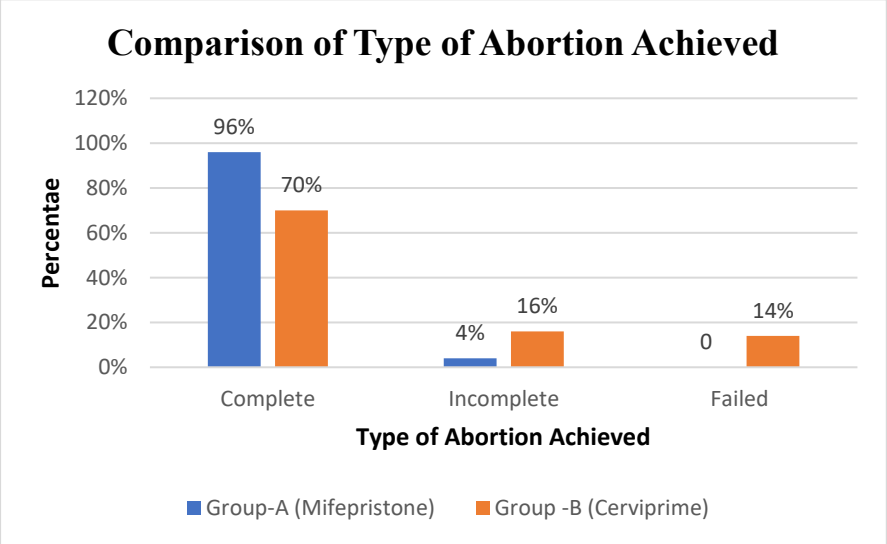
The requirement for higher doses of misoprostol was greater in Group B. In Group A, 76.0% of women were managed with ≤800 µg, and only 20.0% required 1000 µg. None required 1400 µg, and only 4.0% required 1200 µg. In contrast, only 20.0% of women in Group B were managed with ≤800 µg, while 30.0% required 1000 µg, 30.0% required 1200 µg, and 20.0% required 1400 µg. This difference was highly significant (χ^2 = 37.3, p< 0.0001), demonstrating that Mifepristone substantially reduced the misoprostol requirement compared to Cerviprime.



Dosage of Misoprostol(µg)	Group-A (Mifepristone)	Group -B (Cerviprime)	Chi-sq	p-value
	No of cases	No of cases		
≤800	38	10	37.3	<0.0001
1000	10	15		
1200	2	15		
1400	0	10		
Total	**50**	**50**		

3. **Type of Abortion Achieved**

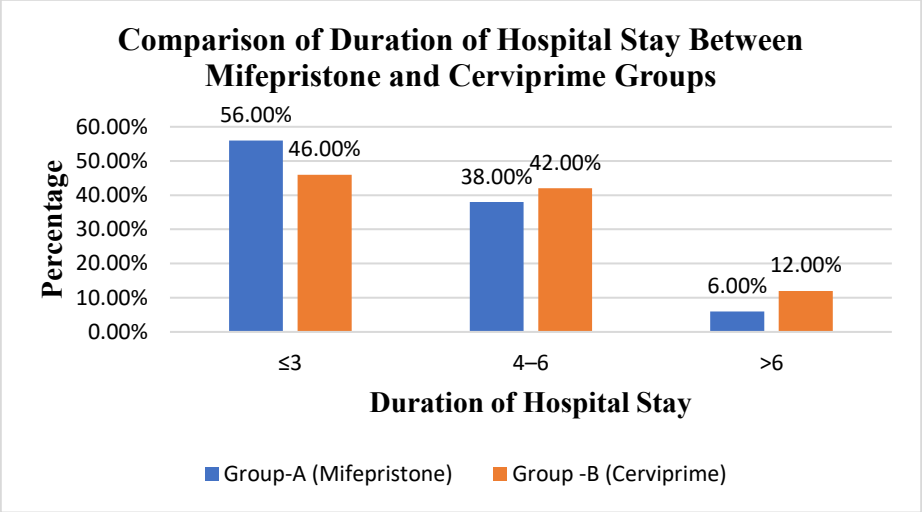
Complete abortion was achieved in 96.0% (n = 48) of women in Group A compared to 70.0% (n = 35) in Group B. Incomplete abortion occurred in 4.0% (n = 2) of Group A and 16.0% (n = 8) of Group B. Failed abortion was observed in 14.0% (n = 7) of Group B, whereas no such cases were reported in Group A. This difference was statistically significant (χ^2 = 12.64, p = 0.0018), indicating that Mifepristone was associated with a higher rate of complete abortion.



Type of Abortion	Group-A (Mifepristone)	Group -B(Cerviprime)	Chi-sq	p-value
	No of cases	No of cases		
Complete	48	35	12.64	0.0018
Incomplete	2	8		
Failed	0	7		
Total	50	50		

4. Duration of Hospital Stay

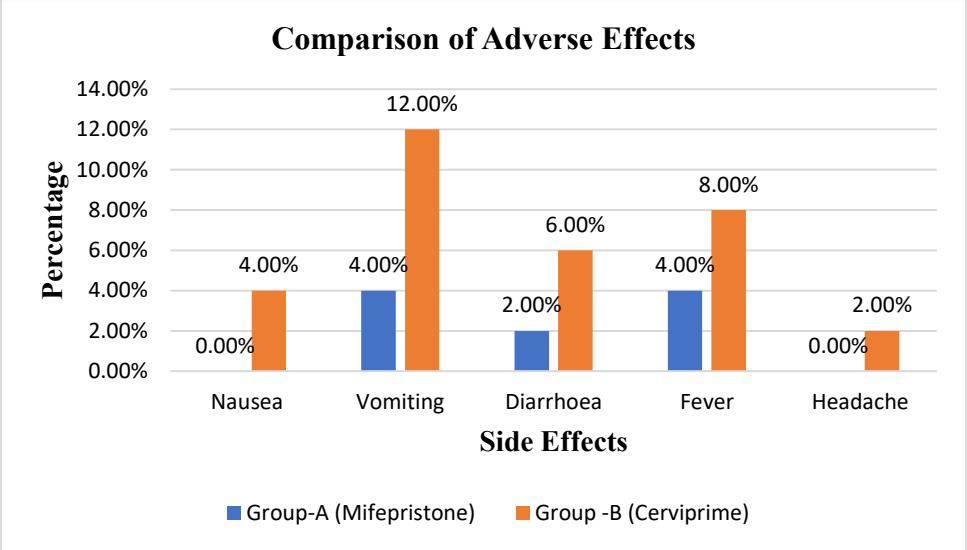
The distribution of hospital stay showed no statistically significant difference between the groups. In Group A, 56.0% of patients were discharged within 3 days, compared to 46.0% in Group B. A hospital stay of 4–6 days was observed in 38.0% of Group A and 42.0% of Group B. Longer stays (>6 days) occurred in 6.0% of Group A and 12.0% of Group B. The difference was not significant ($\chi^2 = 1.27$, $p = 0.86$).



Duration of HospitalStay (Days)	Group-A (Mifepristone)	Group -B (Cerviprime)	Chi-sq	p-value
	No of cases	No of cases		
≤3	28	19	1.27	0.86
4–6	19	24		
>6	3	7		
Total	**50**	**50**		

5. Adverse Effects

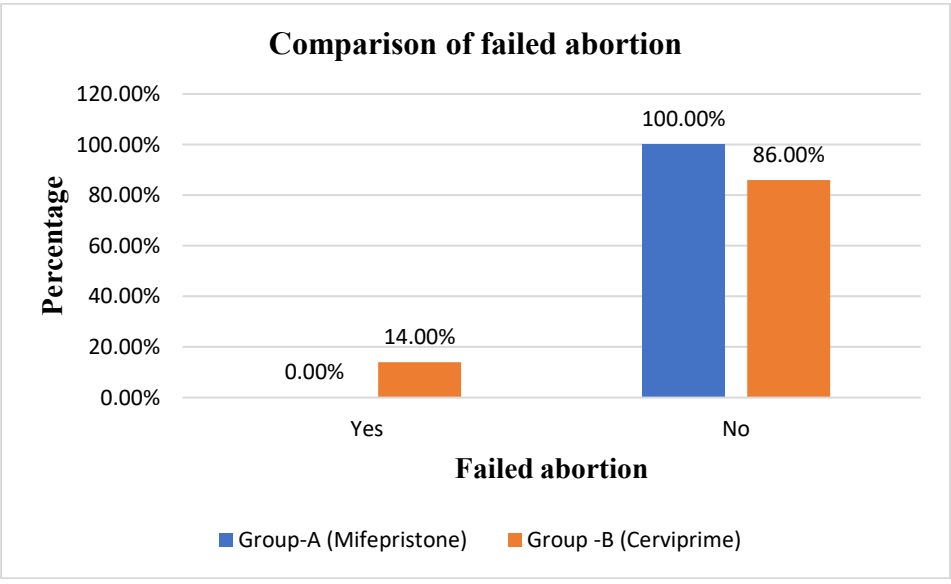
Adverse effects were more frequent in the Cerviprime group. Overall, 44.0% of women in Group B reported at least one side effect compared with 10.0% in Group A. Vomiting was the most common, occurring in 4.0% of Group A and 12.0% of Group B. Diarrhea and fever were reported in 2.0% and 4.0% of Group A, compared with 6.0% and 8.0% of Group B, respectively. Nausea and headache were not observed in Group A but were present in 4.0% and 2.0% of Group B. These differences, however, were not statistically significant ($\chi^2 = 1.27$, $p = 0.86$).



Side Effects	Group-A (Mifepristone)	Group -B (Cerviprime)	Chi-sq	p-value
	No of cases	No of cases		
Nausea	0	2	1.27	0.86
Vomiting	2	5		
Diarrhoea	1	3		
Fever	2	4		
Headache	0	1		
Total	**5**	**15**		

6. Surgical Intervention (Hysterotomy)

None of the women in the Mifepristone group required surgical intervention, whereas 14.0% (n = 7) of women in the Cerviprime group underwent hysterotomy. This difference was statistically significant ($\chi^2 = 5.53$, $p = 0.019$), suggesting a higher likelihood of surgical intervention in the Cerviprime group.



Failedabortion	Group-A (Mifepristone)	Group -B (Cerviprime)	Chi-sq	p-value
	No of cases	No of cases		
Yes	0	7	7.53	0.006
No	50	43		
Total	**50**	**50**		

DISCUSSION

The present study compared the efficacy and safety of Mifepristone and Cerviprime gel for induction of second-trimester abortion in a tertiary care setting. The results clearly demonstrated that Mifepristone was superior to Cerviprime in terms of induction–abortion interval, requirement of additional interventions, abortion outcomes, and safety profile.

In the present study, the mean induction–abortion interval was significantly shorter in the Mifepristone group compared to the Cerviprime group. Nearly half of the women in the Mifepristone group aborted within 12–24 hours, whereas the majority of women in the Cerviprime group required 36 hours or more. These findings are consistent with previous studies which reported that Mifepristone pretreatment significantly reduces the time to abortion by increasing uterine sensitivity to prostaglandins and enhancing cervical ripening **(1,2)**.

The requirement for oxytocin augmentation and higher misoprostol doses was also significantly lower in the Mifepristone group. In our study, 76% of women in the Mifepristone group were successfully managed with ≤800 µg of misoprostol, while the Cerviprime group frequently required higher doses (1200–1400 µg). These observations corroborate findings by **Wildschut et al. (3)** and **Tang et al. (4)**, who demonstrated that Mifepristone pretreatment reduces prostaglandin requirement, thereby decreasing maternal discomfort, hospital burden, and drug-related side effects.

With respect to abortion outcomes, the Mifepristone group showed a higher rate of complete abortion (96%) compared with the Cerviprime group (70%). Incomplete and failed abortions were significantly higher among Cerviprime users, with 14% requiring surgical intervention in the form of hysterotomy, whereas no such cases occurred in the Mifepristone group. These results highlight the clinical advantage of Mifepristone in minimizing surgical interventions, consistent with international evidence supporting Mifepristone–Misoprostol regimens as the gold standard for second-trimester abortion **(5,6)**.

Although adverse effects were more common in the Cerviprime group, the differences were not statistically significant. Vomiting, diarrhea, and fever were the most frequently reported adverse events. The overall incidence of side effects was nevertheless higher in the Cerviprime group (44%) compared to Mifepristone (10%), suggesting a better tolerability profile for Mifepristone. Similar observations have been reported by **Hamoda et al. (7)** and **Fiala &Gemzell-Danielsson (8)**, emphasizing the favorable safety profile of Mifepristone.

Interestingly, duration of hospital stay did not differ significantly between the two groups, although women in the Cerviprime group tended to have longer admissions due to prolonged induction and higher rates of surgical intervention. This parameter, while not statistically significant, still underscores the practical advantage of Mifepristone in reducing resource utilization in healthcare settings.

Overall, the findings of this study strongly support the use of Mifepristone as a more effective and safer agent than Cerviprime gel for induction of second-trimester abortion. By reducing induction time, limiting the need for oxytocin and misoprostol, and minimizing surgical interventions, Mifepristone not only improves patient comfort but also decreases healthcare burden.

CONCLUSION

This study demonstrates that Mifepristone is significantly more effective and safer than Cerviprime gel for induction of second-trimester abortion. Mifepristone was associated with a shorter induction–abortion interval, reduced requirement for oxytocin and misoprostol, higher rates of complete abortion, and fewer surgical interventions and adverse effects. While both agents were effective, the superior efficacy and tolerability of Mifepristone highlight its potential as the preferred regimen in clinical practice for second-trimester pregnancy termination.

REFERENCES

1. Ashok PW, Templeton A, Wagaarachchi PT, Flett GM. Midtrimester medical termination of pregnancy: a review of 1002 consecutive cases. Contraception. 2002;66(6):393–9.
2. Lalitkumar S, Bygdeman M, Gemzell-Danielsson K. Mid-trimester induced abortion: a review of methods and clinical outcomes. Contraception. 2007;75(4):249–63.

3. Wildschut H, Both MI, Medema S, Thomee E, Wildhagen MF, Kapp N. Medical methods for mid-trimester termination of pregnancy. Cochrane Database Syst Rev. 2011;(1):CD005216.
4. Tang OS, Gemzell-Danielsson K, Ho PC. Misoprostol: pharmacokinetic profiles, effects on the uterus and side-effects. Int J Gynaecol Obstet. 2007;99 Suppl 2:S160–7.
5. World Health Organization. Safe abortion: technical and policy guidance for health systems. 2nd ed. Geneva: WHO; 2012.
6. National Institute for Health and Care Excellence (NICE). Abortion care [NG140]. London: NICE; 2019.
7. Hamoda H, Ashok PW, Flett GM, Templeton A. Medical abortion at 9–13 weeks' gestation: a review of 1076 consecutive cases. Contraception. 2005;71(5):327–32.
8. Fiala C, Gemzell-Danielsson K. Review of medical abortion using mifepristone in combination with a prostaglandin analogue. Contraception. 2006;74(1):66–86.