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ORIGINAL ARTICLE

# Second Trimester Abortion with Vaginal Misoprostol: Is There Any Advantage with Prior Mifepristone Priming? A Comparative Study

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## ABSTRACT

**Objective:** Second trimester medical termination of pregnancy (MTP) can be done by surgical or nonsurgical methods or by various combinations of the two. Every method has its advantages and disadvantages. An ideal method would be one which was safe, quick and 100% effective, inexpensive and without any immediate or late side-effects. However, in the absence of such, various methods in synergistic combinations have been tried to come close to an ideal method. The successes of medical method now appear to be useful in MTP even in second trimester of pregnancy. Our objective is to investigate the effectiveness of only vaginal misoprostol and compare with oral mifepristone plus vaginal misoprostol in second-trimester induction abortions (≥12 and ≤20 weeks).

**Methods:** The patients are selected after careful examination and necessary investigations were divided into group A (n = 62) which received 400 µg of vaginal misoprostol followed by 200 µg vaginal misoprostol 4 hourly till expulsion of fetus or a maximum dose of 2000 µg and group B (n = 60) which received 200 mg of oral mifepristone followed 48 hours later by vaginal misoprostol as in group A. Main outcomes measured were efficacy, blood loss, induction-abortion interval and complication.

**Results:** The present study showed that the both methods were effective in 2nd trimester MTP. Average blood loss was lesser in group B (131.66 ml) compared to group A (150 ml). Induction abortion interval was shorter in group B (6.62 hours) than in group A (12.19 hours). Ninty percent of group B and 80.7% of group A had no complications. Success rate was higher in group B.

**Conclusion:** Therefore, in our study, pretreatment mifepristone followed by misoprostol was found to be a very effective regimen for 2nd trimester abortion with lesser complications and higher efficacy.


**Keywords:** 2nd trimester, Misoprostol, Mifepristone, Induction-abortion interval.

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## INTRODUCTION

According to the MTP Act, medical termination of pregnancy (MTP) in India is allowed up to 20 weeks. However, there is no ideal method for MTP between 13 and 20 weeks resulting more unsafe abortion during this period. Worldwide 42 million legal abortion[1] and 10 to 12 million clandestine abortion takes place every year,[2] of which 10 to 15% is performed in second trimester. In India alone, 6.7 million induced abortions occur annually, of which late abortions constitute 10.7 to 15%.[3] Though second trimester abortion accounts for a small percentage of all induced abortion, it is associated with high rate of morbidity. Two-thirds of major abortion related complications and half of abortion related mortality occur in pregnancies terminated after 13 weeks of gestation.[4] Previously various methods, medical or surgical, either alone or in combination were used to perform MTP in second trimester with their complications. However, there is a constant search going on for an ideal method. For second trimester medical termination of pregnancy, the optimal regimen is still under development but is likely to be characterized by a short induction abortion interval (I-A-I), devoid of any serious side effect, high acceptability, easy to perform and cost-effective. Medical method in second trimester MTP is found to be effective. Our objective is to investigate the effectiveness of only vaginal misoprostol and compare with oral mifepristone plus vaginal misoprostol in second-trimester induction abortions (≥ 12 and ≤ 20 weeks).

## MATERIALS AND METHODS

The study was conducted at Gynecology and Obstetrics Department of Medical College and Hospital, Kolkata, from 1st January 2010 to 31st June 2011. It was a prospective randomized study. 122 women ≥ 12 and ≤ 20 weeks of gestation with a valid legal indication for termination of pregnancy as per MTP Act were taken for the study. In all cases, written informed consent was taken and duration of pregnancy was confirmed by history, clinical and sonological examination. Women with anemia, bleeding disorders, suspected ectopic and molar pregnancy, pelvic infection and congenital malformation of uterus were excluded from the study. Cases such selected were randomly divided into two groups: Group A (n = 62) and group B (n = 60). Randomization was done using a table of random numbers. Group A received 400 µg vaginal misoprostol followed 4 hourly by 200 µg till expulsion of fetus or a maximum dose of 2000 µg. Group B received 200 mg of oral mifepristone followed 48 hours later by vaginal misoprostol as in group A (midnight doses were omitted in both groups). Vital signs were monitored every 4 hours. Fever, chest pain, breathing difficulty, vomiting and diarrhea were recorded. Blood loss was quantified by measuring cup. The parameters studied were induction abortion interval, completeness of procedure, failure of abortion, side effects, and cost per procedure. Failure of procedure was defined as failed expulsion of the fetus at 48 hours or the occurrence of systemic adverse

signs and symptoms severe enough to preclude further use of the drug. The induction abortion interval was defined as time from intake of 1st dose of misoprostol to abortion. Hemorrhage was defined as an estimated blood loss exceeding 500 ml or a need for blood transfusion. Fever was defined as a temperature of 38°C or more occurring 24 hours or more after pregnancy termination. Check curettage was done when required. Statistical analysis was carried out using Epi Info statistical software. $p < 0.05$ was considered as significant.

## OBSERVATIONS

A total of 122 patients were divided into group A (n = 62) who received vaginal misoprostal and group B (n = 60) which received oral mifepristone plus oral misoprostal. Both the groups had similar parity and gestational age distribution (Table 1). Mean requirement of misoprostol in group B was 613.33 µg whereas in group A was 870.96 µg (Table 2). So requirement of misoprostol was much less in group A and this was statistically significant (p-value = 0.004). Induction abortion interval (Table 3) was also significantly less in group B compared to group A (6.61 hours *vs* 12.19 hours). Average blood loss was 150 ml in group A whereas it was 131.66 ml in group B (Table 4). Group B had lesser complications and adverse effects than group A. Ninety percent of group B and 80.70% of group A had no complications (Table 5). There was nine cases (14.51%) incomplete abortion in group A and 6 (10%) cases in group B, surgical evacuation done in these cases. It is to be noted that the success rate of group B was 100% and that of group A was 96.77% (Table 6).

**Table 1:** Comparison of gestational age and parity

| | *Gestational age (days)* | | *Parity* | |
|---|---|---|---|---|
| | *Mean* | *SD* | *Mean* | *SD* |
| Group A | 113.3548 | 16.6564 | 2.5161 | 1.2061 |
| Group B | 111.5333 | 15.0991 | 2.4000 | 1.3025 |

**Table 2:** Comparison of total dose of misoprostol (µg) required

| *Determinants* | *Group A (n = 62)* | *Group B (n = 60)* |
|---|---|---|
| Mean | 870.9677 | 613.333 |
| SD | 250.5907 | 156.9831 |

**Table 3:** Comparison of induction abortion interval (hours)

| *Determinants* | *Group A (n = 62)* | *Group B (n = 60)* |
|---|---|---|
| Mean | 12.1917 | 6.6167 |
| SD | 3.9614 | 2.3413 |

**Table 4:** Comparison of blood loss (ml)

| *Determinants* | *Group A (n = 62)* | *Group B (n = 60)* |
|---|---|---|
| Mean | 150 | 131.6667 |
| SD | 105.0451 | 62.2610 |

**Table 6:** Comparison of success and failure rates

| | *Group A (n = 62)* | *Group B (n = 60)* |
|---|---|---|
| No. of failure cases | 1 | 0 |
| Failure rate | 3.23% | 0% |
| No. of successful cases | 61 | 60 |
| Success rate | 96.77% | 100% |

## DISCUSSION

Abortion is defined as termination of pregnancy by any means before the fetus is viable. In our study, a total of 122 patients of gestation ≥12 and ≤ 20 weeks were taken and divided into two groups—group A (n = 62) received vaginal misoprostol only whereas group B (n = 60) received oral mifepristone followed by vaginal misoprostol.

In our study, the success rate of group A was 96.77% which is comparable to the findings of Tang et al, 2004[5] and Bhattacharya et al, 2006.[6]

Success rate in group B was 100% which is similar to the findings of Mittal et al 2009[7] who reported a success rate of 99.3%.

The present study showed that total amount of misoprostal required was significantly less in group B (613.33 ± 156.98 µg) compared to group A (870.96 ± 250.59 µg).

Similar findings were reported by Bartly et al, 2002;[8] Ashok et al, 2004[9] and Tang et al, 2005.[10]

In our study induction abortion interval was shorter in group A is 12.19 ± 3.96 hours in comparison to group B 6.61 ± 2.34 hours. Tang et al[10] also found the median duration 8.7 hours of treatment in the mifepristone/misoprostol group.

Average blood loss was also lesser in group B (131.66 ± 62.26 ml) compared to group A (150 ± 105.04 ml). Ninty percent of group B and 80.7% of group A patients had no complications. There were no cases of rupture uterus in either group.

The cost of therapy was higher in group B (₹ 890.40) compared to group A (₹ 390.65).

In our study, it is evident that group B-mifepristone and misoprostol regimen had shorter induction interval, lesser complications and higher success rate.

## CONCLUSION

Medical abortion in the second trimester using the combination of mifepristone and misoprostol appeared to have the highest efficacy and shortest abortion time interval.[11] Our study also has the same opinion that the combination of 200 mg

**Table 5:** Comparison of complications (%)

| *Adverse effects* | *Nil* | *Fever and vomiting* | *Diarrhea* | *Fever* | *Vomiting* | *Rupture* |
|---|---|---|---|---|---|---|
| Group A | 80.7 | 3.2 | 3.2 | 9.7 | 3.2 | 0 |
| Group B | 90 | 0 | 0 | 3.3 | 6.7 | 0 |

mifepristone and vaginally administered misoprostol is a safe, effective and noninvasive regimen for termination of pregnancy between 12 and 20 weeks. More stress should be given on efficacy and one should not compromise efficacy for the cost.

## REFERENCES

1. Sedgh G, Henshaw S, Singh S, Ahman E, Shah IH. Induced abortion: Estimated rates and trends worldwide. The Lancet 2007:307(9595):1338-45.
2. Padubidri VG, Daftary SN. Shaw's textbook of gynaecology (13th ed), New Delhi, Elsevier 2004:241.
3. Patel, Lauva. J Obs Gyn India 2006;56(6):522.
4. World Health Organization. Medical methods for termination of pregnancy, World Health Organization, Geneva 1997,871.
5. Tang OS, Lau WN, Chan CC, Ho PC. A prospective randomized comparison of sublingual and vaginal misoprostol in second trimester termination of pregnancy. BJOG 2004;111:1001-05.
6. Bhattacharya SK, Mukherji J, et al. Two regimens of vaginal misoprostol in second trimester termination of pregnancy: A prospective randomized trial. Acta Obset Gynaecol Scand 2006; 85(12):1458-62.
7. Mittal S, Gupta N. Adding mifepristone to medical abortion regimen. Strategies and guidelines for safe second trimester abortion in India. 2009;81-85.
8. Bartley J, Baird DT. A randomized study of misoprostol and gemeprostol in combination with mifepristone for induction of abortion in the 2nd trimester of pregnancy. BJOG: An International Journal of Obstet and Gynaecol 2002;109(11): 1290-94.
9. Ashok PW, Templeton A, Wagaarachchi PT, Flett GM. Midtrimester medical termination of pregnancy: A review of 1002 consecutive cases. Contraception 2004;69:51-58.
10. Tang OS, Chan CC, Kan AS, Ho PC. A prospective randomized comparison of sublingual and oral misoprostal when combined with mifepristone for medical abortion at 12 to 20 weeks gestation. Hum Reprod 2005;20:3062-66.
11. Wildschut H, Both MI, Medema S, Thomee E, Wildhagen MF, Kapp N. Medical methods for mid-trimester termination of pregnancy. Cochrane Reviews 2011 Issue 8, Copyright© 2011 The Cochrane Collaboration. Published by John Wiley and Sons, Ltd.

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