



Original Research Article

Sublingual v/s vaginal misoprostol for second trimester termination of pregnancy: A comparative study

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ABSTRACT

Background: Misoprostol is a recommended drug for medical termination of pregnancy in both first and second trimester of pregnancy. Considering the various routes and different doses of administration of the drug available, the aim of the study was to compare the efficacy of misoprostol by sublingual and vaginal route for second trimester MTP.

Materials and Methods: This prospective comparative study was conducted on seventy women who were randomly assigned into two groups. Thirty-five women received 400mcg of misoprostol at every 4 hours interval for a maximum of 5 doses by sublingual route and 35 women received the same dose by vaginal route. The efficacy of misoprostol (expulsion of products of conception) and induction-abortion interval were studied in the two groups. Instrumental evacuation was done for incomplete abortion. Oxytocin augmentation was given for cases who failed to abort after the last dose of misoprostol.

Results: Majority of women (71%) in both the groups required 3 to 4 doses of misoprostol for abortion. Misoprostol was effective in 74% women in the sublingual group and in 71% women in the vaginal group. The mean induction-abortion interval was 18.69 h and 18.43 h in sublingual and vaginal group respectively. No statistically significant difference was found between the two groups in terms of efficacy of misoprostol in achieving complete abortion.

Conclusion: Both sublingual and vaginal routes of administration of misoprostol appear to be safe and equally effective for second trimester MTP.

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1. Introduction

World Health Organisation defines abortion as pregnancy termination prior to 20 weeks of gestation or a fetus born weighing <500g. Despite this, definitions vary widely according to state laws. MTP is performed according to the laws of any country. Though the Indian MTP act has liberalised the laws for legal abortions, the access to contraception services should help bring down the rate for unintended pregnancies. On the other hand, the availability of ultrasonographic services for detection of fetal anomalies tends to increase the abortion rate.

There are medical and surgical methods of providing abortion care. Medical method is the preferred mode as it

does not include late surgical complications like cervical insufficiency and anaesthesia related complications. Most of the women around the world prefer the medical method due to its cost-effectiveness and the response rate to the treatment.^{1,2} Because of the potential complications, it is advisable that second trimester terminations take place in a health-care facility where blood transfusion and emergency services are available.²

Misoprostol, a prostaglandin E1 analogue is widely used for induction of abortion and labor. The drug is administered through different routes and in various doses. It can be given oral, vaginal or sublingual. Common side effects of the drug are nausea, vomiting, chills, fever and diarrhoea.^{2,3} Finding out the effective and safe method and dose for the second trimester MTP is essential.

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The study was conducted to compare the efficacy of misoprostol through sublingual and vaginal route of administration for second trimester abortion. The induction-abortion interval was also studied, requirement of further interventions were also studied.

2. Materials and Methods

The study was a prospective comparative study conducted at the Government Women and Child Hospital affiliated to the institution. Seventy women fulfilling inclusion criteria were recruited for the study. All had valid indications as per MTP act. Women with a history of medical disorders and drug allergy, multiple pregnancies, more than one previous caesarean delivery were excluded from the study. Detailed history, physical examination, ultrasonography and blood investigations were done for all women in the study. Informed written consent obtained from all.

Seventy women were divided in two groups, there were 35 women in each sublingual and vaginal group. Each group received 400mcg misoprostol every fourth hourly for a maximum of five doses (2000mcg). If women failed to abort after four hours of the last dose of misoprostol, oxytocin augmentation was given. The number of doses of misoprostol used, the induction-abortion interval, need of instrumental evacuation were all studied. Statistical analysis was done using Chi-square test and Fisher's test.

3. Results

The mean age in the sublingual group and vaginal group were 26.7 and 28.8 years respectively and the mean gestational age was 15.3 weeks and 14.5 weeks respectively. No statistically significant difference was found between the two groups in terms of parity and previous abortions (Table 1).

Table 1: Patient characteristics

	Sublingual (n=35)	Vaginal (n=35)
Mean age (yrs)	26.7	28.8
Parity (%)		
Primi	10 (28.6)	11 (31.4)
Multi	25 (71.4)	24 (68.6)
Mean gestation (SD)	15.3 (3.42)	14.5 (2.68)
Previous abortions (%)		
Yes	08 (22.9)	06 (17.1)
No	27 (77.1)	29 (82.9)

shows that almost one third of the women aborted within 12 - 16hrs with use of three doses of misoprostol in both the groups. Almost 90% of women aborted within 24 hrs in both the groups. The mean induction-abortion interval in the sublingual group was 18.69 hrs and 18.43 hrs in

the vaginal group. No statistical significant difference was found regarding induction-abortion interval between the sublingual and vaginal group.

Majority of women in the sublingual group (71%) and vaginal group (71%) required 3-4 doses of misoprostol. The mean number of doses of misoprostol was 3.97 and 3.94 in the sublingual and vaginal group respectively. The mean dose of misoprostol in the sublingual group was 1589mcg and 1577mcg in the vaginal group. In the sublingual group 74% of women had complete abortion and 8% required instrumental evacuation. In the vaginal group 71% of them had complete abortion and 5% needed instrumental evacuation. Statistically no significant difference was found in the efficacy of the drug. Misoprostol was almost equally effective by either sublingual or vaginal route in the study.

Table 2: Efficacy of misoprostol

	Sublingual (n=35)	Vaginal (n=35)
Efficacy (%)*		
Complete abortion	26 (74.3)	25 (71.4)
Incomplete abortion	09 (25.7)	10 (28.6)
Induction - abortion interval**		
12-16 hrs	11 (31.4)	12 (34.3)
16-20 hrs	14 (40)	13 (37.1)
20-24 hrs	06 (17.2)	05 (14.3)
> 24 hrs	04 (11.4)	05 (14.3)
Number of misoprostol doses		
3	11 (31.4)	12 (34.3)
4	14 (40)	13 (37.1)
5	10 (28.6)	10 (28.6)
Mean dose of misoprostol(mcg)	1589	1577

* p value - 0.7

**p value - 0.9

4. Discussion

FIGO recommends use of misoprostol alone at a dose of 400mcg at every three hours interval till the expulsion of products of conception between 13 and 26 weeks of gestation.⁴ With the use of misoprostol MTP can be effectively performed. It also recommends use of misoprostol in pregnancy with previous uterine scar.

Majority of women in our study were multigravidae. Niinimaki et al.,⁵ studied that increased parity may reduce the induction-abortion interval. Bhandekar et al.,⁶ did a study comparing oral versus vaginal route of misoprostol administration. They also used 400mcg misoprostol every fourth hourly for a maximum of five doses, as in our study. They found a significant difference in the induction-abortion interval between the two groups. Women in the vaginal group took less time (18.574 hr) compared to the oral group (19.59 hr). They also found that the mean number of doses

of misoprostol (3.93) used was less in the vaginal group.

Tanha et al. found no difference between sublingual and vaginal group in terms of efficacy of misoprostol and also in the mean dose of misoprostol used (1340mcg).⁷ Our study also shows similar results between sublingual and vaginal groups but the mean dose in our study was approx 1583mcg. Kaur et al.,⁸ showed that sublingual route was more effective than vaginal route for cervical ripening in first trimester abortions. Ganguly et al. studied that failure rate was highest with the oral route and least with sublingual route. They used 400mcg misoprostol every 6th hourly for a maximum of 4 doses. They compared oral, sublingual and vaginal routes of misoprostol. Induction-abortion interval was least with sublingual route.⁹ Our study also had no significant difference in induction-abortion interval between the sublingual and vaginal groups as in their study. Milani et al. found that the abortion interval was shorter with the sublingual route and the patients preferred the sublingual route over the vaginal route.¹⁰ Farhadifar et al. concluded in their double blind control study that the efficacy of oral and vaginal misoprostol was similar. Higher curettage rate was seen in the vaginal group.¹¹ From our study we conclude that misoprostol can be used by either sublingual or vaginal route for effective second trimester pregnancy termination. Both routes are almost equally effective and safe to be used in the second trimester MTP.

5. Source of Funding

None.

6. Conflict of Interest

None.

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