

# An Experience of Vaginal Misoprostol Versus Sublingual use in Cervical Ripening before Surgical Evacuation

SAADIA KHANAM<sup>1</sup>, BUSHRA MERAJ<sup>2</sup>, UZMA ASIF<sup>3</sup>, NASIRA SABIHA DAWOOD<sup>4</sup>

<sup>1</sup>Assistant Professor of Obstetrics & Gynaecology, Islam Medical College Sialkot.

<sup>2,4</sup>Professor of Obstetrics & Gynaecology, Islam Medical College Sialkot.

<sup>3</sup>Associate Professor of Obstetrics & Gynaecology, Islam Medical College Sialkot.

Correspondence to Dr. Saadia Khanam

## ABSTRACT

**Aim:** To compare the effectiveness of misoprostol as a cervical ripening agent in first trimester miscarriage through different routes of administration before surgical evacuation.

**Design:** This was a randomized controlled trial

**Place of study:** Islam Medical College and affiliated hospitals.

**Methods:** Total 100 patients undergoing surgical evacuation for missed miscarriage between 7-13 weeks of gestation were included in the study. In each group 50 patients were taken. Misoprostol was given through sublingual and vaginal route after dividing the patients into two groups. The women were randomized to either 400 microgram vaginal misoprostol or 400 microgram sublingual misoprostol 3-4 hours prior to surgical evacuation. Main outcome measures studied were preoperative cervical dilatation and side effects of misoprostol

**Results:** Cervical ripening effect and mean time taken for cervical dilatation were more favorable among sublingual route than vaginal route. Vaginal bleeding was observed more in vaginal route group than in sublingual route. Abdominal cramps headache were most commonly observed side effects in both the group, where as nausea and vomiting were more seen in sublingual route group.

**Conclusion:** Sublingual administration of misoprostol is better than vaginal administration for cervical ripening before surgical evacuation in patients with missed miscarriage

**Keywords:** Effectiveness, Misoprostol, Vaginal, Sublingual Cervical, Ripening Miscarriage

---

## INTRODUCTION

Miscarriage in first trimester is one of the common complications of pregnancy<sup>1</sup>. The incidence of miscarriage is 10-20%<sup>2</sup>. Miscarriage can be divided into missed miscarriage, if there is no fetal cardiac activity or there is anembryonic pregnancy and cervical os is closed. The 2<sup>nd</sup> type's incomplete miscarriage where products of conception are partially expelled out. If whole of the conceptus is expelled, then it is called complete miscarriage. If cervical os is open and whole of pregnancy is inside the uterus, then it is known as an inevitable miscarriage<sup>2</sup>.

In the past, dilatation and curettage was used commonly as treatment for missed miscarriage. But recently medical treatment options are also available in the form of mifepristone and misoprostol<sup>3</sup>

Misoprostol is a prostaglandin E1 analogue. It was firstly used for prevention of gastric ulceration in those patients who were using Non-Steroidal anti-inflammatory drugs. (4) In 1997, misoprostol was used for the first time for cervical priming in Norwegian women due to availability of a large number of trials favouring the drug for cervical priming as it is highly effective and simple to use.

Since then misoprostol has been widely used for the propose of cervical ripening before surgical dilatation and evacuation and various studies have shown that it is readily absorbed by sublingual and vaginal route as well<sup>6</sup>.

The complication rate of surgical evacuation (e.g., cervical injury, uterine perforation and excessive hemorrhage) is reduced if misoprostol is used for cervical priming<sup>7</sup>.

The objective if he study was to compare the effectiveness and tolerability of misoprostol as cervical

ripening agent in first trimester Miscarriage through different routes of administration before surgical evacuation.

## METHODS

This was a randomized trial conducted at Islam Medical College and Affiliated hospitals. A total of 100 patients undergoing surgical evacuation for missed miscarriage between 7-13 weeks of gestation. 50 patients were taken in each group. Patients selection was based on following inclusion criteria. Patients with missed miscarriage at 7-13 weeks of gestation were included in the study. However patients with molar and ectopic pregnancy were excluded from the study. Also the patients with incomplete miscarriage were excluded. Patients already having gastrointestinal symptoms were also excluded from study.

**Main Outcome Measures:** Preoperative cervical dilatation and side effects of misoprostol

**Data collection:** Both women (patients) and gynecologist were aware of the treatment allocated. After the women were randomized, all pts with confirmed diagnoses of missed miscarriage up to 13wks were divided randomly in two groups, (one group reviewed 400mg Misoprostol vaginally and the other group 400mg misoprostol sublingually 3-4 hrs prior to planned surgical evacuation. History relevant to prostaglandin sensitively was taken. All basic investigations were performed. All these women were kept under observation before surgical procedure. For assessment of side effects the women were asked to completed questionnaire with help of junior doctor

**Data Analysis:** Data entry and analysis was done by using SPSS version 20. Qualitative variables were presented by

Received on 24-04-2019

Accepted on 14-07-2019

using frequency and percentage. Chi square test was applied to compared bleeding status and complications in both treatment groups. A p-value  $\leq 0.05$  was taken as significant.

## RESULTS

A total of 100 patients were included in the study. The maternal age range was 19-38 yrs (mean 28.5yrs). The gestational age in the study group ranged from 6-13 weeks (means gestational age being 9.5 weeks). Cervical dilatation occurred in both groups (10mm or more) so further force was not required to dilate the cervix. The time taken for cervical dilatation was a bit longer in vaginal route groups as compared to S/L group. However average time was 2-4 hours in both groups. Bleeding standard with in ½ - 1 hour and bleeding was mild in about 50ml in majority of cases ( ) in group A. Abdominal cramps and headache most common in both groups, Nausea +GI disturbance was more with sublingual route.

Table-1: Obstetrics Profile of patients

Parameters	Sublingual route	Vaginal route
PG	47%	52%
Multigravida	53%	48%

Table 2: Time taken for cervical dilatation (10mm or more)

Time	Vaginal route	S/L route groups
1 hr	3	2
1.5 hr	15	10
2.0 hr	20	18
2.5 hr	5	7
3.0 hr	3	4
3.5 hr	2	5
4.0 hr	2	4

Table 3: Bleeding in Treatment Groups

Bleeding	Vaginal Group	Sublingual Group	Total
10-20ml	10(20%)	7(14%)	17
10-20ml	12(24%)	20(40%)	32
10-20ml	20(40%)	20(40%)	40
10-20ml	5(10%)	2(4%)	7
10-20ml	3(6%)	1(2%)	4
Total	50	50	100

**Chi-Square Test=4.815, p-value=0.306**

Table 4: Side Effects experienced by Patients in Treatment Groups

Symptoms	Vaginal Group	Sublingual Group	p-value*
Abdominal Pain	30(60%)	23(46%)	0.160
Backache	10(20%)	8(16%)	0.602
Fever	8(16%)	10(20%)	0.602
Nausea	6(12%)	10(20%)	0.276
Headache	12(24%)	14(28%)	0.648
No symptoms	0(0%)	0(0%)	-

\*: Chi Square test was applied to calculate the p-value

## DISCUSSION

The cervical priming is shown to facilitate any trans cervical procedure and optimal cervical ripening for surgical evacuation of products of conception with a minimum of side effects. It has been proved by different studies that misoprostol is an effective and tolerable drug for the purpose of cervical priming. It has significant effect on initial

cervical dilatation and therefore the need for further cervical dilatation is reduced thus reducing the operating time when compared with the placebo<sup>8</sup>.

Various studies have been performed comparing efficacy and side effects of different routes of administration of misoprostol. In most of the studies misoprostol has been evaluated by oral and vaginal route<sup>9,10</sup>.

Vaginal route was found to be more effective due to its slow but constant absorption. However, oral route was more acceptable as it avoids the discomfort and pain associated with the vaginal route<sup>11</sup>. A few studies have shown the sublingual route as a better option for misoprostol administration as compared to the vaginal route<sup>12</sup>.

Our study observed that cervical ripening effect and mean time taken by misoprostol for cervical ripening were favorable among sublingual followed by vaginal route. Our results were consistent with observation by sexena et al and tang et al<sup>13,14</sup>.

Saxena et al found a higher incidence of intraoperative pain in placebo group requiring paracervical block in almost all patients but in misoprostol group there was no need of analgesia<sup>13</sup>. We gave intra venous sedation to all patients.

Vaginal bleeding in our study was more in vaginal route than in sublingual route, which is comparable with Praveen Set al<sup>15</sup>.

Abdominal cramps and headache were observed in both groups. Whereas nausea and vomiting were more common in sublingual route. These side effects were also observed in the study by tang et al and Mathur M, Rani J and Vijayshree where lower abdominal pain was present more in sublingual group<sup>16</sup>.

Whereas loose motions, nausea and vomiting were also seen more in sublingual route than vaginal route in study by Parveen s et al<sup>15</sup>.

## CONCLUSION

Sublingual misoprostol is better than vaginal misoprostol in cervical ripening before surgical evacuation in patients with first trimester missed miscarriage as it reduces blood loss, operative time and complication rate. So, it is an effective and safer alternative to mechanical cervical dilatation.

## REFERENCES

1. Regan L. & Rai R. Epidemiology and the medical causes of miscarriage. Best pract Res Cl Ob. 14,839-54 (2000)
2. Sarawat L, Ashok P W, Mathur M. Medical management of miscarriage. The obstetrician and Gynecologists. 2014;16(2)
3. American College of Obstetricians and Gynecologists'. Medical management of first –trimester abortion. ACOG practice bulletin no. 134. Obstet Gynaecol. 123,676-92 (2014)
4. Herabutya Y. & Prasertsawat. P.O. Misoprostol in the management of missed abortions. Int J Gynecol Obstet. 56,263-6 (1997)
5. Watkinson G., Hopkins A. & Akbar F.A. The therapeutic of misoprostol in peptic ulcer disease. Postgrad Med J. 64,60-77 (1988)

6. International Federation of Gynecology and Obstetrics. Misoprostol recommended dosages, 2012.
7. Saav 1, Kopp Kallner H, Fialac Gemzell- Damielsson K. Sublingual versus vaginal misoprostol for cervical dilatation 1 or 3 hours prior to surgical abortion: a double blinded RST. Hum repord. 2015 Jun 30 (6): 1314-22.doi 1093/humrep/dev071
8. Singh K, Fong YF, Prasad RN, Dong F. Vaginal misoprostol for preabortion cervical priming: is there an optimal evacuation time interval? Br J Obstet Gynaecol. 1999;106(3):266-69.
9. Ngai SW, Tang OS, Lao T, Ho PC, Ma HK.Oral misoprostol versus placebo for cervical dilatation before vacuum aspiration in first trimester pregnancy. Hum Reprod.1995;10(5):1220-22.
10. Cakir L, Dilbaz B, Caliskan E, Dede FS,Dilbaz S, Haberal A. Comparison of oral and vaginal misoprostol for cervical ripening before manual vacuum aspiration of first trimester pregnancy under local anesthesia: a randomizes placebo-study. Contraception. 2005;71:337-42
11. Maclsaac L, Grossman D, Balistreri E, Darney P.A randomized controlled trial of Laminaria tent, oral misoprostol and vaginal misoprostol before abortion. Obstet Gynecol. 1999;93 (5): 766-70
12. Hamoda H, Ashok PW, Flett GM, Templeton A. A randomized controlled comparison of sublingual and vaginal administration of misoprostol for cervical priming before first-trimester surgical abortion. Am J Obstet Gynecol. 2004; 190 (1): 55-59
13. Sexena P, Sarda N, SalhanS, Nandan D,A randomized comparison between sublingual, oral and vaginal route of misoprostol for pre-abortion cervical ripening in first – trimester pregnancy termination under anaesthesia. Aust N Z J Obstet Gynaecol
14. Tang OS, Mok KH, Ho PC.A randomized study comparing the use of sublingual to vaigal misoprostol for pre- operative priming prior to surgical termination of pregnancy in first trimester. Hum reprod 2004;19:1101-4.
15. Parveen S, Khateeb ZA, Mufti SM et al comparison of sublingual, vaginal, and oral misoprostol in cervical ripening for first trimester abortion. Indian journal of pharmacology 2011;43 (2): 172-175
16. Mathur M, Rani J and Vijayshsee. Role of sublingual misoprostol for cervical priming in first trimester medical termination of pregnancy. J clin Diagn Res. 2014; 8 (8): OC 01-OC 03.