Results of Sublingual Vs. Vaginal Misoprostol in the Management of Early Miscarriage

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Abstract

Objective: To ascertain the results of sublingual and vaginal misoprostol in the treatment of early miscarriage. Background: Roughly 12% of pregnancies end in clinical miscarriage. In particular, medical evacuation of a missed abortion is appropriate for women who do not want to be taken to the hospital or have surgery performed under general anesthesia. It is a safe, effective, and economical alternative to surgical uterine evacuation. **Study Design:** randomized control trail. **Place And Duration**: This study was conducted in Liaquat University of Medical and Health Sciences Jamshoro from December 2022 to December 2023. **Methodology:** This study was conducted on 70 – 70 patients in each group that is vaginal misoprostol and sublingual misoprostol groups. Patients fulfilling the criteria for early miscarriage were included however, all the patients with history of ectopic pregnancy, patients having intrauterine contraceptive device, or having renal, cardiac or hepatic disease were excluded. The data was entered and analyzed using Microsoft excel. **Results:** In the vaginal misoprostol group, the mean age of the patients was 22.3±4.1 years, whereas in the sublingual misoprostol group, it was 23.7±3.8 years. There were 47(67.14%) successful cases in vaginal misoprostol group while 52 (74.29%) in sublingual misoprostol group. However, 23(32.86%) and 18(25.71%) cases were unsuccessful in vaginal misoprostol group and sublingual misoprostol group respectively **Conclusion:** Compared to the vaginal route the sublingual is numerical more successfully however there in absence statistical significance it was concluded that both the routes are nearly similar in terms of efficacy.

Keywords: Early Miscarriage, Misoprostol, Outcomes, Vaginal, Sublingual.

Introduction

Roughly 12% of pregnancies end in clinical miscarriage [1]. Dilatation and curettage has been the standard treatment for missed miscarriages for the past 50 years. This procedure is typically carried out in an operating room, which significantly raises the cost [2]. When treating an early-trimester miscarriage, medical therapy and expectant mothers can save a significant amount of money compared to standard surgery [3].

The best moment to treat expectant mothers can be unclear, though, and some women may experience mental anguish from carrying a nonviable pregnancy for an extended period of time [4]. A successful, secure, and economical substitute for surgical uterine evacuation in cases of missed abortions is medical evacuation, which is especially appropriate for women who do not want to be hospitalized or have surgery performed under general anesthesia [5].

It has been discovered that providing medical care for missed abortions reduces the need for D&C, saves costs, and improves patient satisfaction [6, 7]. It was discovered that the systemic bioavailability of oral misoprostol was three times lower than that of vaginal delivery [8].

Vaginal misoprostol has been found to have a number of drawbacks, such as uneven absorption

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that can be remedied by dissolving the tablets in water, partial absorption even hours after administration, and discomfort experienced by women after vaginal administration[9–11].

In our area, medical therapy for missed abortions is less common due to doubts regarding its efficacy. In a similar way, although growing in acceptance worldwide, the sublingual route of administration is less prevalent for the same reasons. The purpose of this study, according to the authors, was to settle doubts regarding the effectiveness of sublingual misoprostol delivery as a financially feasible approach, given the high likelihood of early miscarriage and the clinical burden on hospitals in our context.

Metodology

After seeking the ethical approval from the hospital administration, this randomized control trail study was conducted on 70 – 70 patients in each group that is vaginal misoprostol and sublingual misoprostol group at the department of Gyn and Obs. We included all those patients in our study who fulfilled the inclusion criteria of early miscarriage however, all the patients with history of ectopic pregnancy, patients having intrauterine contraceptive device, or having renal, cardiac or hepatic disease were excluded from the study. We obtained the informed consent from all the participants. Further, all the patients were investigated from blood sugar levels, blood grouping, CBC and screening for Hepatitis B and C antigen and antibodies respectively.

Data Collection Procedure

Every patient was randomly assigned to one of two groups: The initial dose of 800 micrograms was administered to the vaginal misoprostol group, and then 400 micrograms were given again at 4-hour intervals. The first dose of 600 micrograms of sublingual misoprostol was administered to the patients, who were instructed to hold their saliva in their mouths until it was absorbed. Subsequently, 400 micrograms were tested four hours apart.

We monitored the cervical status and vaginal blood loss. Patient's vitals were maintained effectively. An emergency surgical dilatation and curettage was on standby for every patients who reported incomplete miscarriage or heavy bleeding. For pain relief, injection tramadol was used. The data was entered and analyzed using Microsoft excel. The quantitative data was shown as mean and standard deviation, while the qualitative data was provided as frequency and percentage.

Results

There were 140 patients in our study, with 70 people in each group. In the sublingual misoprostol group, the mean age of the patients was 23.7±3.8 years, whereas in the vaginal misoprostol group, it was 22.3±4.1 years. In the vaginal misoprostol group, the mean gestational age of the patients was 7.6±0.9, whereas in the sublingual misoprostol group, it was 2.9±0.8. (As shown in Table I)

There were 47(67.14%) successful cases in vaginal misoprostol group while 52 (74.29%) in sublingual misoprostol group. However, 23(32.86%) and 18(25.71%) cases additionally needed dilatation and curettage in vaginal misoprostol group and sublingual misoprostol group respectively. (As shown in Table II)

Table I: The Socio-Demographic Characteristics of Patients Included in the Study.

Characteristics	Vaginal Misoprostol n=70	Sublingual Misoprostol n=70	p-value
	Mean ±SD	Mean ±SD	
Age (years)	22.3±4.1	23.7±3.8	0.22
Parity	2.1±1.1	2.9±0.8	0.34
Gestational age (Weeks)	7.6±0.9	8.5±1.2	0.09

Table II Outcome of Misoprostol (Vaginal with Sublingual)in Early Miscarriage.

Outcome	Misoprostol given Vaginally		Misoprostol given sublingually		Total	
	n=70	%	n=70	%	n=140	%
Successful	47	67.14	52	74.29	99	70.71
cases which required Dilatation and curettage	23	32.86	18	25.71	41	29.29

Discussion

Misoprostol is a potent uterotonic agent that is stable at room temperature and much less expensive, which makes it an economical choice for our setting with limited resources and a high ambient temperature [12].

In the current investigation, the average age of patients in the vaginal misoprostol group was 22.3±4.1, whereas the sublingual misoprostol group had a mean age of 23.7±3.8. In the vaginal misoprostol group, the mean gestational age of the patients was 7.6±0.9, whereas in the sublingual misoprostol group, it was 2.9±0.8.

There were 47(67.14%) successful cases in vaginal misoprostol group while 52 (74.29%) in sublingual misoprostol group. However, 23(32.86%) and 18(25.71%) cases additionally needed dilatation and curettage in vaginal misoprostol group and sublingual misoprostol group respectively. In line with our findings, a research conducted in Quetta Pakistan also reported nearly similar findings [13].

The results of the study are in line with a Bahawalpur study that reported 66.7% success in the vaginal group and 73.3% success in the sublingual group [14]. It is not as comparable, though, to comparable trials conducted in China and India [15], which used 600 µgm of sublingual and vaginal misoprostol, respectively, and reported overall success rates of 87.5% and 86%.

The higher dosage of 600 ugm of misoprostol used in

the trials may be the cause of this higher success rate. Sublingual misoprostol is linked to more frequent diarrhea, although it is just as effective as vaginal misoprostol in inducing a complete miscarriage, according to the Cochrane Systematic Review. When misoprostol is taken sublingually, its higher peak concentration results in more frequent side effects [16].

Conclusion

We concluded that compared to the vaginal route the sublingual is numerical more successfully however there in absence statistical significance we conclude that both the routes are nearly similar in terms of efficacy therefore patients can use either of the methods depending upon their comfort and convenience.

Funding Source

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Etical Approval

It was taken

Conflict of Interest

None

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