Original Article

Comparative Study of Oral versus Vaginal Misoprostol in Management of Missed Abortion

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ABSTRACT:

Introduction: *Missed abortion is a complication of pregnancy, which is usually evacuated surgically. But now it seems that medical methods such as oral/vaginal misoprostol are quite effective in expulsion of product of conception. The present study was done to compare the effectiveness of oral versus vaginal misoprostol in missed abortion.* ***Methods:*** *A total of 60 patients with missed abortion were studied in Begum Khaleda Zia Medical College and Shaheed Shurawardy Hospital, Dhaka, from May 2008 to December 2008. Among 60 patients, 30 patients were given oral misoprostol and another 30 patients were given vaginal misoprostol; selection was done randomly using two different colored cards in sealed envelopes.* ***Results:*** *Patients of oral misoprostol group needed mean dose of 2.33 ± 0.71 tablets i.e. about 400 µg of misoprostol, whereas patients of vaginal misoprostol group needed mean dose of 2.26 ± 0.78 tablets i.e. approximate 400 µg of misoprostol, resulting in spontaneous expulsion in 53.3% in oral group and 60% in vaginal misoprostol group. Mean medication to expulsion time was 9.26 ± 2.69 hours in oral group and 9.73 ± 1.91 hours in vaginal group. There is no significant difference in effectiveness between oral and vaginal route of administration of misoprostol. However, a large number of patients (33-40%) needed surgical evacuation due to incomplete expulsion of product of conception and about 7% patient needed surgical evacuation for failed expulsion.* ***Conclusion:*** *From the result of this study it is suggested that oral or vaginal misoprostol may be used as first option for the treatment of missed abortion after proper counseling about the failure rate and side effect.*

Keywords*: Misoprostol, Missed abortion.*

(The Insight 2020; 3(1): 27-32)

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INTRODUCTION:

Missed abortion may be defined as a condition in which the embryo or foetus dies in utero before the age of viability, but the products of conception are retained. The word "missed" refers to the missing uterine forces, which have failed to expel the non-viable products of conception. More than 50% of human pregnancies maybe lost[1], although in only about 15% of this perceived as miscarriage[2], with lower abdominal cramps and uterine bleeding being the presenting symptoms of threatened and inevitable abortion.

In Bangladesh, approximately half of the admissions in gynecological units are for complication of abortion[3]. In 1992-94, abortion related deaths were found to be nearly 15% in Bangladesh[4]. In another study, it was seen that mortality due to abortion accounted for 1/3rd of pregnancy related deaths[5]. In one study, it was seen that 50.78% of acute morbidity was due to abortion in women of reproductive age group[6]. The standard treatment of either incomplete or missed abortions used to be surgical evacuation of the uterus. This method may be followed by several complications, such as excessive bleeding, pelvic infection, cervical injury and uterine perforation. To minimize these complications expectant management or medical treatment are becoming reasonable alternatives[7, 8].

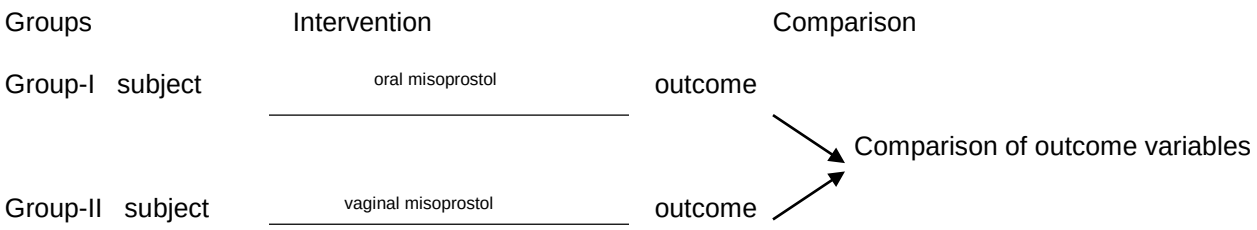
Misoprostol is a synthetic analogue of natural prostaglandin E1. Misoprostol produces a dose related inhibitory of gastric acid and pepsin secretion and enhances mucosal resistance to injury. It is an effective antiulcer agent and also has oxytocic properties (i.e. it leads to uterine contraction and ripening of the cervix)[9]. The administration of mifepristone is usually oral, but different prostaglandins may be given in different routes: parenteral, oral or local (intravaginal)[10]. It has been found that the vaginal administration of misoprostol may be more effective than the oral route[11].

This prospective study is planned to evaluate the effectiveness of oral misoprostol versus vaginal misoprostol in facilitating spontaneous complete abortion in women with missed abortion.

METHODS AND MATERILS:

This prospective randomized clinical trial was taken in patients of missed abortion admitted in department of obstetrics and gynaecology of Begum Khleda Zia Medical College and Shaheed Suhrawardy Hospital from May 2008 to December 2008. A total 60 patients (30 patients in each group) of missed abortion was included. For data collection a predesigned data collection sheet was used for each patient. Detailed history of the patient with particular attention to medication was done, medication-expulsion interval, post medication complication, need for blood transfusion, post medication hospital stays and total cost was recorded in these data collection sheet.

Groups:



Group-I: All patients of missed abortion who received oral administration of misoprostol.

Group-II: All patients of missed abortion who had vaginal administration of misoprostol for the same indication during same time span.

RESULTS:

Table- 1. Category of age of the study patients (n=60).

Age	Study group		Total	P value[#]
	Oral Misoprostol	Vaginal Misoprostol		
< 20 years	2 (6.7%)	4 (13.3%)	6 (10%)	0.67
20-25 years	12 (40%)	14 (46.7%)	26 (43.3%)	0.79
26-30 years	14 (46.7%)	8 (26.7%)	22 (36.7%)	0.18
31-35 years	2 (6.7%)	2 (6.7%)	4 (6.7%)	0.60
36-40 years	0 (0.0%)	2 (6.7%)	2 (3.3%)	0.49
Total	30 (100%)	30 (100%)	60 (100%)	

[#]Z-test

Majority of the patients belonged to age group 20-30 years.

Table- 2. Distribution of study patients according to the size of uterus (n=60).

Size of Uterus	Study group		Total	P value[#]
	Oral Misoprostol	Vaginal Misoprostol		
6-10 wks	20 (66.7%)	18 (60%)	38 (63.33%)	0.59
>10 wks	10 (33.3%)	12 (40%)	22 (36.67%)	
Total	30 (100%)	30 (100%)	60 (100%)	

[#]χ^2 test

Table-3. Mean distribution of cases by dose of misoprostol (n=60).

Dose (No. of tablets)	Oral Misoprostol		Vaginal Misoprostol		P value[#]
	Mean	±SD	Mean	±SD	
	2.33	±0.71	2.26	±0.78	0.73

[#]Students 't' test

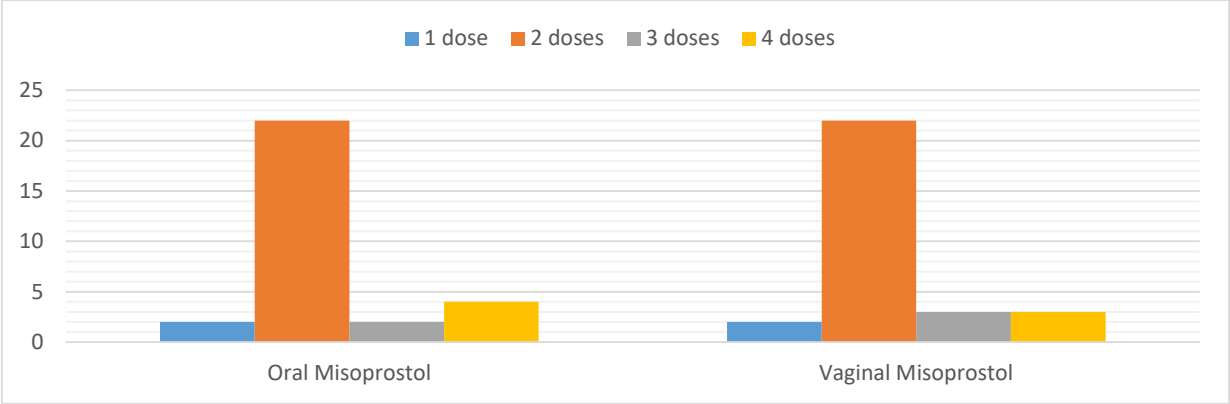


Fig-1. Number of doses of Misoprostol given to study groups (n=60).

Table- 4. Side effect of Misoprostol by study groups (n=60).

Side effect	Study group		Total	P value[#]
	Oral Misoprostol	Vaginal Misoprostol		
Nausea	26 (32.5%)	8 (22.22%)	34 (29.31%)	0.36
Diarrhoea	20 (25%)	6 (16.66%)	26 (22.41%)	0.45
Fever	16 (20%)	12 (33.33%)	28 (24.13%)	0.18
Shivering	12 (15%)	6 (16.66%)	18 (15.51%)	0.96
Vomiting	6 (7.5%)	4 (11.11%)	36 (31.03%)	0.49

[#]Z-test

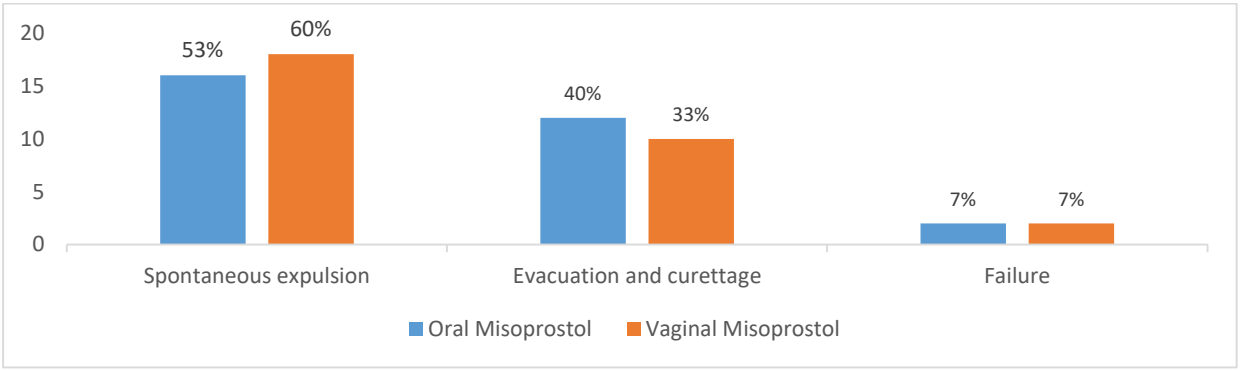


Fig-2. Outcome of the study patients.

Majority of the patients 16 (53.3%) had spontaneous expulsion among oral misoprostol (Group-I) and 18 (60%) had spontaneous expulsion of vaginal misoprostol (Group-II). Vaginal misoprostol seems to be more effective than oral misoprostol but difference is not statistically significant.

DISCUSSION:

Missed abortion is a common gynecological problem. It is better to evacuate the uterus without delay. The presence of a non-viable pregnancy inside the uterus is upsetting to the mother and there is a risk of coagulation defect if a dead fetus is retained for several weeks. The main outcome measures examined in this study were the efficacy and safety of vaginal and oral administration of misoprostol in the medical management of missed abortion.

The mean age and parity were almost similar in both groups. The basic demographic characteristics of both vaginal and oral misoprostol groups were similar. Mean dose requirement was similar in oral and vaginal group. In the present study patients of oral misoprostol group needed mean dose of 2.33 ± 0.71 tablets i.e. about 400 µg of misoprostol, where patients of vaginal misoprostol group needed mean dose of 2.26 ± 0.78 tablets i.e. approximately 400 µg of misoprostol, resulting in spontaneous expulsion in 53.3% in oral group and 60% in vaginal misoprostol group. Mean medication to expulsion time was 9.26 ± 2.69 hours in oral group and 9.73 ± 1.91 hours in vaginal group.

Various studies suggested various oral and vaginal doses of misoprostol. In the "Misoprostol Dosage guideline for Obstetrics and Gynaecology"[12] mentioned 800 µg of misoprostol every 24 hours for 2 doses for missed abortion of 4-12weeks gestation either vaginal or sublingual which was supported by others[15,16].

Based on a review of the published literature, a single dose of 800 µg misoprostol may be offered as an effective, safe and acceptable alternative to the traditional surgical treatment for the indication. Alternatively, 600 µg misoprostol can be administered sublingually[17].

Ipas 2004, suggested 800 µg misoprostol vaginally up to 2 doses 24 hours apart resulting in spontaneous expulsion in 80-89% of cases, 400 µg every 48 hours up to 3 doses with 83% expulsion rate and orally 400 µg every 4 hours up to 3 doses with 51% expulsion rate.[15,16,17]

In this study side effects were almost similar in both the groups. Nausea was complained by 32.5% of oral misoprostol and 22.2% of vaginal misoprostol group. Similarly, other side effects (i.e. Shivering, Fever, Diarrhea) did not differ between oral and vaginal group significantly.

CONCLUSION:

From the present study it is evident that medical management of missed abortion using oral and vaginal misoprostol are quite effective as a treatment option and acceptable to the patients. There is no significant difference in effectiveness between oral and vaginal route of administration of misoprostol. However, a large number of patients (33-40%) needed surgical evacuation due to incomplete expulsion of product of conception and about 7% patient needed surgical evacuation for failed expulsion. In addition, there are some side effects though minor and short lasting.

From the result of the present study and as suggested in most of the literature, oral or vaginal misoprostol may be used as first option for the treatment of missed abortion after proper counseling about the failure rate and side effect. Large randomized control trails may further clarify the issues related to the use of oral/vaginal misoprostol as first line treatment for missed abortion.

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