

## Original paper

# Oral Misoprostol Versus Vaginal Surgical Evacuation of First Trimester Incomplete Abortion; A comparative Study

Falah Abdul Hade Muhi<sup>1</sup>, Haitham F. Hamzha<sup>2</sup>

<sup>1</sup>Alhindiya Hospital, Department of Obstetrics & Gynecology, Alhindiya-Kerbela

<sup>2</sup>Alhindiya Hospital, Department of Radiology, Alhindiya- Kerbela

## Abstract

**Background:** Vaginal surgical evacuation of retained products of conception was the main stay of treatment for a long time for patients with first trimester incomplete abortion. Misoprostol as a thermo stable prostaglandin E1 analogue has been previously tested in the management of incomplete miscarriage in different regimens and setting. Overall results indicate efficacy, effectiveness and acceptability in most of these studies.

**Objectives:** To assess the effectiveness and acceptability of using oral misoprostol for management of first trimester spontaneous incomplete abortion as an alternative to direct vaginal surgical evacuation.

**Methods:** This is a comparative study performed on 84 patients with first trimester incomplete abortion between 6 -12 weeks of gestation requesting medical management .They were divided into two groups; group (1) received misoprostol tablet 200 µg [misotac ,SIGMA] two tablets every 4 h for a maximum of four doses while group (2) underwent surgical vaginal evacuation directly under general anesthesia.

**Results:** In 100% of cases , misoprostol was successful in 79% (p= 0.0006). The overall satisfaction was slightly higher in the surgical group but almost equal percentage of both groups mentioned that they will recommend the method to a friend. No serious side effects or complications were reported in misoprostol group. The incidence of excessive post-abortive bleeding was more in the misoprostol group than the surgical evacuation group (p=0.336). Also endometrial thickness using ultrasonography was significantly thicker in the misoprostol group than group (2) [p=0.0071].

**Conclusion:** Although vaginal surgical evacuation is more effective than misoprostol in solving the problem still medical treatment is effective and acceptable especially when surgical management is not available or risky or patients refuse to do surgical management.

**Key words:** First trimester abortion, misoprostol, incomplete abortion.

## Introduction

Approximately 11-15% of pregnancies end in spontaneous first –trimester miscarriage<sup>(1)</sup>. Vaginal surgical evacuation of retained products of conception (RPOC) was the main stay of treatment for a long time to reduce complications such as infection and unscheduled hemorrhage. However, surgical management may be complicated with infection, uterine perforation or bowel damage<sup>(2)</sup>. Expectant management

for incomplete abortion in the first trimester after use of misoprostol or after spontaneous abortion may be practical and feasible, although it may increase anxiety associated with the impending abortion<sup>(3,4)</sup>. The available Cochrane systematic review evidence suggests that expectant care as well as medical treatment with misoprostol are acceptable alternative to routine vaginal surgical evacuation<sup>(5)</sup> Misoprostol as a thermo stable prostaglandin E1 analogue has been

\*For Correspondence: E-Mail amer\_muhi@yahoo.com

previously tested in the management of incomplete miscarriage in different regimens and setting <sup>(6-8)</sup>. Overall results indicate efficacy, effectiveness and acceptability in the most of these studies .Some other studies used sublingual route instead of the oral or vaginal for uterine evacuation after early pregnancy failure <sup>(9-12)</sup>

### **Aim Of Study**

To assess the effectiveness and acceptability of using oral misoprostol for management of first trimester spontaneous incomplete abortion as alternative to direct vaginal surgical evacuation in our setting.

### **Patients and Methods**

This is a prospective comparative study performed in Alhindya hospital, Karbala, after agreement of obstetrics department of hospital during the period from January 2011 to April 2013. This study included 84 pregnant women between 8 and 12 week cases requesting medical management for spontaneous first trimester incomplete abortion. Patients who are hemodynamic unstable, septic abortion, fever, bronchial asthma or known hypersensitive to misoprostol were excluded. All patients signed a written informed consent before recruitment into the study.

The diagnosis of incomplete abortion was confirmed by trans abdomen ultrasonography check for the presences or absence of retained products of conception. The eligible patient were divided into 2 groups, group (1) received misoprostol (200 µg tablets) 2 tablets every 4 h for a maximum of 4 doses orally, While patients in group (2) directly underwent vaginal surgical evacuation under general anesthesia. All patients were followed up for the first 24 h for abdomen pain scores ,vital sign presences of excessive vaginal bleeding defined as the presence of vaginal bleeding more than menstrual blood with or without presence of blood clots. Abdominal pain was treated when necessary by oral antispasmodics on

need .Patients were observed for severity of pain and passage of products of conception per vagina as well as for severity of vaginal bleeding .Patients who had vaginal bleeding more than usual were checked by ultrasound and if intrauterine content other than blood clots were seen , vaginal evacuation of RPOG under general anesthesia was performed. If only blood clots and endometrial thickness> 15mm were noted, oral methergin 0.2 mg was prescribed at a dose of two tablets per day for 3 days .Patient with no excessive bleeding were discharged home 12 h after vaginal surgical evacuation in group (2) or after confirmed by ultrasound in group (1), both groups received prophylactic antibiotics (Injectable Ampiclox). All participants were requested to come for a follow-up Visit after one week. The patients were asked about the amount and duration of vaginal bleeding, fever, pelvic pain), or passage of fleshy parts per vagina. They were asked also about their satisfaction for the management method of their conditions, whether they will recommend this method to a friend as well as about any experienced side effects .The ultrasound examination was performed to all patients who came for follow up visit, to measure the endometrial thickness at maximum anteroposterior diameter. Pain was assessed (visually and verbally)during hospital stay 4 hourly and during follow up visit.

### **Statistical Analysis**

Data were statistically described in term of mean and standard deviation [SD]. Comparison of the studied groups was done using student's test. Chi square test was used to compare categorical variable . A P-value less than 0.05 were considered statistically significant.

### **Results**

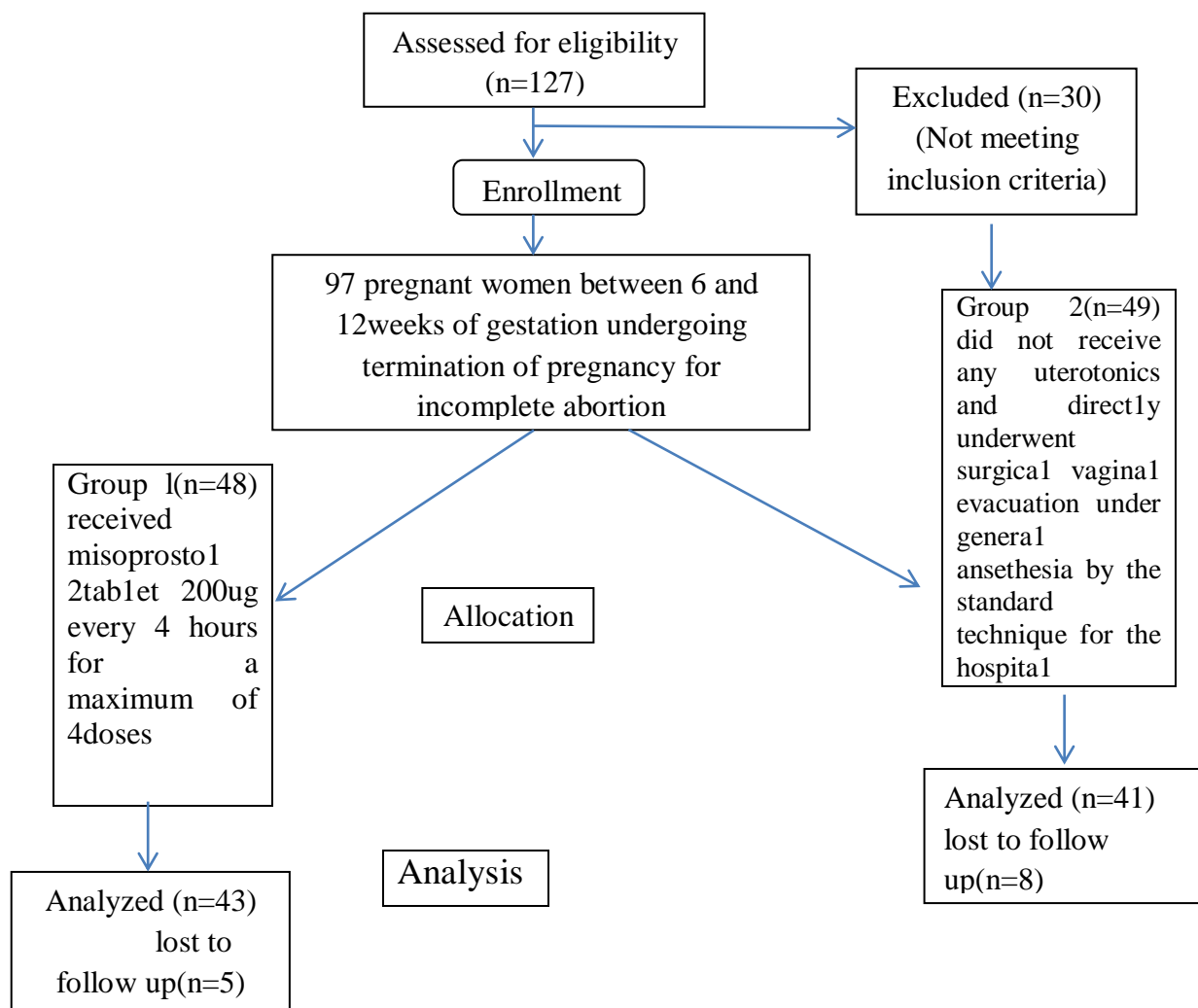
Demographic characteristics of both groups as regard age (years), height (cm), weight (kgs) body mass index (BMI)

gestational age at the time of pregnancy termination in weeks, gravity, parity as well as number of primiparous patients. No statistically significant differences were recorded between both groups for all parameters as shown in table 1.

Success of method of treatment in completely solving the medical problem was different between the two study groups. Table 2. Despite that the vaginal surgical evacuation method was successful in solving the medical problem in 100% of cases, using misoprostol was successful in 79% (  $p=0.0006$ ), so it was needed to have vaginal surgical evacuation in 9 cases of misoprostol group. Patient satisfaction was not significantly higher in surgical evacuation group table 2. However, almost

the same percent of patient in each group reported they will recommend the method to friend. In the meantime the incidence of side effects and tolerability of the method of treatment were comparable in both study groups table 2.

The incidence of excessive post-abortive bleeding was significantly more in the misoprostol group than surgical evacuation group ( $p=0.0336$ ). Also endometrial thickness using ultrasound was significantly thicker in the misoprostol group than group 2 ( $p=0.0071$ ) Regarding pain score, both groups were comparable regarding their complaint of lower abdomen cramps (within 7 days) during their follow up visit ( $p=0.512$ ).



**Figure 1.** A flowchart of study procedure including patients enrollment, allocation, follow up and analysis

**Table 1.** Demographic characteristics of study population

	Misoprstol group (1)[n=43]	ERPC group2(N=41)	P-value
Age(years) mean±SD	26.9±4.6	27.1±5.4	0.8938
Height(cm) mean±SD	159.4±5.4	160.6±4.5	0.1968
Weight(kg mean±SD)	66.4±11.3	64.8±11.8	0.4845
Body mass index mean±SD	25.9±3.6	25.4±3.2	0.3623
Gestation age (week) mean±SD	8.4±1.3	8.2±1.2	0.3986
Range(week)	6-12	6-12	
Parity			
Primiparous	8(18.6%)	9(21.9%)	0.6956
Multiparous	34(79.0%)	31(75.6%)	0.6956
History of previous abortion	6(13.9%)	4(9.7%)	0.6458

ERPC= Evacuation of retained products of conception

**Table 2.** Clinical outcome of the study

	Misoprstol group (1)n=43 no=%	ERPC group2(n=41) no=%	p-value
Success of treatment method	34(79.0%)	41(100%)	0.0006
Patient method satisfaction	36(83.7%)	37(90.2%)	0.2616
Patient recommendation to a friend of treatment method	33(76.7%)	34(82.9%)	0.3939
Incidence of side effects (ausea, vomiting)	8(18.6%)	4(9.7%)	0.2315
Tolerability of the method of treatment	36(83.7%)	36(87.8%)	0.6458
Incidence of significant lower abdomen cramp within 7 days	3(6.9%)	2(4.8%)	0.5144
Incidence of excessive post abortive bleeding	5(11.6%)	1(2.4%)	0.0336
Endometrial thickness (mm)(after 7 days [mean±SD])	8.4±0.49	6.03±0.39	0.0071

ERPC= Evacuation of retained products of conception

## Discussion

In this study, we tested the effectiveness of misoprostol to ensure complete evacuation of the uterine contents and to lessen the need for surgical evacuation in cases of incomplete abortion. The use of misoprostol to facilitating complete uterine expulsion of products was mentioned repeatedly in the literature either to ripe cervix facilitating manual vacuum aspiration<sup>(13)</sup> or to help complete expulsion of retained intrauterine conception products Home self-administration of doses as 400 µg sublingually was feasible and acceptable for medical abortion up to 56 days gestation<sup>(14)</sup>. The high efficacy, safety and acceptability of 400 µg sublingual misoprostol indicated that it is an alternative to surgery for incomplete abortion. Hence, misoprostol might improve post – abortive care when surgical treatment is unavailable.<sup>(15)</sup>

The side effects reported in our study (nausea & vomiting) were transient and tolerable, which agrees with finding of other studies<sup>(16)</sup>. It was reported that cramping starts within the first cases, & some gastrointestinal adverse side effect like dyspepsia, flatulence, nausea and vomiting but in few cases and transient. Pain scores were significant higher among misoprostol group compared to controls. Severe abdomen pain was recorded when administering misoprostol for pregnancy termination in late first and early second trimester abortion<sup>(17, 18)</sup> and consequently significant higher analgesia requirement in women who required increased number of misoprostol doses our results are also in agreement with the results of Neilson and colleagues 2010. Who reported that the administration of misoprostol to women with incomplete abortion appears safe and can avoided surgical evacuation in 80% of cases. It was also considered as an acceptable choice by subset women.

However, women should be given proper analgesia and advice about possible occurrence of more than source to support all expectant, medical & surgical management of spontaneous 1<sup>st</sup> trimester incomplete abortions, women experiencing miscarriage at less than 13 weeks should be offered these three choices <sup>(5)</sup>.

## Conclusion

Although vaginal surgical evacuation is more effective than misoprostol in First Trimester incomplete abortion, still medical treatment is effective and acceptable especially when surgical management is not available or risky or patient refused to undergo surgical management.

## References

1. C. Steer, S. Campbell, M. Davies, B. Mason, W.P. Collins Spontaneous abortion rates after natural and assisted conception *BMJ*, 299 (1989), pp. 1317–1318.
2. Grossman D, Blanchard K, Blumenthal p. Complications after second trimester Surgical and medical abortion. *Report Health Matters* 2008;16:173-182.
3. Pauleta JR, Clode N, Graca LM, Expectant management of incomplete abortion In the first trimester. *Int J Gynaecol Obstet* 2009; 106: 35-38.
4. Deutchman M, Tubay AT, Turok D. First trimester bleeding. *Am Fam physician* 2009;79:985-994.
5. Neilson JP, Gyte GM, Hickey M, Vazquez JC, Dou L. Medical 226 treatments for Incomplete miscarriage (less than 24 weeks). 227 *Cochrane Database Syst Rev*. 2010: CD007223.
6. Nybo Anderson A M . Maternal age and fetal loss; population based register linkage study. *BMJ* 2000;320;1708-1712 .
7. Chung TK.Spontaneous abortion: a randomized controlled trial comparing surgical evacuation with conservative management using misoprostol. *Fertil Steril* 1999;71:1054-1059.
8. J. Trinder, P. Brocklehurst, R. Porter, M. Read, S. Vyas, L. Smith Management of miscarriage: expectant, medical, or surgical? Results of randomised controlled trial miscarriage treatment (MIST) trial *BMJ*, 332 (2006), pp. 1235–1238.
9. Kushwah B .Sublingual versus oral misopristol for uterine evacuation following early pregnancy failure .*Int J Gynaecol Obstet* 2009 ;106;43-45.
10. paritakul P, Comparative study between oral and sublingual 600 µg misoprostol for the treatment of incomplete abortion. *J Obstet Gynaecol res* 2010;36:978-983.
11. Taylor J, Oral misoprostol as an alternative to surgical management for incomplete abortion in Ghana. *Int J Gynecol Obstet* 2011;112:40-44.
12. Montesinos R, Oral misoprostol for the management of incomplete abortion in Ecuador *Int J Gynaecol Obstet* 2011,115:135-139.
13. Vimala N, randomized comparison of sublingual and vaginal misoprostol for cervical priming before suction terminate of first- trimester pregnancy. *Contraception* 2004;70:117-120.4)
14. Hamoda H,Home self- administration of misoprstol abortion up to 56 days gestation. *J Fam plann Reprod Health Care*2005;3189-3192.
15. Dabash R, Ramadan .Randomized controlled trail 400 µg sublingual versus vacuum aspiration .*Int J Gynaecol Obstet* 2010;111;131-135.
16. K. Gemzell-Danielsson, P.C. Ho, R. Gómez Ponce de León, A. Weeks, B. Winikoff Misoprostol to treat missed abortion in the first trimester *Int J Gynecol Obstet*, 99 (Suppl 2) (2007), pp. S182–S185.
17. P.C. Ho, P.D. Blumenthal, K. Gemzell-Danielsson, R. Gómez Ponce de León, S. Mittal, O.S. Tang Misoprostol for the termination of pregnancy with a live fetus at 13–26 weeks *Int J Gynecol Obstet*, 99 (Suppl 2) (2007), pp. S178–S181.
18. H. Hamoda, P.W. Ashok, G.M. Flett, A. Templeton Analgesia requirements and predictors of analgesia use for women undergoing medical abortion up to 22 weeks of gestation *BJOG*, 111 (2004), pp. 996–1000.