

THE USE OF MISOPROSTOL AS ALTERNATIVE TO CURETTAGE POST ABORTION

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ABSTRACT

Termination of pregnancy is performed nowadays medically rather than surgically in most cases by means of misoprostol, in order to minimize the hospitalization and its costs. This study is aimed to evaluate the effectiveness of misoprostol used buccally in cases of incomplete abortion to avoid uterine curettage. The study was conducted in the department of Obstetrics & Gynecology in Misurata central hospital, Misurata, Libya. The study performed during the period from January 1st 2013 to June 30th 2014. 300 patient were involved in the study. Patients were aborted either spontaneously or induced by misoprostol, all of them were hemodynamically stable with sonography proved diagnosis of incomplete abortion. They were given misoprostol 400 mcg buccally two times a day for a period of five days under cover of antibiotics. Pelvic sonography was performed on day 5, day 10 and day 15 to confirm the complete expulsion of the retained tissue. Complete evacuation rates with medical treatment using misoprostol were 84.3%. 80% of cases of age group within 20 - 40 years and nearly 70% had history of abortion, nearly 48.2 % of the aborted group (84.3%) were less than 8 weeks gestation which indicates that the efficacy is more in early gestational ages. The spasmodic pain is the most obvious side effect to misoprostol which is relieved by ibuprofen tablets 400mg used whenever needed while the duration and amount of bleeding were reduced and in more than 50% of cases stopped by the fifth day. Medical treatment using misoprostol 800 mcg daily for incomplete abortion is effective and acceptable in hemodynamically stable patients.

KEYWORDS: Misoprostol, Medical termination of pregnancy, Retained products of conception.

INTRODUCTION

Misoprostol is a synthetic analogue of prostaglandin E1 (PGE1). It was approved by the US FDA for the prevention of nonsteroidal anti-inflammatory drug (NSAID)-induced gastric ulcers. The action of misoprostol on the pregnant uterus was first described by Rabe et al in 1987. They discovered that it binds to the EP-2/EP-3 prostanoid receptors inducing effective uterine contraction⁽¹⁾.

Although misoprostol is licensed for oral administration, it is now often used vaginally, sublingually and rectally in some instances to treat incomplete or missed abortion. Misoprostol as a thermo-stable prostaglandin E1 analogue has been previously tested in the management of incomplete miscarriage in different regimens and settings⁽²⁾. Following oral administration, the plasma concentration increased rapidly with a peak of 30 min, declined rapidly by 120 min and remained low thereafter. In contrast, after vaginal administration, the plasma concentration gradually increased, reaching maximum levels after 70–80 min and slowly declined with detectable levels present even after 6 hrs. Vaginal misoprostol was present in the circulation longer than oral misoprostol and hence its duration of stimulation of the uterus exceeds that of oral misoprostol. Vaginal application of misoprostol results in slower increase and lower plasma concentrations of misoprostol acid than does oral administration, but overall exposure to drug is increased^(3,4).

Approximately 11–15% of pregnancies end in spontaneous first-trimester miscarriage⁽⁵⁾.

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⁽⁶⁾, this paved way to more recourses to medical and expectant management which are practical and feasible, although it may increase anxiety associated with the impending abortion^(7,8).

The available Cochrane systematic review evidence suggests that expectant care as well as medical treatment with misoprostol are acceptable alternatives to routine vaginal surgical evacuation. Neilson et. al 2010⁽⁹⁾.

Some other studies used the sublingual route instead of the oral or vaginal route for uterine evacuation after early pregnancy failure⁽¹⁰⁻¹³⁾.

AIM OF THE STUDY

The aim of this study is to assess the effectiveness and acceptability of using buccal misoprostol for management of first trimester incomplete abortion as an alternative to direct vaginal surgical evacuation.

MATERIAL AND METHODS

This is a prospective observational study which included 300 patients who have been diagnosed as first trimester incomplete abortion requesting or agreed for medical management. The study was carried out over a period of one and half year in the department of Obstetrics & Gynecology in Misurata central hospital, Misurata, Libya. from January 1st 2013 to June 30th 2014. The patients involved in the study were aborted either spontaneously or by the

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use of misoprostol and were hemodynamically stable.

The criteria used for the diagnosis of incomplete abortion depends of patient symptoms and signs versus laboratory test (β HCG drop), sonographic findings and the duration of follow up (RPOC eventually resorbed or are passed). Women who opted for medical termination using pills were further counseled regarding the procedure and written valid consent was taken. All patients were explained about the complications of the procedure and the need for surgical uterine evacuation in case of failure.

They all were given a dose of misoprostol 400 mcg every 12hrs buccally for five days under cover of broad spectrum antibiotics. Pelvic ultrasonography was performed for all patients before starting misoprostol to confirm the diagnosis then repeated on day 5 and day 10 and day 15 to confirm the complete expulsion of the retained tissue. Pain, a predominant symptom is relieved by ibuprofen tablets 400mg used whenever needed. Exclusion criteria were patients who are hemodynamically unstable, with septic abortion, fever, bronchial asthma, severe anemia, suspected ectopic pregnancy, known case of coagulopathy or were on anticoagulant therapy, cardiovascular diseases such as uncontrolled hypertension, angina, valvular disease, and arrhythmia, severe renal, liver, or respiratory disease, uncontrolled seizure disorder, inherited porphyria, and allergic to misoprostol. Anti-D injections were administered if the pregnant women with Rh- negative blood group.

RESULTS

The youngest patient was aged 18 years while the oldest was 44 years old with a mean age of 32.3 ± 9.3 years. More than 40% of patients were aged between 31 – 40 (table 1).

(Table 1) Patient distribution according to age groups

Age group	No of pts	percentage of pts
<20	32	10.7%
20 – 30	110	36.7%
31 – 40	130	43.3%
>41	28	9.3%

The highest incidence of abortion were in parous women while it is too low in first pregnancy (12%), as shown in the (table 2).

(Table 2) Patient distribution according to parity

Parity	No of pts	percentage of pts
Primi-parous	38	12.6%
P1 – P4	158	52.7%
\geq P5	104	34.7%

Around 69% of the cases had history of one abortion or more with 30% of them had aborted once (table 3).

(Table 3) Patient distribution according to H/O of abortions

Abortions	No of pts	percentage of pts
0	93	31%
1	97	32.3%
2	69	23%
\geq 3	41	13.7%

The gestational age before abortion was less than 12 weeks gestation with a percentage of about 42% of them less than 8 weeks gestation (table 4).

(Table 4) Patient distribution according to gestational age before abortion

Gest. Age	No of pts	percentage of pts
< 8 wks	126	42 %
8-10 wks	97	32.3 %
10-12 wks	77	25.7 %

Complete abortion by misoprostol was achieved in around 84% of the cases while around 15% had underwent a surgical intervention (table 5).

(Table 5) Patient distribution according to response to misoprostol

	No of pts	percentage of pts
Complete abortion	253	84.3%
Completed in 5 days	109	36.3%
Completed in 10 days	82	27.3%
Completed in 15 days	62	20.7%
Incomplete abortion	47	15.7%
Curettage	43	14.3%
Sepsis + curettage	4	1.3%

Out of the 15% of the cases(47) Whom had underwent a curettage, about 59% (8%) had the procedure done within the first five days post abortion due to their poor response to the drug (table 6).

(Table 6) Patient distribution according to curettage timing post abortion

Days post abortion	No of pts (47)	percentage of pts (15%)
< 5 days	28	59.6 %
5-10 days	12	25.6 %
10-15 days	6	12.7 %
> 16 days	1	2.1%

Most of the cases are less than 8 weeks gestation which assures the efficacy of the medicine in the earlier gestational age (table 7).

(Table 7) Patient distribution according to gestational age post abortion

Gest. Age	No of pts (253)	percentage of pts
< 8 wks	122	48.2%
8-10 wks	87	34.4 %
10-12 wks	44	17.4 %

The most obvious side effect was the spasmodic pain due to the strong uterine contraction that induced by the drug, followed by prolonged bleeding in some cases and gastro-intestinal side effects (table 8).

(Table 8) Patient distribution according to side effects to misoprostol

Complications	No of pts	percentage of pts
Pain	112	37.3 %
Bleeding	58	19.3 %
Nausea & vomiting	44	14.6 %
Mouth ulceration	15	5 %
Fever & Rigor & Chills	6	2 %
No complications	65	21.7%

Bleeding was ceased within the first 10 days post abortion in most of the cases while it may persist longer in about 12% Of them (table 9).

(Table 9) Patient distribution according to duration of bleeding after misoprostol

Duration of bleeding	No of pts	percentage of pts
2 – 5 days	168	56%
6 – 10 days	94	31.3%
>10 days	38	12.6%

The vast majority are satisfied with the medicine according to a questionnaire delivered to them after the end of the procedure while others were not because of the side effects or the need to do curettage (table 10).

(Table 10) Patient distribution according to their drug satisfaction

Satisfaction	No of pts	percentage of pts
Completely satisfied	248	82.7%
Unsatisfied	42	14 %
No comment	10	3.3%

DISCUSSION

Medical abortion offers a great potential for improving abortion access and safety as it requires less extensive infrastructure than surgical abortion and there is no need for operation theater facilities and maintains patient's need for privacy. The disadvantages would be that the women requires at least three visits to the hospital, longer duration of bleeding and resulting unpredictable outcome in few patients. The factors that may affect the woman's decision about the medical method of termination of pregnancy is the abdominal cramps and heavy bleeding, longer duration of bleeding (average 7–10 days), and the need to follow-up after 2 weeks for clinical examination and sonography.

Most of the patients would start cramps and increased bleeding within 6 hours of misoprostol tablets administration, The overall satisfaction was high as concluded from written questionnaire and they promise to recommend the method to friends. No serious side effects or complications were reported except of secondary infection in four cases which were treated by antibiotics and curettage thereafter. The use of misoprostol to facilitate complete uterine expulsion of products of conception was mentioned repeatedly in literature either to ripen the cervix fa-

ilitating manual vacuum aspiration or to help complete expulsion of the retained intrauterine conception products⁽¹⁴⁻¹⁹⁾. Trans-vaginal ultrasound was carried out to evaluate the condition, the need for medical or surgical therapy according to the thickness of the endometrial echogenicity⁽²⁰⁾.

Home self-administration of a daily dose of 800 mcg buccally was feasible and acceptable for medical post abortion evacuation⁽²¹⁾.

The high efficacy, safety, and acceptability of the daily 800-mcg buccal misoprostol indicate that can be an alternative to surgery for incomplete abortion, Hence, misoprostol might improve post-abortion care when surgical treatment is unavailable^(22,23).

The side effects reported in our study were transient and tolerable which agrees with the findings of other studies. It was reported that cramping usually starts within the first few hours after misoprostol administration⁽²⁴⁾. Our results are also in agreement with the results of Neilson et. al 2010, who reported that the administration of misoprostol to women with incomplete abortion appears to be safe and can avoid vaginal surgical evacuation in 80% of cases while in our study the percentage is 84.3%⁽⁹⁾.

It was also considered as an acceptable choice by some women. However, women should be given a proper analgesia and advise them about possible occurrence of more than average bleeding and given the availability of health service resources to support all expectant medical and surgical side effects.

CONCLUSION AND RECOMMENDATIONS

Although vaginal surgical evacuation of the uterus is more effective than misoprostol in solving the problem but still the medical treatment is effective and acceptable in cases of missed and incomplete abortion especially when surgical management is not attainable or risky or patients prefers to avoid surgical management. About 80% of patients are satisfied with the procedure while the others had some side effects. Misoprostol buccally in a dose of 400 mcg daily two divided doses per day for five days is effective medical evacuation of RPOC in a 84.3% of the case, hence it can be recommended for termination of unhealthy pregnancy.

REFERENCES

- 1- Zeiman M, Fong SK, Benowitz NL, Banskter D, Darney PD. Absorption kinetics of misoprostol with oral or vaginal administration. *Obstet Gynecol* 1997;90(1):88-92.
- 2- Tang OS, Lau WN, Ng EH, Lee SW, Ho PC. A prospective randomized study to compare the use of repeated doses of vaginal with sublingual misoprostol in the management of first trimester silent miscarriages. *Hum Reprod* 2003;18: 176-81.
- 3- Kushwah B, Singh A. Sublingual versus oral misoprostol for uterine evacuation following early pregnancy failure. *Int J Gynaecol Obstet* 2009;106(1):43-5

- 4- Vimala N, Mittal S, Kumar S, Dadhwal V, Sharma Y. A randomized comparison of sublingual and vaginal misoprostol for cervical priming before suction termination of first-trimester pregnancy. *Contraception* 2004;70(2):117–20
- 5- Castleman LD, Blumenthal PD. Spontaneous and induced abortion. In: Ryden J, Blumenthal PD, editors. *Practical gynecology: a guide for the primary care physician*. Philadelphia (PA): American College of Physicians; 2009. p. 137-57.
- 6- Grossman D, Blanchard K, Blumenthal P. Complications after surgical and medical abortion. *Reprod Health Matters* 2008;16(31 Suppl):173–82
- 7- Trinder J, Brocklehurst P, Porter R, Read M, Vyas S, Smith L. Management of miscarriage: expectant, medical, or surgical? Results of randomized controlled trial
- 8- Pauleta JR, Clode N, Gracia LM. Expectant management of incomplete abortion in the first trimester. *Int J Gynaecol Obstet* 2009;106(1):35–8.
- 9- Neilson JP, Gyte GM, Hickey M, Vazquez JC, Dou L. Medical treatments for incomplete miscarriage (less than 24 weeks). *Cochrane Database Syst Rev* .2010 (1): CD007223. <http://dx.doi.org/10.1002/14651858.CD007223.pub2>. Review. Update in: <http://www.ncbi.nlm.nih.gov/pubmed/23543549> *Cochrane Database Syst Rev*. 2013(3):CD007223.
- 10- Paritakul P, Phupong V. Comparative study between oral and sublingual 600 mcg misoprostol for the treatment of incomplete abortion. *J Obstet Gynaecol Res* 2010;36(5):978–83.
- 11- Taylor J, Diop A, Blum J, Dolo O, Winikoff B. Oral misoprostol as an alternative to surgical management for incomplete abortion in Ghana. *Int J Gynaecol Obstet* 2011;112(1):40–4.
- 12- Montesinos R, Durocher J, Leon W, Arellano M, Pena M, Pinto E, Winikoff B. Oral misoprostol for the management of incomplete abortion in Ecuador. *Int J Gynaecol Obstet* 2011; 115 (2): 135–9.
- 13- Chung TK, Lee DT, Cheung LP, Haines CJ, Chang AM. Spontaneous abortion: a randomised controlled trial comparing surgical evacuation with conservative management using misoprostol. *Fertil Steril* 1999;71:1054–9. (miscarriage treatment (MIST) trial). *BMJ* 2006;332:1235–8.
- 14- Paustuszak AI, Schuler L, Speck-Martins CE. Use of misoprostol during pregnancy *N Engl J Med* 1998;338:1881-5.
- 15- Gemzell-Danielsson K, Ho PC, Gómez Ponce de León R, Weeks A, Winikoff B. Misoprostol to treat missed abortion in the first trimester. *Int J Gynecol Obstet* 2007;99(Suppl 2):S182–5.
- 16- Ngoc NT, Blum J, Westheimer E, Quan TT, Winikoff B. Medical treatment of missed abortion using misoprostol. *Int J Gynaecol Obstet* 2004;87:138-42.
- 17- Blum J, Winikoff B, Gemzell-Danielsson K, Ho PC, Schiavon R, Weeks A. Treatment of incomplete abortion and miscarriage with misoprostol. *Int J Gynaecol Obstet* 2007;99(suppl 2):S186-9.
- 18- Tang OS, Ho PC. The use of misoprostol for early pregnancy failure. *Curr Opin Obstet Gynecol* 2006;18:581-6.
- 19- Clark W, Shannon C, Winikoff B. Misoprostol for uterine evacuation in induced abortion and pregnancy failure. *Expert Rev Obstet Gynecol* 2007;2:67-108.
- 20- McGalliard C, Gaudoin M. Routine ultrasound for pregnancy termination request increases women's choice and reduces inappropriate treatments. *Br J Obstet Gynecol* 2004;111:79-82.
- 21- Hamoda H, Ashok PW, Flett GM, Templeton A. Home self administration of misoprostol for medical abortion up to 56 days gestation. *J Fam Plann Reprod Health Care* 2005;31(3):189–92.
- 22- Dabash R, Ramadan MC, Darwish E, Hassanein N, Blum J, Winikoff BA. Randomized controlled trial of 400-mcg sublingual misoprostol versus manual vacuum aspiration for the treatment of incomplete abortion in two Egyptian hospitals. *Int J Gynaecol Obstet* 2010;111(2):131–5.
- 23- Dao B, Blum J, Thieba B, Raghavan S, Ouedraogo M, Lankoande J, et al. Is misoprostol safe, effective and acceptable alternative to manual vacuum aspiration for post abortion care Results from a randomized trial in Burkina Faso, West Africa. *BJOG* 2007;114:1368-75.
- 24- OBSTETRICS AND GYNECOLOGY 672 *Indian Journal of Clinical Practice*, Vol. 24, No. 7, December 2013.