

Experiences in the use of misoprostol in the management of first trimester missed abortion in a low resource setting

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ABSTRACT

Background: The use of misoprostol in the management of first trimester abortion is an evolving clinical practice in most parts of sub-Saharan Africa.

Objective: To determine the effectiveness and acceptability of misoprostol in the evacuation of the uterus in first trimester missed abortion.

Study Design: This was a non-randomized trial.

Setting: This study was conducted in the Gynecologic Unit, Abubakar Tafawa Balewa University Teaching Hospital Bauchi, Nigeria.

Materials and Methods: Consented consecutive patients with first trimester missed abortion were recruited in the study. Each patient was given sublingual misoprostol 600 µg to be repeated after 6 hours if abortion process was not initiated. They were followed-up after two weeks and offered contraceptive counseling. However, if active vaginal bleeding persisted, patients were reviewed after 1 week, scanned and offered surgical evacuation (manual vacuum aspiration) on confirmation of residual products of conception. Telephone review was conducted for patients who defaulted follow-up. Data were analyzed using the Statistical Package for the Social Sciences version 16. *P* value was considered significant at $\alpha < 0.05$ at 95% CI.

Results: Sixty-one patients with missed abortion were managed between 1st January and December 2013 with a mean age, parity and gestational age of 27.6 ± 5.6 years, 3.6 ± 2.3 and 7.6 ± 2.0 weeks, respectively. Fifty-six patients (92%) achieved complete evacuation. Mean interval between the first dose of misoprostol and abortion was 5.1 ± 2.2 hours and mean duration of vaginal bleeding was 5.9 ± 1.6 days (range: 3–14 days). Side effects were minor mainly nausea/vomiting, and all the patients with complete evacuation showed satisfaction with the method and preferred it to surgical evacuation.


Conclusion: Misoprostol is very effective in the management of first trimester missed abortion in our setting and should be the treatment method of first choice.

Key words: Evacuation; first trimester; misoprostol; missed abortion; pregnancy; products of conception.

Introduction

Misoprostol-a prostaglandin E1 analogue has emerged as one of the most important medication in obstetrics. It is useful in every trimester of pregnancy including the postpartum

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period. It is effective in the management of first trimester abortion and has increased access to post-abortion care particularly in developing countries where abortion laws are restrictive.^[1-4] It is also effective in the treatment of second trimester abortion, induction of labour and prevention and treatment of postpartum haemorrhage.^[1]

One of the profound advantages of misoprostol over other prostaglandins is that it is stable at room temperature, and hence does not require refrigeration for storage. This pharmacodynamic characteristic or property of misoprostol is relevant in our setting where electricity supply is a luxury. Other advantages of misoprostol include its robust route of administration (oral, buccal, intravaginal and rectal), availability and low cost.

Although misoprostol when given alone is not as effective as when combined with mifepristone in the termination of first trimester viable pregnancies,^[1-4] there is evidence indicating that it is very effective in the evacuation of first trimester pregnancy failure (missed abortion) and incomplete abortion in both resource rich and poor settings.^[5-9] Reports from Australia^[10] and Spain^[11] revealed that misoprostol is effective in evacuating the uterus of first trimester missed abortion in 80% and 90% of cases, respectively. However, Panta *et al.*^[3] in Sarilanka reported an effectiveness rate of 95%, whereas Ngoc *et al.* in Vietnam recorded a rate of 93%.^[12]

In sub-Saharan Africa, including Nigeria, studies on misoprostol in first trimester abortion are few and most of them report its effectiveness in incomplete abortion.^[1,9,13-15] The Nigerian multicentric study^[15] revealed that over 98% of Nigerian women preferred misoprostol to manual vacuum aspiration (MVA) in the management of incomplete abortion. Side effects reported in most studies were minor and transient and include nausea/vomiting and shivering.^[2,10-16]

Data on the effectiveness of misoprostol in missed abortion in sub-Saharan Africa are very scarce. In this article, we document the effectiveness of misoprostol in the evacuation of first trimester missed/delayed abortion in a tertiary care center in Bauchi, north-eastern Nigeria.

Materials and Methods

This study was a prospective study (non-randomized trial) involving consecutive patients (stable and with no significant comorbidity) who presented to the gynecologic unit of Abubakar Tafawa Balewa University Teaching Hospital (ATBUTH) Bauchi with first trimester missed abortion from January to December 2013. From a case load of 1–2 per week, at least 50 patients were anticipated to be

recruited into the study. ATBUTH is the only tertiary care/referral facility in the central and southern parts of Bauchi State of Nigeria.

Protocol

Consented consecutive patients who presented with confirmed (by ultrasonography) first trimester missed abortion were recruited into the study. Each patient was given sublingual misoprostol 600 µg, which was repeated after 6 hours if the abortion process was not initiated. They were also offered contraceptive counseling, and were followed up after 2 weeks for clinical evaluation and contraceptive services. However, they were seen after 1 week if heavy vaginal bleeding persisted, and were offered pelvic scan/surgical evacuation with MVA (Ipas Plus). Telephone review was conducted for patients who defaulted follow-up. Treatment failure was defined as either failure to initiate abortion after the maximum two doses or incomplete evacuation as evidenced by persistent heavy vaginal bleeding after 1 week (along with ultrasound evidence of retained products) or vaginal spotting after 2 weeks of therapy with or without ultrasound evidence of incomplete evacuation). Data was entered in a proforma designed for the study and were analyzed using the Statistical Package for the Social Sciences version 17 Misoprostol (Cytotec by Pfizer Pharmaceuticals). *P* value was set at <0.05 at 95% confidence interval.

Results

Sixty-one patients with missed abortion in the first trimester (uterine size: ≤12 weeks) were recorded with a mean age of 27.7 ± 5.6 years (range: 17–44 years), mean parity of 3.6 ± 2.3 (range: 0–12) and mean gestational age 7.6 ± 2.0 weeks (6–12 weeks). Fifty-six patients had complete evacuation (92% evacuation rate), with 7 (12%) requiring second dose of misoprostol, and all showed satisfaction with the method and recommended it to their friends. Five patients (8.2%) had failed medical evacuation (1 completely unresponsive and 4 with incomplete evacuation), and thus underwent MVA. The mean interval between the first dose and abortion process was 5.1 ± 2.2 hours (range: 2–10 hours), and mean duration of vaginal bleeding was 5.9 ± 1.6 days (range: 3–14 days).

There appeared to be no relationship between the interval for abortion or duration of vaginal bleeding with gestational age [Table 1]. Table 2 presents the side effects of misoprostol among the patients. Nausea/vomiting and rigors were the common side effects. Only 7 patients (11%) commenced contraception after evacuation, and 6 accepted combined pills and one injectable.

Table 1: Gestational age and interval between first dose abortion/duration of vaginal bleeding

Parameter	Gestational age (weeks)		P value
	<9 weeks	≥9 weeks	
Mean interval b/w first dose of misoprostol and abortion	5.2±2.3	4.7±2.2	0.660
Mean duration of vaginal bleeding	5.6±1.5	6.8±1.6	0.166

Table 2: Side effects profile of patients

Side effects	No (%)
None	42 (68.9)
Nausea/vomiting	9 (14.8)
Shivering/Rigors	5 (8.2)
Pyrexia	3 (4.9)
Abdominal pains	2 (3.3)
Total	61

Discussion

With a mean age of 27 years, our patients were relatively young, which is typical in most developing countries. The evacuation rate of 92% in this study is similar to most data from resource poor countries. It is comparable to the rate of 93% and 95% reported by Ngoc *et al.*^[12] and Panta *et al.*^[3] from Vietnam and Nepal, respectively, and the 90% rate reported by Barcelo *et al.* from Spain.^[11] However, our rate is higher than the rate of 80% reported by Peterson *et al.* from Australia.^[10] The differences in the evacuation rates may not be disconnected to the differences in the definition of successful emptying of the uterus, the dosing regimen and routes of administration of misoprostol. It should be noted that only 12% of our patients required repeat dose of misoprostol. This implies that over two-third of patients require only one dose of misoprostol, underscoring the cost effectiveness of medical evacuation, especially in our setting where cost is a major barrier to accessing quality post-abortion care services. The reported 12% rate for the requiring repeat dose of misoprostol was lower compared with the 40.5% rate reported by Peterson *et al.*^[10] Considering environmental factors, differences in the study design and sample size may account for the wide difference in the rate for the requirement of repeat dose of misoprostol.

Our figures for the time interval for abortion process to commence and duration of vaginal bleeding (mean of 5.1 hours and 6 days, respectively) are consistent with previous reports.^[7,12,17]

Side effects of misoprostol recorded in this study were largely minor and self-limiting-nausea, vomiting, rigors and pyrexia. This is consistent with established data.^[2,10,11] Satisfaction with medical evacuation with misoprostol was

readily expressed by a majority of our patients in this study including recommending it to their friends. This observation is in conformity with previous reports from Africa.^[13-15,18]

The post-abortion contraceptive rate documented in our study is very low compare with previous reports.^[2,3,15] Post-abortion contraception after medical abortion may pose some challenges in our environment largely because of the poor follow-up among other factors. Research on how best to deliver contraceptive services following medical evacuation as part of post-abortion care is a certainly a priority in our setting.

Conclusion

It can be concluded that misoprostol is effective and safe in the management of first trimester missed abortion and should be the first line of management in our setting. This is particularly pertinent at the primary health care facilities, which are largely manned by mid-level personnel.

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Conflicts of interest

There are no conflicts of interest.

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