

# Comparison of manual vacuum aspiration and misoprostol in the management of incomplete abortion

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**Background:** Incomplete abortions can be managed expectantly, surgically and medically (using misoprostol). Expectant management is safe in places where women have access to information, appropriate care and follow-up; however, in isolated and poor areas women who come for help need an intervention.

**Objective:** To compare the efficiency of manual vacuum aspiration (MVA) and misoprostol in the treatment of incomplete abortion.

**Patients and method:** This was a prospective study over five months from March to August 2015. All patients admitted with a diagnosis of incomplete abortion were recruited into the study.

**Results:** 308 patients with incomplete abortion were randomized into two treatment groups - MVA (done under local anaesthesia) and misoprostol (400 micrograms by the vaginal route). MVA was successfully performed for all patients. Two patients presented with anaemia. In the misoprostol group, 23 patients had vaginal bleeding, and 10 persistence of incomplete abortion.

**Conclusion:** MVA is more effective than misoprostol with less complications in the treatment of incomplete abortion when it is done by a trained person.

**Key words:** *incomplete abortion, manual vacuum aspiration, misoprostol, management, Chad*

## Introduction

Incomplete abortion contributes disproportionately to maternal morbidity and mortality in developing countries [1]. According to the World Health Organization 87,000 maternal deaths due to incomplete abortion are recorded yearly in developing countries [2]. Incomplete abortions can be managed expectantly, surgically and medically (using misoprostol with or without mifepristone). Surgical management has been the standard of care worldwide for many years, and its safety and effectiveness is well proven where there is high-quality medical care [3]. In Chad, surgical treatment of incomplete abortion, either spontaneous or induced, involves evacuation of the uterus with MVA or sharp curettage. MVA was a recent (2010) addition to the management of incomplete abortion in our units and other hospitals in N'Djamena [4]. Medical management of incomplete abortion using misoprostol is gaining ground as a feasible, and low cost means of uterine evacuation [1].

Our study aimed to compare the efficiency of MVA and misoprostol in the treatment of incomplete abortion

at N'djamena Mother and Child hospital.

## Methods and Patients

This was a prospective study over five months from March to August 2015. All patients admitted for incomplete abortion were recruited. Each patient was given a detailed explanation of both options of management and written consent obtained for the study. Patients that declined to take part and those with a diagnosis in addition to incomplete miscarriage were excluded from the study. The patients were randomised into the two groups depending on the content of the envelope the patient picked from a box containing an equal number of envelopes for each group.

The procedure of manual vacuum aspiration was done under local anaesthesia. Those in the misoprostol group received 400 micrograms of misoprostol by the vaginal route.

Data were collected and analysed using EPI INFO 3.5.1 software.

## Results

We registered 308 patients with incomplete abortion. The majority (n=292/308 i.e 94.8%) presented with spontaneous abortion. The remaining 16 were induced abortions (5.2%). In the two groups the majority of abortions occurred after 12 weeks of pregnancy.

MVA was successfully performed for all patients. Two patients presented with anaemia linked with MVA which required hospitalization. No uterine perforation was noted in the group of MVA.

In the misoprostol group, 23 patients had significant vaginal bleeding (14.9%), 10 patients (6.5%) had retained placental tissue that required further intervention. All patients who received misoprostol complained of abdominal pain. A few patients in the misoprostol group reported having fever n= 12(7.8%) or vomiting n= 5 (3.2%).

Patients were treated with amoxicillin and metronidazole to prevent infection.

In the MVA group, the majority of patients stayed in hospital for less than 12 hours. In the misoprostol group, the hospitalization period was 13 – 24 hours for two thirds of patients and more than 24 hours for the remaining third.

## Discussion

Management of incomplete abortion, whether spontaneous or induced, involves evacuation of the uterus with MVA or misoprostol with or without the use of mifepristone [5,6]. Most unsafe abortions occur in low-income countries where induced abortion is restricted [7] and contributes substantially to the global burden of maternal mortality and morbidity [8]. Our findings contrast with a high proportion of our patients (94.8%) reporting spontaneous abortion. African authors such as Cissé [9], Lokossou [10] and Baeta [11] have reported a high rate of spontaneous abortion as opposed to induced (ranging from 70.2%- 83%). Our findings could be explained by the fact that some patients did not say they had had an induced abortion. Induced abortion is forbidden in Chad, so women often claim to have had a spontaneous abortion even if it was induced.

Our results confirm previous studies where MVA was found to be an effective and useful tool in low resource settings for women with incomplete abortion and a uterine size of less than 12 weeks [6,7,12]. If uterine size at the time of treatment is equivalent to a pregnancy of gestational age 13 weeks or less, either vacuum aspiration or treatment with misoprostol is recommended for women with incomplete abortion. The recommended regimen of misoprostol is a single dose given either sublingually (400 µg) or orally (600 µg) [13].

**Table 1. Period during pregnancy when abortion occurred**

| Period       | MVA group<br>n (%) | Misoprostol Group<br>n (%) |
|--------------|--------------------|----------------------------|
| ≤ 12 weeks   | 34 (22.1)          | 40 (26.0)                  |
| > 12 weeks   | 120 (77.9)         | 114 (74.0)                 |
| <b>Total</b> | <b>154 (100)</b>   | <b>154 (100)</b>           |

**Table 2. Duration of hospitalization**

| Period       | MVA group<br>n (%) | Misoprostol Group<br>n (%) |
|--------------|--------------------|----------------------------|
| ≤12          | 139 (90.3)         | 00 (0)                     |
| 24 – 13      | 13 (8.4)           | 105 (68.2)                 |
| >24          | 2 (1.3)            | 49 (31.8)                  |
| <b>Total</b> | <b>154 (100)</b>   | <b>154 (100)</b>           |

The misoprostol group reported complications which were not reported in the MVA group. Tang [14], reported abdominal cramping usually starting within the first few hours but it may begin as early as 10 minutes after misoprostol administration. The pain may be stronger than that experienced during a regular period.

Specific complications linked with misoprostol like fever and vomiting were noted in our study. Blum [2] reported that chills are a common side effect of misoprostol but are transient. Fever is less common and does not necessarily indicate infection. An antipyretic can be used for relief of fever [14]. Nausea and vomiting may occur and will resolve 2 to 6 hours after taking misoprostol. An anti-emetic can be used if needed [14].

The hospitalization period was shorter in the MVA group than the misoprostol group which agrees with earlier studies [2, 9, 14, 15].

## Conclusion

This study shows that MVA is more efficient than misoprostol in the treatment of incomplete abortion. More complications are registered for the management with misoprostol. We conclude that in remote areas, misoprostol can be used when MVA is not possible. There should be special training before this so that health workers in areas where MVA is not available can inform women about cramping and fever and know how to get help when they assess the bleeding as 'too much' or there are retained products.

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