

Comparison of Misoprostol with Manual Vacuum Aspiration for The Management of Incomplete Miscarriage

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ABSTRACT

Aim:: To compare the outcomes of MVA with misoprostol in patients of first trimester miscarriage.

Methods: This trial involving 300 patients was conducted in Sheikh Zayed Medical College/Hospital, Rahim Yar Khan. Patients who presented with incomplete miscarriage, having ongoing bleeding, open-cervical-os, and pregnancy duration ≤ 12 weeks were selected. Misoprostol group received misoprostol tablet 400 mcg (Cytotec, Searle) sub-lingually was given, a maximum number of 3 doses were given. In group 2, MVA was done, in these patients no uretero-tonic drug was given. Success rate and complications of both procedures was noted after 7 days of discharge using trans-vaginal ultrasonography.

Results: Mean age was 29.2 ± 6.32 years in misoprostol group versus 28.7 ± 5.93 years in MVA group (p-value 0.48). Mean gestational age was 63.9 ± 12.04 days in misoprostol group versus 65.3 ± 10.90 days in MVA group (p-value 0.29). Success rate of procedure was 145 (96.67%) in MVA group versus 141 (94.0%) in misoprostol group (p-value 0.27). Heavy bleeding occurred in 22 (14.67%) patients in misoprostol group versus 06 (4.0%) patients in MVA group (p-value 0.001). Mean pain score during the procedure was 1.78 ± 0.76 in MVA group versus 2.06 ± 1.27 in misoprostol group (p-value 0.02).

Conclusion: Manual vacuum aspiration (MVA) and misoprostol both are effective methods for management of first trimester incomplete miscarriage. MVA appears to be to be safer as compared to misoprostol.

Keywords: incomplete miscarriage, manual vacuum aspiration, misoprostol.

INTRODUCTION

Miscarriage in first pregnancy trimester is a highly contributing factor of pregnancy related morbidity and mortality.^{1,2} According to published literature more than 80% abortions occur in first trimester, and the rate is reduced in subsequent trimester.³ WHO has reported 87000 maternal deaths occur in developing countries every year due to incomplete abortion in first trimester.^{4,5}

Pakistan is one of the nation's having limited resources in health care sector and has very slow decline in fertility rate as compared to other nations.⁶ A systematic review by Wen et al. reported that about 2.2-million abortions occur in Pakistan with abortion rate of 0.5% in all pregnancies.⁷

There are two options to management incomplete miscarriage either using medical management or surgical management. the most commonly available drug for medically induced abortion is misoprostol. While manual vacuum aspiration (MVA) is a commonly adopted surgical management method.

In 2010, WHO put misoprostol in routines techniques for managing incomplete abortion.⁸ Misoprostol is given in a single or multiple doses of 600 mcg. It is a safe and effective drug and a best management modality for peoples who wants to avoid any surgical procedure for abortion.⁸ However, misoprostol has some adverse effects as well such as prolonged, heavy bleeding, severe pain and sometimes infection.⁹

While MVA is still a standard management option, while high safety and success rate. And WHO recommends MVA should be used as a preferred method of first trimester abortion.¹⁰

Both MVA and misoprostol have some pros and cons so the aim of the present study is to compare the outcomes of MVA with misoprostol in patients of first trimester miscarriage.

METHODS

This trial involving 300 patients was conducted in Sheikh Zayed Medical College/Hospital, Rahim Yar Khan. Patients who presented with incomplete miscarriage, having ongoing bleeding, open-cervical-os, and pregnancy duration ≤ 12 weeks were selected for analysis. Patients with ectopic pregnancy, allergic or having contraindications for prostaglandins (hypertension, asthma), hemodynamically unstable patients and those who were anemic (Hb<9 g/dL) were excluded from analysis.

This was a randomized controlled trial and randomization was performed in a 1:1 one manner. Misoprostol group received misoprostol tablet 400 mcg (Cytotec, Searle) sub-lingually was given, a maximum number of 3 doses were given depending upon the uterine contractions and cervical-dilatation. After 1st dose of misoprostol, oxytocin infusion was started till the time of full abortion.

In group 2, MVA was done, in these patients no uretero-tonic drug was given. MVA was done using IPAS double valve syringe.

All patients were given doxycycline 100 mg b.i.d and metronidazole 400 mg t.d.s. for 5 days. Success rate and complications of both procedures was noted after 7 days of discharge using trans-vaginal ultrasonography.

Data was analyzed using SPSS v23. Comparison of continuous variables was made using un-paired sample t-

test. While qualitative variables were compared using chi-square test. P-value ≤ 0.05 was taken as significant.

RESULTS

There was no significant difference between the baseline study variables. Mean age was 29.2 ± 6.32 years in misoprostol group versus 28.7 ± 5.93 years in MVA group (p-value 0.48). Mean gestational age was 63.9 ± 12.04 days in misoprostol group versus 65.3 ± 10.90 days in MVA group (p-value 0.29). There were 08 (5.33%) patients who had

history of abortion in misoprostol group versus 11 (7.33%) patients in MVA group (p-value 0.47) [Table 1].

Success rate of procedure was 145 (96.67%) in MVA group versus 141 (94.0%) in misoprostol group (p-value 0.27). Heavy bleeding occurred in 22 (14.67%) patients in misoprostol group versus 06 (4.0%) patients in MVA group (p-value 0.001). Mean pain score during the procedure was 1.78 ± 0.76 in MVA group versus 2.06 ± 1.27 in misoprostol group (p-value 0.02) [Table 2].

Table 1: Baseline Data

	Misoprostol Group (n=150)	MVA Group (n=150)	P-value
Age (Y)	29.2±6.32	28.7±5.93	0.48
Gestational Age (days)	63.9±12.04	65.3±10.90	0.29
Parity			
Nulliparous	62 (41.33%)	65 (43.33%)	0.72
Multiparous	88 (58.67%)	85 (56.67%)	
Gravidity			
Prima-gravidity	67 (44.67%)	72 (48.0%)	0.56
Multi-gravidity	83 (55.33%)	78 (52.0%)	
History of Previous Abortion			
Yes	08 (5.33%)	11 (7.33%)	0.47
No	142 (94.67%)	139 (92.67%)	

Table 2: Comparison of Study Outcomes.

	Misoprostol Group (n=150)	MVA Group (n=150)	P-value
Success Rate	141 (94.0%)	145 (96.67%)	0.27
Heavy Bleeding	22 (14.67%)	6 (4.0%)	0.001
Pain Score	2.06±1.27	1.78±0.76	0.02

DISCUSSION

The ultimate management of incomplete-abortion is to completely evacuate the debris from uterus. Different management strategies have been searched and adopted in past for first-trimester abortion which are classified into medical, surgical and expectant management.¹¹ The widely used methods are MVA and use of prostaglandins such as misoprostol that have greatly reduced the need for surgical intervention under anesthesia.^{12,13} Misoprostol is the most common drug used for abortion but still no standard dose and route is established to get best results.¹⁴ Still there is limited evidence regarding the safety and effectiveness of available treatments options.^{13,15} Therefore, in present study we compared the outcomes of MVA with misoprostol for induced abortion in first trimester incomplete miscarriage.

In present study mean age was 29.2 ± 6.32 years in misoprostol group versus 28.7 ± 5.93 years in MVA group. In a study by Tahir et al. reported mean age 28.2 ± 5.68 years in MVA group and 26.56 ± 5.43 years in misoprostol group.¹⁶ Shochet et al. reported mean age of 28.1 ± 7.2 years versus 28.7 ± 7.1 years in MVA group.¹⁷ While Gazvani et al. 31.8 ± 5 years which is little high when compared to our and above mentioned study.¹⁸

Mean gestational age in present study was gestational age was 63.9 ± 12.04 days in misoprostol group versus 65.3 ± 10.90 days in MVA group. Tahir et al. reported mean gestational age of 66.54 days in misoprostol versus 65.75 days in MVA group (16). Ahmed et al. reported mean gestational age of 11.08 ± 2.37 weeks in misoprostol versus 11.21 ± 1.94 weeks in MVA group.¹⁹

In present study, success rate of procedure was 145(96.67%) in MVA group versus 141 (94.0%) in misoprostol group. A study by Ashraf et al. reported success rate of 94.2% in misoprostol and 92% in MVA patients.²⁰ Another study by Tripathi et al. reported success rate of 67.7% in misoprostol versus 100% in MVA patients.²¹ However, we did not found any major difference in success rate of MVA and misoprostol.

We found higher rate of complications in misoprostol group as compared to MVA group. We found higher rate of heavy bleeding and pain during the procedure in misoprostol group as compared to MVA group. Tahir et al. also reported higher rate of heavy bleeding and pain during the procedure in misoprostol group as compared to MVA patients¹⁶.

CONCLUSION

Manual vacuum aspiration (MVA) and misoprostol both are effective methods for management of first trimester incomplete miscarriage. MVA appears to be to be safer as compared to misoprostol.

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