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Research Article

Comparison between medical management and manual vacuum aspiration in cases of first trimester missed miscarriage

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ABSTRACT:

Objective: To compare medical management with manual vacuum aspiration in cases of first trimester missed miscarriage.

Material and methods: The study was carried out in the Department of Obstetrics & Gynecology THQ Hospital, Jahanian from January 2017 to June 2017. Total 104 patients with first trimester missed miscarriage of less than 12 weeks gestation diagnosed by ultrasound showing gestational sac of less than 25 mm in diameter with no fetal cardiac activity.

Results: Mean age of the patients was 29.63 ± 6.68 years, mean age of the patients of study group A was 30.23 ± 6.72 years and mean age of patients of group B was 29.02 ± 6.65 years.Patients of study group A were managed by MVA and patients of study group B were managed by Medical treatment. Efficacy was noted in 92.3% (n=48) patients and 76.9% (n=40) patients respectively in group A & B. Efficacy rate in group A was significantly (P = 0.05) higher as compared to group B.

Conclusion: Results of this study revealed that MVA is better treatment modality as compared to medical management (misoprostol intravaginally). Efficacy rate was significantly higher in MVA group as compared to medical treatment group. In older age group MVA group was found with significantly higher rate of efficacy as compared to medical management group.

Key words: Manual vacuum aspiration, dilatation and evacuation, incomplete abortion

INTRODUCTION

Spontaneous miscarriage is an unfortunate outcome of early pregnancy and is the most common cause of gynecological consultation and hospital admission.[1] Overall rate of first trimester miscarriage (below 12 weeks gestation) is 20%. Estimated annual miscarriage rate is 29 per thousand women aged 15-49 years. In public health sector, 197,000 women are treated annually for post abortion complications.[2].

For the past 50 years, surgical evacuation by dilatation and curettage (D&C) has been the primary treatment of missed abortion.[3] This procedure is generally considered safe, but complications such as infection, bleeding, uterine perforation and decreased fertility occur in up to 10 percent of women[3]. Recent studies have questioned the need for routine D&C, suggesting that expectant or medical management might be more appropriate.[3]

A medical abortion is one that is brought about by taking medications that will end a pregnancy.[4] Many drugs are used for medical abortion these

are misoprostol, mifepristone and methotrexate. Misoprostol and mifepristone are commonly used drugs for medical abortion.[5] Vaginal misoprostol is a safe, effective and acceptable methodof inducing abortion with a reportedeffectiveness of 88–94%.[6]

Another way to treat first trimester missed miscarriage is by means of manual vacuum aspiration. It is the most common method in our setup believe to be safe and cost effective in experienced hands. But even with advancement in medical science, unsafe abortion related complications contribute to 10 to 13% in developing countries.[7]

OPERATIONAL DEFINITION

Efficacy: Efficacy was measured in term of complete abortion:

Complete Abortion: When the uterine cavity is empty on pelvic USG.

Manual Vacuum Aspiration (MVA): MVA was performed using a flexible "Ipas Easy Grip" cannula attached to a 60 ml syringe (aspirator), with a double locking valve mechanism (IPAS Chapel Hill NC 27514 USA).

Medical Management: 800µg misoprostol was given intraviginally.

First Trimester Missed Abortion:

Diagnosis was made by the presence of all of them:

1. Regression of pregnancy symptom like nausea, vomiting, morning sickness.
2. Smaller size of uterus in relation duration of pregnancy on bimanual pelvic examination.
3. Absent cardiac activity on ultrasound.

MATERIAL AND METHODS

The study was carried out in the Department of Obstetrics & Gynecology THQ Hospital, Jahanian from January 2017 to June 2017. Total 104 patients having age 18-40 years with first trimester missed miscarriage of less than 12 weeks gestation diagnosed by ultrasound showing gestational sac of less than 25 mm in diameter with no fetal cardiac activity were selected.

Patients with known hypersensitivity to misoprostol, gestation >12 weeks, patients having ectopic pregnancy or molar pregnancy, patients with septic abortion, patients with previous c-section were exclude from the study.

Selected patients were divided into two equal groups A and B. In group A Manual Vacuum Aspiration was done and in Group B Misoprostolwas given intra virginally.

In Group A, prophylactic antibiotic (Doxycycline 100 mg)was given 1 hour before the procedure and oral analgesic (tab valium and tab brufen) was also given. Local analgesia in the form of paracervical block was given. Uterine cavity was evacuated with manual vacuum aspiration. Effectiveness was measured in terms of complete evacuation (Yes/No), which was confirmed peroperatively when pink or red foam without RPOC's passed through the cannula. Incomplete evacuation was diagnosed when products of conception were passing continuously inspite of inserting cannula more than 4 times and another procedure was requiredto evacuate the uterus.

Second group consisted of patients receiving misoprostol intra vaginally. Each case received misoprostol 800µg per vagina with 2.5ml hydroxyethyl gel. The misoprostol was obtained as white powder made by crushing tablets of Cytotec (Searle, Skokie, Illinois, USA). The white powder was mixed with repacked sterile 2.5ml hydroxyethyl gel (SmithKline, Glaxo, Karachi, Pakistan) and the mixture was drawn into a sterile 5ml disposable syringe without a needle. Then squirted into posterior vaginal fornix and the time was noted. Pelvic USG was performed, if found the RPOCs then 400µg misoprostol was repeated at six hourly intervals for maximum two doses. Final outcome was assessed after 18 hours (on completion of 3 doses).

Efficacy of both groups was noted in pre-designed proforma. Demographic data of all the patients was also be entered in performa.

All the data was entered in SPSS V17 for statistical analysis. Quantitative variable like age, gestational agewas presented as mean ± SD, while

qualitative variable like efficacy and paritywas presented in frequency and percentages. Chi-square test was applied to compare the efficacy in both groups. Stratificationwas done for age,gestational age and parity. Post stratification. Chi-square test was applied to see the level of significance.P-values $\leq$ 0.05 was considered statistically significant.

RESULTS

In this randomized controlled trial, total 104 patients with first trimester missed miscarriage of less than 12 weeks gestation were included in this study. Mean age of the patients was 29.63 ± 6.68 years, mean age of the patients of study group A was 30.23 ± 6.72 years and mean age of patients of group B was 29.02 ± 6.65 years.Patients of study group A were managed by MVA and patients of study group B were managed by Medical treatment.

Efficacy was noted in 92.3% (n=48) patients and 76.9% (n=40) patients respectively in group A & B. Efficacy rate in group A was significantly (P = 0.05) higher as compared to group B. (Table 1)Patients were divided into two age groups i.e. age group 20-30 years and age groups 31-40 years.

Total 25 patients of group A 32 patients of group B belonged to age group 20-30 years and efficacy was noted in 88% (n=22) patients of group A and 84.4% (n=27) patients of group B. But insignificant (P = 1.00) difference of efficacy was noted. Total 27 patients of group A and 20 patients of group B belonged to age group 31-40 years. Efficacy was noted in 96.3% (n=26) patients and 65% (n=13) patients of group A and B. Difference of efficacy rate between the both groups was statistically significant with p value 0.007. (Table 2)

Patients were divided into two groups according to their gestational age i.e. 1-6 weeks gestation and 7-12 weeks gestation.

In 1-6 weeks gestation group, there were 29 patients in group A and 33 patients in group B. Efficacy was noted in 86.2% (n=25) patients of group A and 75.8% (n=25) patients of group B but the difference of efficacy rate was statistically insignificant (P = 0.350) between the both groups. In gestation group 7-12 weeks, there were 23 patients in group A and 19 patients in group B. Efficacy was noted 100% (n=23) patients of group A and 78.9% (n=15) patients of group B and the difference was statistically significant (P = 0.034) between the both groups for efficacy.

In study group A and B, total 9 patients and 17 patients respectively were primary paras and efficacy was noted in 9 (n=100%) patients and 76.5% (n=13) patients of group A and B. Difference for efficacy rate was statistically insignificant (P = 0.263). In study group A, 22 patients were multiparas and in group B, 19 patients were multiparas.

Efficacy was noted in 86.4% (n=19) patients and 84.2% (n=16) patients of group A and B respectively. But the difference of efficacy between both groups was statistically in insignificant (P = 1.00). Total 21 patients and 16 patients of group A and B were grand multiparas. Efficacy was noted in 95.2% (n=20) patients and 68.8% (n=11) patients of group A and B. Difference of efficacy between the both groups was statistically insignificant (P = 0.066). (Table 4)

Group	Efficacy		Total	P value
	Yes	No		
A	48 92.3%	4 7.7%	52	0.05
B	40 76.9%	12 23.1%	52	

Table 1: Comparison of efficacy for both groups

Table 2: Comparison of efficacy for age groups

Group	Efficacy		Total
	Yes	No	
Age group 20-30 year (P = 1.00)			
A	22 88.0%	3 12.0%	25
B	27 84.4%	5 15.6%	32
Age group 31-40 years (P = 0.007)			
A	26 96.3%	1 3.7%	27
B	13 65.0%	7 35.0%	20

Table 3: Comparison of efficacy for different gestational age groups

Group	Efficacy		Total
	Yes	No	
1-6 weeks (P = 0.350)			
A	25 86.2%	4 13.8%	29
B	25 75.8%	8 24.2%	33
7-12 weeks (P = 0.034)			
A	23 100.0%	0	23
B	15 78.9%	4 21.1%	19

Table 4: Comparison of efficacy for parity

Group	Efficacy		Total
	Yes	No	
Primary para (P = 0.263)			
A	9 100.0%	0	9
B	13 76.5%	4 23.5%	17
Multipara (P = 1.00)			
A	19 86.4%	3 13.6%	22
B	16 84.2%	3 15.8%	19
Grand multipara (P = 0.066)			
A	20 95.2%	1 4.8%	21
B	11 68.8%	5 31.2%	16

DISCUSSION

It is highly important to prioritize the options for management of early pregnancy losses because high prevalence of miscarriage and related complications has substantial health and economic cost. Manual vacuum aspiration (MVA) is an alternative to the standard surgical curettage, performed under local anesthesia. Manual vacuum aspiration can be performed without the need for a fully equipped operation theatre as it does not need electricity and can be carried out under Para-cervical block. In countries with a small number of physicians, manual vacuum aspiration can be safely and effectively used by mid-level health care providers such as mid-wives. World health organization (WHO) recommends as the manual vacuum, aspiration preferred methods for the first trimester abortion.[8]

In present study, patients of study group A were managed by MVA and patients of study group B were managed by Medical treatment. Efficacy was noted in 92.3% patients and 76.9% patients

respectively in group A & B. Efficacy rate in group A was significantly (P = 0.05) higher as compared to group B.

Bique et al[9] have compared the efficacy of MVA with that of the misoprostol for treatment of incomplete abortion. Follow-up at seven days' post-treatment reported success rate of 100% for MVA and 91% for misoprostol (100% vs. 91%; p 0.002). The results of the study favor manual vacuum aspiration as the preferred method for uterine evacuation during first trimester of pregnancy. This method is faster and more efficacious than medical termination with misoprostol especially at 9-12 weeks of gestation.[10]

In one study by Tasnim N et al,[11] complete evacuation was achieved in 89.6% with manual vacuum aspiration. In a study by Hemlin J et al[13] success rate with manual vacuum aspiration was 95.2%. Edwards S et al[12] also reported success rate with manual vacuum aspiration as 98%. Ansari R et al[14] found success rate with manual vacuum aspiration as 97.7%. All these studies are in agreement with our findings.

The success rates of medical evacuation vary from 25% up to 97% for oral, sublingual or vaginal misoprostol in different studies.These variations between studies probably reflect the different misoprostol regimens used, routes of administration, and the definitions of success rate.[15]

In one study by Shuaib AA et al[15]52 women were allocated to receive intravaginal misoprostol, 80.7% achieved a successful complete expulsion of the products of conception. Shankar M et al[16] also concluded that 77.3% women achieved successful complete medical evacuation by receiving misoprostol. Shah N et al[17] also found 48% success rate with intragivinal misoprostol for the complete evacuation of first trimester missed abortion. Results of all these studies are also in agreement with our study. In our study mean age of the patients was 29.63 ± 6.68 years, mean age of the patients of study group A was 30.23 ± 6.72 years and mean age of patients of group B was 29.02 ± 6.65 years.The mean age of the study population and the mean gestational age in our study are also comparable with that of Gazvani et al 2004.[18]

CONCLUSION

Results of this study revealed that MVA is better treatment modality as compared to medical management (misoprostol intravaginally). Efficacy rate was significantly higher in MVA group as compared to medical treatment group. In older age group MVA group was found with significantly higher rate of efficacy as compared to medical management group.

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