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ORIGINAL ARTICLE

A Comparative Study of Sublingual Misoprostol and Manual Vacuum Aspiration for Incomplete Abortion Treatment

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ASBTRACT

Objective: The purpose of this analysis is to do the comparison of sublingual misoprostol and manual vacuum aspiration for the incomplete abortion treatment.
Study Design: Randomized/Control Trial
Place and Duration: Department of Gynecology and Obstetrics of Combined Military Hospital, Peshawar from January 2021 to December 2021.
Methods: There were 108 women with ages 18-50 years were presented in this study. All the included women had incomplete abortion. Age, BMI, gestational age, and parity were among the specific demographics of the recruited cases that were documented after receiving written, informed consent. 54 females received sublingual misoprostol (600mg) in group I and 54 patients of group II manual vacuum aspiration. Post-treatment outcomes among both groups were assessed in terms of decreased hemoglobin, side effects, abortion completion and satisfaction rate by using visual analogue scale. SPSS 24.0 was used to analyze all data.
Results: Among 108 females, 35 (32.4%) patients had age 18-30 years, 55 (50.9%) had age 31-40 years and 18 (16.7%) had age >40 years. 60 (55.6%) had BMI <25kg/m^2 and 48 (44.4%) had BMI >25kg/m^2. Mean parity of the females were 2.04±3.19 and mean gestational age was 13.4±8.61 weeks. In group I hemoglobin level <1 g/dl was lower found in 27 (50%) cases as compared to group I in 35 (64.8%) cases. Frequency of side effects in group I was higher 38 (70.4%) as compared to group II 22 (40.7%) with p value 0.006. Frequency of complete abortion in group II was higher in 50 (92.6%) as compared to group I 39 (72.2%) with (p<0.003). Satisfaction rate was higher in manual vacuum aspiration group as compared to sublingual misoprostol group.
Conclusion: This study exhibited that MVA was effective and satisfactory among patients of incomplete abortions in terms of decreased hemoglobin level, less side effects and higher number of complete abortions.
Keywords: Incomplete abortion, Hemoglobin level, Side Effects, Complete Abortion

INTRODUCTION

There is a higher rate of maternal death and morbidity in low-income nations due to incomplete abortions [1]. Each year, 87,000 maternal fatalities in underdeveloped nations are attributed to abortions that were not completed properly, according to the World Health Organization [2]. Successful medical, surgical, and expectant management of incomplete abortions is possible (using misoprostol with mifepristone or without mifepristone). Surgical treatment has been the 1st line for many years because of its well-established efficacy and safety in settings with access to high-quality medical care [3]. The uterus evacuation with sharp curettage or MVA is the standard surgical therapy in Chad for incomplete abortions, whether they are spontaneous or induced. Incomplete abortions are treated with MVA in our clinic and at other N'D jamana hospitals since 2010 [4]. Misoprostol-assisted medical abortion is gaining popularity as a practical and inexpensive method of uterine evacuation [1].

Misoprostol, a prostaglandin E2 analog, is increasingly recognized as effective, acceptable and safe method of achieving uterine evacuation in females who require PAC services as it does not require immediate sterile equipment, skilled personnel or operating rooms. [5]. For these and other reasons, misoprostol is an attractive replacement for PAC with MVA, especially in places with limited access to healthcare and supplies [6]. A single oral dosage of 600 mcg of misoprostol is suggested for incomplete abortion medical management [7]. Misoprostol can be delivered via numerous methods in obstetric and gynecological practice. The fact that misoprostol drastically lowers the post-abortion cost by doing away with the need for expensive factors like dedicated operating room, sterile instruments, and highly trained personnel is crucial in our resource-poor setting with its accompanying under-developed health insurance system. These benefits will increase if a more manageable method of administration is found that permits a lower dosage of misoprostol to be used. Misoprostol 400 mcg given sublingually as a single dosage appears to provide these further benefits. This dosing and delivery method is also related with excellent patient satisfaction and acceptance. [7]. Scaling up PAC services in our context necessitates the practice of misoprostol via the most accessible route and most efficacious low dosage, as MVA for uterine evacuation is a common emphasis of post abortion care services and training [8,9].

As opposed to MVA, misoprostol was shown by Weeks et al. to have less side effects in patients who experienced incomplete abortions. [10] While the patients in the group of misoprostol experienced less discomfort than the group of MVA, they experienced more loss of blood. The rates of acceptability were identical between the misoprostol group and the MVA group, whereas rates of satisfaction were 95.1% in the group of misoprostol and 94.2% in the group of MVA. [11] Several gynecological issues are linked to incomplete abortions in Pakistan. There is a lack of information on how misoprostol and MVA compare in terms of blood loss after incomplete abortion. [12,13] Therefore, it is crucial to evaluate both therapies to establish best practices for maternal health.

MATERIAL AND METHODS

This Randomized control trial was conducted at the Department of Gynecology and Obstetrics, Combined Military Hospital, Peshawar from January 2021 to December 2021 and comprised of 108 females. Age, BMI, gestational age, and parity were among the specific demographics of the recruited cases that were documented after receiving written, informed consent. People who had an allergy to prostaglandins (such as asthma, hypertension, or glaucoma), or who were suspected of having an ectopic pregnancy were not eligible for the study. Patients having a history of hemodynamic instability, a scarred uterus, anaemia of less than 9 g/dl, or a prior miscarriage that required surgical evacuation were also excluded.

Women with a uterine size ≤12 weeks postmenstrual were eligible for the trial, as were women with incomplete abortions, vaginal bleeding, open cervical os and vaginal bleeding history during ongoing pregnancy. Group I got a single dosage of 600 micrograms of sublingual misoprostol, while Group II underwent MVA to remove retained products of conception. Hemoglobin levels were taken both before and after the therapy (after 48 hours). Independent t-tests were used to compare baseline data with post-intervention findings. A Chi-square test was performed to examine the correlation between the variables. SPSS 24.0 was used to analyze all data.

RESULTS

Among 108 females, 35 (32.4%) patients had age 18-30 years, 55 (50.9%) had age 31-40 years and 18 (16.7%) had age >40 years. 60 (55.6%) had BMI <25kg/m^2 and 48 (44.4%) had BMI >25kg/m^2. Mean parity of the females were 2.04±3.19 and mean gestational age was 13.4±8.61 weeks. (table 1)

Table-1: Presented patients with detailed demographics

Variables	Frequency	Percentage
Age Group (years)		
18-30	35	32.4
31-40	55	50.9
>40	18	16.7
BMI		
<25kg/m^2	60	55.6
>25kg/m^2	48	44.4
Mean parity	2.04±3.19	
Mean Gestational age (weeks)	13.4±8.61	

In group I hemoglobin level <1 g/dl was lower found in 27 (50%) cases as compared to group I in 35 (64.8%) cases.(figure 1)

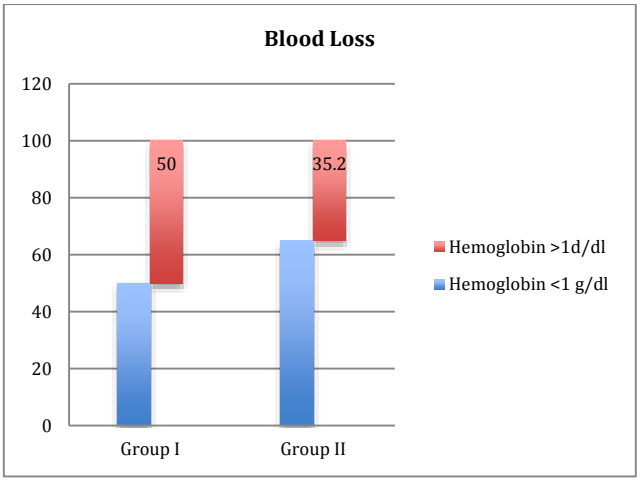

Figure-1: Post-treatment comparison of blood loss among both groups

Frequency of side effects in group I was higher 38 (70.4%) as compared to group II 22 (40.7%) with p value 0.006. Abdominal pain, nausea, diarrhea, bleeding and chill were most common side effects among both groups.(table 2)

Table-2: Post-treatment association of side effects

Variables	Group I	Group II
Side Effects		
Yes	38 (70.4%)	22 (40.7%)
No	16 (29.6%)	32 (59.3%)
Types		
Abdominal pain	20 (37.03%)	17 (31.5%)
Nausea	4 (7.4%)	2 (3.7%)
Diarrhea	5 (9.3%)	1 (1.9%)
Bleeding	7 (12.96%)	1 (1.9%)
Chill	2 (3.7%)	1(1.9%)

Frequency of complete abortion in group II was higher in 50 (92.6%) as compared to group I 39 (72.2%) with (p<0.003).(figure 2)

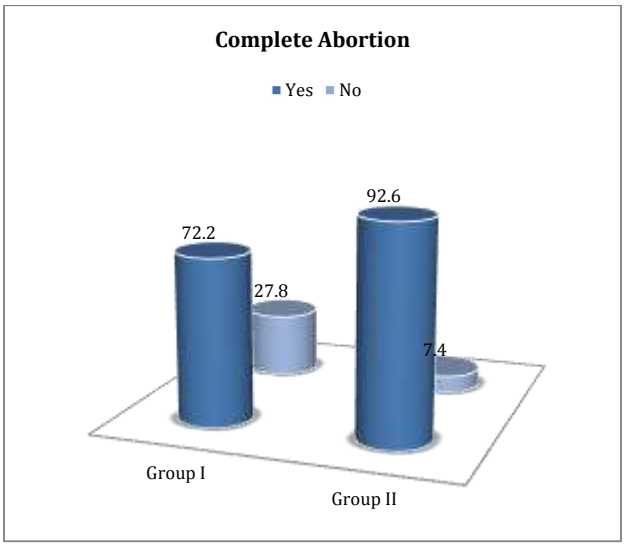

Figure-2: Outcomes among both groups

Satisfaction rate was higher in manual vacuum aspiration group as compared to sublingual misoprostol group. Mean hospitalization was lower in MVA group 9.5±11.20 hrs and group I was 20.9±10.31 hrs. (table 3)

Table-3: Comparison of hospital stay and satisfaction among females

Variables	Group I	Group II
Mean Hospitalization (hrs)	20.9±10.31	9.5±11.20
Satisfaction		
Yes	42 (77.8%)	49 (90.7%)
No	12 (22.2%)	5 (9.3%)

DISCUSSION

The uterus evacuation with misoprostol or MVA, with or without mifepristone, is the standard treatment for incomplete abortions, whether they are spontaneous or induced [14]. Unsafe abortions account for a disproportionate share of maternal deaths and complications worldwide [15], especially in countries having low-income where access to induced abortion is limited. [16] About 10–18 percent of pregnancies end in spontaneous abortion [17], and a similar number are terminated by choice because of an unplanned pregnancy. For instance, in Nigeria, the rate of induced abortions was found to be between 33 and 46 per 1,000 women of reproductive age [18]. It is important to remember that improper management of either of these groups might result in incomplete abortion and its associated morbidities and death. As a result, the importance of developing a non-invasive, less expensive, and more accessible treatment option is paramount.

In this analysis 108 patients of incomplete abortion were included. Among 108 females, 35 (32.4%) patients had age 18-30 years, 55 (50.9%) had age 31-40 years and 18 (16.7%) had age >40 years. 60 (55.6%) had BMI <25kg/m^2 and 48 (44.4%) had BMI >25kg/m^2. Mean parity of the females were 2.04±3.19 and mean gestational age was 13.4±8.61 weeks. These demographics were comparable to the studies conducted in past. [19,20] Our findings corroborate the findings of other studies [21] that indicated MVA to be beneficial and effective intervention in low resource settings for females with incomplete abortion and a uterine size ≤12 weeks. The misoprostol treatment or Vacuum aspiration is advised for women experiencing an incomplete abortion if the size of their uterus at the time of treatment is comparable to a pregnancy of 13 weeks' gestational age or less. Misoprostol should only be

administered as a single dosage, either sublingually (400 g) or orally (600 g) [22].

We found that the misoprostol group saw a lower decrease in hemoglobin of <1g/dl as compared to MVA group. Sexana et al. found that the MVA group experienced fewer adverse events and higher pain levels than the misoprostol group. [23] Misoprostol used orally was shown to be more tolerable and appropriate in health care settings with less available resources. Women in the misoprostol group were more happy with the process overall and more likely to utilize the treatment again. [24] On the other hand, earlier research has shown that misoprostol had an 88.4 percent success rate in Ibadan, Nigeria [25] and an 86.1 percent success rate in Burkina Faso [26]. It's also lower than the 91.8% found in a cross-country study of sub-Saharan Africa [27], the 98.3% found in Egypt [28], and the 99.4% found in Senegal [29].

Frequency of side effects in group misoprostol group was higher 38 (70.4%) as compared to group II 22 (40.7%) with p value 0.006. Abdominal pain, nausea, diarrhea, bleeding and chill were most common side effects among both groups. Comparable to the previous study.[30] In our study, frequency of complete abortion in group II was higher in 50 (92.6%) as compared to group I 39 (72.2%) with (p<0.003). Satisfaction rate was higher in manual vacuum aspiration group as compared to sublingual misoprostol group. Mean hospitalization was lower in MVA group 9.5±11.20 hrs and group I was 20.9±10.31 hrs. These were comparable to the study conducted in past.[31] According to other research, MVA and misoprostol both had similar efficacy, safety, and patient acceptability for treating first-trimester, incomplete abortions without complications.[32,33]

CONCLUSION

This study exhibited that MVA was effective and satisfactory among patients of incomplete abortions in terms of decreased hemoglobin level, less side effects and higher number of complete abortions.

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