

Compare the Beneficial Effects of Manual Vacuum Aspiration (MVA) with Dilation and Curettage (DNC) in the Management of Early Pregnancy

SANIA HAFEEZ¹, SABA NASIR², AISHA SIDDIQUA³, NAJMA BIBI⁴, HINA FAZAL KHATTAK⁵, RIFFAT TANVIR⁶

¹Women Medical Officer Women and Children hospital Rajjar Charsadda

^{2,3}District Gynaecologist, District Headquarter Hospital Haripur

⁴Assistant Professor Gyne and Obs, Gomal Medical College and Zanana Teaching Hospital DI Khan

⁵Women Medical Officer, Mian Rashid Hussain Shaheed Memorial Hospital Pabbi

⁶Women Medical Officer Consultant Gynaecologist, Hamza Hospital, Lahore

Corresponding Author: Dr Sania Hafeez, Email Address: saniahafeez22@yahoo.com, Phone No: +923358361906

ABSTRACT

Objective: The aim of this study is to compare the beneficial effects of Manual vacuum aspiration (MVA) with dilatation and curettage (DNC) in the management of early pregnancy failures.

Study Design: Randomized control trial

Place and Duration: Study was conducted at Hayatabad Medical Complex Peshawar for duration of one year from 1st December 2019 to 30th November 2020.

Methods: Total one hundred and forty patients were presented in this study. Patients details demographics were recorded age, BMI were recorded after taking written consent. Patients were arranged to divide into two groups I and II. Group I had 70 patients underwent for DNC and group II with 70 patients undergone for MVA. Patients with pregnancy failure of weeks < 16 were enrolled. Effectiveness and frequency of complication were measured among both groups. Complete data was analyzed by SPSS 22.0 version.

Results: Mean age of the patients in group I was 30.53±2.7 years with mean BMI 26.25±7.9 kg/m² while in group II mean age was 29.47±6.5 years with mean BMI 25.52±7.9 kg/m². Mean duration of the procedure was higher in DNC group I 11.05±2.05 minutes and in group II MVA was 5.09±4.7 minutes. Hospital stay was lower in group II 4.35±2.3 hours as compared to group I 9.85±3.1 hours. Mean VAS score was significantly greater in DNC group 7.32±2.17 as compared to MVA group 4.18±1.16. Frequency of complications observed higher in group I than that of group II. But Efficacy was relatively higher in group II.

Conclusion: In this research, we concluded that the MVA method for early pregnancy failures was successful, safe and reliable as compared to dilatation and curettage (DNC).

Keywords: MVA, Early pregnancy failures, Dilatation and curettage, Complications

INTRODUCTION

The most common treatment complication is early pregnancy mistake, which contributes to 10-20% of clinically recognised pregnancies[1]. Around one out of four women will suffer such a failure in her life[2]. In Pakistan, there are about 890,000 women in missing or incomplete errors per year and the annual incidence of miscarriage estimated to be 29 per thousand females aged between 15 and 49 years[3]. Every year 197,000 women in the public health system are being screened for the complication of post-abortion[4]. Uncertain miscarriage-related complications lead to 10-13 per cent of maternal mortality in developing countries, despite advances in health technology[5]. Optional expectant, medicinal (misoprostol) and surgical options for early pregnancy patients are (sharp curettage and vacuum aspiration). The reports show that women do not accept medical care because they are unsure about how effective they are. Dilatation and evacuation or suction evacuation are the surgical choice for women. Dilatation and evacuation is as successful as 98%, but has side-effects such as perforation of the uterus, infection 6%, 4% cervical trauma, and blood loss greater than 100ml in 22% of patients.

Manual vacuum aspiration is an alternative to the conventional form of surgery. A procedure for uterine evacuation is a manual vacuum aspiration. The MVA technology is simple, secure, effective, portable, low-

cost[7]. The MVA is 100% efficient and has a lower blood loss, a lower time consumption, a short hospital stay and thus a lower cost[6]. You are safe to use local anesthetics and non-steroidal anti-inflammatory medication (NSAID) like ibuprofen in a clinical or physician's office. This technique is in use for last three decades[8] initially for incomplete miscarriage but currently it is being used for missed miscarriage, molar pregnancy, medical termination of pregnancy and endometrial sampling. Complications are rare less than 2%.

Over the last 30 years, clinical studies have demonstrated that MVA has been effective and very safe. As the preferred method for uterine evacuation, the World Health Organization (WHO) recommends MVA [9]. Studies show that MVA's effectiveness is comparable to EVA and successfully managed early-choice abortion and early pregnancy loss in approximately 99 percent of cases. Research shows that 98 percent of aspiration procedures are complicated, well above the alternative D&C procedure, which can result in excessive blood loss incidences, a pelvic infection, cervical damage and uterine perforation [10]. Over the past 30 years, clinical trials have shown MVA to be efficient and very safe. As a preferable uterine evacuation method, the World Health Organization recommends MVA. Studies have shown that MVA's effectiveness is comparable with EVA and has proven successful for early optional abortion and early pregnancy

loss management in approximately 99 percent of cases. Research has shown that 98% of vacuum aspiration processes take place without complications, well above alternative D&C which can cause excessive blood loss, pelvic infections, cervical injuries and uterine perforation [10]. Though its use in most hospitals is easy, inexpensive, and easy to use because the clinicians don't know the use of the tool. A high success rate with no significant MVA complications shows that the technology is safe and easy to learn [11]. Maintaining MVA was used for elective ending of pregnancy and incomplete miscarriage [12-14] by the study published so far.

MATERIAL AND METHODS

This randomized control trial was conducted at Hayatabad Medical Complex Peshawar for duration of one year from 1st December 2019 to 30th November 2020 and comprised of 140 patients. Patients' detailed demographics were recorded after taking written consent. Patients with ectopic pregnancy, pregnancy with fibroids, septic abortion and unwilling patients were excluded from this study.

Patients were arranged to divide into two groups I and II. Group I had 70 patients underwent for DNC and group II with 70 patients undergone for MVA. Patients with pregnancy failure of weeks < 16 were enrolled. Effectiveness and frequency of complication were measured among both groups. Categorical variables were measured by percentage and frequency. Numerical variables were calculated by standard deviation. Chi square and T test were used. Complete data was analyzed by SPSS 24.0 version.

RESULTS

Mean age of the patients in group I was 30.53±2.7 years with mean BMI 26.25±7.9 kg/m² while in group II mean age was 29.47±6.5 years with mean BMI 25.52±7.9 kg/m². Mean duration of the procedure was higher in DNC group I 11.05±2.05 minutes and in group II MVA was 5.09±4.7 minutes. Hospital stay was lower in group II 4.35±2.3 hours as compared to group I 9.85±3.1 hours. Average gestational age among patients was 10.64± 3.78 weeks. (table 1)

Table 1: Baseline detailed demographics of enrolled cases

Variables	Group I (DNC)	Group II (MVA)
Mean age (years)	30.53±2.7	29.47±6.5
Mean BMI (kg/m ²)	26.25±7.9	25.52±7.9
Mean Duration (minutes)	11.05±2.05	5.09±4.7
Mean hospital stay (hours)	9.85±3.1	4.35±2.3
Gestational age(weeks)	10.35± 1.22	10.08± 1.07

Table 2: Comparison of effectiveness and complications among both groups

Variables	Group I (n=70)	Group II (n=70)
Effectiveness		
Yes	55 (78.6%)	65 (94.3%)
No	15 (21.4%)	5 (5.7%)
Mean pain Vas	7.32±2.17	4.18±1.16
Complications		
Bleeding	5 (7.14%)	2 (2.9%)
Cervical trauma	2 (2.9%)	1 (1.43%)
Uterine perforation	2 (2.9%)	0
RPOC	2 (2.9%)	1 (1.43%)
Infection	4 (5.7%)	1(1.43%)

Mean VAS score was significantly greater in DNC group 7.32±2.17 as compared to MVA group 4.18±1.16. Frequency of complications observed higher in group I than that of group II. But Efficacy was relatively higher in group II. (table 2)

DISCUSSION

The options to control early-pregnancy losses are extremely valuable, as there are significant health and economic costs associated with high incidence of miscarriage and related complications. Manual vacuum aspiration (MVA) is an alternative to the traditional local anesthesia surgical curettage. Hand vacuum aspiration can be carried out, as there is no electrical need and can be carried out under paracervical block, without the need for fully fitted operation theater. Manual aspirations can be safely and easily implemented by medium-sized providers including mid-wives in countries with a limited number of physicians. As manual vacuum, the WHO suggests methods of aspiration for the first quarter of abortion. [15]

In the first 16 weeks of pregnancy, early pregnancy loss is characterized as loss of pregnancy. For early pregnancy failure, different treatment modalities are available. Each procedure has its advantages and inconveniences. MVA was found to be an effective non-invasive method compared to DNC in this research. These results are similar with Jayashree V et al study [16], 's which found that, contrary to dilatations and curettage, manually-aspiratory MVA was the more efficiently, less time consuming, without a heavy blood loss. Farooq F et al [17] reported consistently that MVA is an early pregnancy failure treatment choice with a lower blood loss rate, less time, less stay in hospital and less complications, including lower compared to dilation and curettage procedures, which is more successful for early pregnancy failure.

Total 140 patients with a mean age 30.53 ± 2.7 years with a mean BMI 26.25 ± 7.9 kg/m² were presented in our sample. In DNC Group 7.32±2.17 the mean VAS score was markedly higher compared to 4.18±1.16 for MVA Group. [18] In contrast to the MVA community, Ara J et al. [19] also found less pain in the evacuation of preserved design technique items. This study also shows a substantially greater incidence of cervical trauma and serious bleeding among DNC patients than MVA patients (p=0.001). Farooq F et al and Fatima Y et al have stated that in the dilatation and curettage procedure category, complications including infection, blood loss, cervical laceration and incomplete evacuation compared with MVA have been found to be higher. [17,18]

The effectiveness of MVA has been 94.3 percent, in line with previous studies findings, namely Gazvani 2004 [20]. Our report also compares the mean age of the study population and the mean gestational age 10.35±1.22 with Gazvani 2004. Another research showed that 99% of elective and spontaneous abortion cases have been active with MVA. The efficiency of the vacuum is comparable with EVA [10]. For incomplete abortion therapy, Bique et al have contrasted the effectiveness of MVA with misoprostol. Seven-day follow-up showed 100% success rate for MVA and 91% success rate for misoprostol (100% vs. 91%, p 0.002) [21]. The findings favor manually sucked vacuum as the chosen form for uterine removal in the first quarter of

pregnancy and are quicker and more efficient than a 9-12 weeks gestation medical finishing with misoprostol. [22] The report is not available.

Another operation for early pregnancy loss is dilatation and curettage. This procedure involves general anesthesia, takes more time, is more complicated, and is expensive. [23] The selection depends also on the choice of the surgeon. This is therefore a single center analysis and further studies are recommended with a view to assessing the safety and effectiveness of this technique. In addition, a classified gynecologist carried out the operation in our case. This may be one explanation why MVA is better. Other healthcare providers must be adequately qualified to achieve a better outcome in remote areas in which Gynecologists may not be available.

CONCLUSION

In this research, we concluded that the MVA method for early pregnancy failures was successful, safe and reliable as compared to dilatation and curettage (DNC).

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