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# Comparison of efficacy of manual vacuum aspiration with dilatation and curettage (d&c) in women with first Trimester Pregnancy loss

**Nabeela Rauf[1], Muhammad Adnan Khan Khattak[2] and Samia Shaheen[1]**

[1]Health Department, Khyber Pakhtunkhwa, Pakistan
[2]Liaqat Memorial Hospital Kohat, Pakistan

***Corresponding Author:** Muhammad Adnan Khan Khattak, Nabeela Rauf, Liaqat Memorial Hospital Kohat, Pakistan, Tel: +92332902431; Email: raufnabeela@gmail.com; dr_adnan_77@yahoo.com

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## Abstract

**Introduction:** Pregnancy loss during the first trimester is a regular occurrence in women's lives, accounting for 14 to 19 percent of all acknowledged pregnancies. Approximately one in four women experience such a loss in her lifetime and according to the most recent national figures available, the annual miscarriage rate for women aged 15 to 49 is 29 per 1000. On an annual basis, there are approximately 890,000 women in Pakistan who present with symptoms of a missed or incomplete miscarriage. The global percentage of unsafe abortions is continually rising; in 2008, it was 49 percent, up from 44 percent in 1995. Surgical, medicinal, and expectant management are all options for first trimester miscarriage treatment. Medical management is not popular among women, according to reports, because it is difficult to anticipate results (20 percent -80 percent). Dilatation and curettage (D&C) and manual vacuum aspiration (MVA) are the two methods for surgical evacuation. D&C has been linked to prolonged patient care periods, including predefined management, and is usually performed in theatre, according to studies.

As a result, there has been a move toward MVA, which is not only less traumatic but also offers a few clinical advantages over D&C.

**Objective:** Assessment of efficacy of manual vacuum aspiration with dilatation and curettage in women presenting with first trimester pregnancy loss.

**Materials and Methods:** It were a six months study carried out in Department of Gynecology and Obstetrics, Hayatabad Medical Complex Peshawar from January 2019 to July 2019. A total of 146 patients were included and divided into two groups. Both groups were analyzed for the efficacy of the procedures.

**Results:** Efficacy among two groups was analyzed as in Group A (Manual vacuum aspiration) was effective in 69(94%) patients and was not effective in 4(6%) patients. Where as in Group B (Dilatation and curettage) was effective in 58(80%) patients and was not effective in 15(20%) patients.

**Conclusion:** Our study concluded that manual vacuum aspiration is a better treatment option for first trimester miscarriages than dilatation and curettage and is accepted by the patients as well.

**Keywords:** Abortion; Dilatation and curettage; Manual vacuum aspiration

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## Introduction

Pregnancy loss during the first trimester is a regular occurrence in women's lives, accounting for 14 to 19 percent of all acknowledged pregnancies. Approximately one in four women experience such a loss in her lifetime and according to the most recent national figures available, the annual miscarriage rate for women aged 15 to 49 is 29 per 1000 [1]. On an annual basis, there are approximately 890,000 women in Pakistan who present with symptoms of a missed or incomplete miscarriage [2]. The global percentage of unsafe abortions is continually rising; in 2008, it was 49 percent, up from 44 percent in 1995 [3]. The World Health Organization estimates that between 40 and 50 million abortions are carried out every single year across the globe. This equates to over 125,000 abortions taking place every single day [4]. In the United States, where almost half of pregnancies are unintended and where abortions account for forty percent of all terminations, there are more than three thousand abortions performed every single day [5]. Twenty (22) percent of all pregnancies in the United States are terminated through abortion (excluding miscarriages) [6]. Around 73 million women have their pregnancies terminated through medical means every year all over the world. Abortions are induced in three out of ten pregnancies, which accounts for a total of 29 percent of all pregnancies. Induced abortions occur in six out of ten unintended pregnancies (61 percent). It is estimated that approximately 45 percent of all abortions are carried out in unsafe conditions, with 97 percent taking place in developing nations [7]. Estimates from around the world indicate that between 2010 and 2014, approximately 45 percent of all induced abortions were risky. One-third of all abortions that were unsafe were carried out in the most unsafe circumstances, which is to say that they were performed by untrained individuals making use of harmful and invasive procedures. Developing nations are responsible for 97 percent of all abortions that are carried out in an unsafe manner. More than half of all abortions that are performed without proper medical supervision take place in Asia, the majority of which take place in South and Central Asia. It is estimated that approximately three out of every four abortions performed in Latin America and Africa are unsafe. It is estimated that close to half of all abortions performed in Africa take place in extremely risky environments [7]. Once a spontaneous pregnancy loss has been diagnosed, expectant, medicinal (with mifepristone and misoprostol), or surgical care (uterine aspiration) options are available. Gestational age, whether the pregnancy loss is delayed or complete, maternal hemodynamic stability, the presence of infection, and, most significantly, patient preference all play a role in determining the best course of action [8,9]. When compared to alternative therapy strategies, expectant management and placebo placed worst. Surgical procedures were ranked first in terms of miscarriage management, followed by medical methods, which were then ranked ahead of expectant management and placebo. The group receiving expected management or a placebo had the highest risk of major consequences, such as the need for unscheduled or emergency surgery [10]. Dilatation and curettage (D&C) have traditionally been the first-line surgical treatment, requiring skilled professionals, an operating room, and the presence of an anesthetist. Blood transfusions are required on occasion. Regardless of how diligent and

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skilled you are, even under the greatest of hands, problems such as bleeding, perforation, infection, and inadequate evacuation are all possibilities [11]. Though D &C requires less hospital/ clinic visits on patient's part when compared to expectant or medical management, [12], some investigators link endometrial thinning to dilatation and curettage (D&C). [13]. In 1972, manual vacuum aspiration (MVA) became available. MVA does not appear to be in widespread use. this could be related to a lack of awareness and confidence as the bulk of previous research analyzing the success of the technique came from underdeveloped nations, and ultrasound guidance (USG) was not frequently employed during the procedure [14]. MVA had the highest risk of post-treatment infection & significant consequences (SUCRA 87.6 & 79.2 percent, respectively), as well as the greater potential of post-treatment satisfaction (SUCRA 98 percent) [15].

## Materials and Methods

We carried out this comparative prospective study from January 2019 to July 2019 in Gynecology & obstetrics department of Hayatabad Medical Complex, Peshawar. After institutional ethical committee approval, letter no.121/HEC/PICO/18 dated 13th October 2018, a total of 146 patients who fulfilled the requirements of participation were enrolled & divided into two groups. Women of any parity in the age range of 18-35 years, period of gestation from 4-12 weeks, and having first trimester pregnancy loss confirmed by ultrasound, were included in the study. Women with induce abortion before for both medical or non-medical causes, previous C section, myomectomy, ectopic or molar pregnancy were excluded. All patients were briefed about the procedures, their potential risks and benefits, and the use of their data for research & publication before obtaining an informed written consent. Confirmation of first trimester pregnancy loss was recorded first. Patients in group A were subjected for MVA technique while patients in group B were subjected for D & C. Manual vacuum aspiration was carried out under para-cervical block using 1% xylocaine injection and analgesics. Completely removed products from the uterus were confirmed by ultrasound prior to discharge the patients. Efficacy of the two procedures were determined on patients' acceptance of the procedure, total time duration of the procedure and number of days in hospital.

## Results

In this study age distribution among two groups was analyzed as in Group A (Manual vacuum aspiration) 13(18%) patients were <20 years, 39(54%) patients were in age range 21-30 years, 21(28%) patients were in age range 31-35 years. Mean maternal age was 30 years ± 4.22. Where as in Group B (Dilatation and curettage) 15(20%) patients were < 20 years, 36(50%) patients were in age range 21-30 years, 22(30%) patients were in age range 31-40 years. Mean maternal age was 32 years ± 5.98. (Table 1).

**Table 1:** Age Distribution (in years).

| | n=146 | |
|---|---|---|
| Age | Group A (MVA) | Group B (D&C) |
| <20 | 13 (18%) | 15 (20%) |
| 21-30 | 39 (54%) | 36(50%) |
| 31-35 | 21 (28%) | 22 (30%) |
| total | 73 (100%) | 73(100%) |
| Mean ±SD | 30 ±4.22 | 32 ±5.98 |

Status of parity among two groups was analyzed as in Group A (Manual vacuum aspiration) 50(68%) patients were prime para while 23(32%) patients were multi para. Where as in Group B (Dilatation and curettage) 51(70%) patients were prime para and 22(30%) patients were multi para. (As shown in Table 2).

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| Table 2: PARITY STATUS (n=146). | | |
|---|---|---|
| PARITY | GROUP A (MVA) | Group B (D&C) |
| Primi Para | 50(68%) | 51(70%) |
| Multi Para | 23(32%) | 22(30%) |
| Total | 73(100%) | 73(100%) |

Period of gestation among two groups was analyzed as in Group A (Manual vacuum aspiration) 31(43%) patients had POG < 6 weeks while 42(57%) patients had POG >6 weeks Mean POG was 6 weeks ± 2.62. Where as in Group B (Dilatation and curettage) 29(40%) patients had POG < 6 weeks while 44(60%) patients had POG >6 weeks. Mean POG was 7 weeks ± 3.11. (As shown in Table 3).

| Table 3: Period of gestation (n=146). | | |
|---|---|---|
| Period of gestation | Group a (MVA) | Group B (D&C) |
| ≤ 6 weeks | 31(43%) | 29(40%) |
| > 6 weeks | 42(57%) | 44(60%) |
| Total | **73(100%)** | **73(100%)** |

Efficacy among two groups was analyzed as in Group A (Manual vacuum aspiration) was effective in 69(94%) patients and was not effective in 4(6%) patients. Where as in Group B (Dilatation and curettage) was effective in 58(80%) patients and was not effective in 15(20%) patients. (As shown in Table 4).

| Table 4: EFFICACY (n=146). | | |
|---|---|---|
| **EFFICACY** | GROUP A(MVA) | GROUP B (D&C) |
| **Effective** | 69(94%) | 58(80%) |
| **Not effective** | 4(6%) | 15(20%) |
| **Total** | **73(100%)** | **73(100%)** |

## Discussion

Miscarriage or abortion accounts for the majority of pregnancy losses and is a typical occurrence for women. Early pregnancy failure affects 15-20% of women worldwide and is a major public health issue. Miscarriages are the cause of 10-12 percent of maternal fatalities in Pakistan. Expectant, medicinal, and surgical therapy options are available for early pregnancy failure. Vacuum aspiration and sharp curettage are two surgical treatments. A plastic or metal cannula is linked to a vacuum source for evacuation of contents of the uterus in vacuum aspiration. MVA is a safe, practical procedure that can be performed in a variety of settings, including the emergency room and outpatient settings. It saves a lot of money and cuts down on procedure time and blood loss significantly. MVA is a low-cost, reusable, and portable device. Manual vacuum aspiration was efficient in 94 percent of patients, while dilatation and curettage were beneficial in 80 percent of patients, according to our research. In earlier study conducted by Pereira PP et al [17], made similar observations about the efficacy of manual vacuum aspiration over D & C in clearing the retained product of conception after first trimester pregnancy loss. Another study conducted by Bird ST et al [18], found similar results in terms of blood loss and mean procedure time in the therapy of early pregnancy failure using manual vacuum aspiration with dilatation and curettage. Manual vacuum aspiration resulted in blood loss in 12% of patients, while dilatation and curettage resulted in blood loss in 25% of patients. In manual vacuum aspiration, 90% of patients had

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an operative time of less than 10 minutes, whereas 10% had an operative time of more than 10 minutes. The average operative time was ten minutes, with a standard deviation of two minutes and three seconds. In dilatation and curettage, 70% of patients had an operating time of less than 10 minutes, whereas 30% had an operative time of more than 10 minutes. Farooq F et al [16],s found similar results. The mean procedure time in DNC (8.98 +/- 2.64 minutes) was substantially longer (p0.0001) than in MVA (5.88 +/- 2.43 minutes). The duration of hospital stay in the MVA group (3.48 +/- 1.2 hours) was substantially shorter (p0.0001) than in the DNC group (7.42 +/- 1.93 minutes). Ghaffar MA[20] found similar results in another investigation. He discovered that the D&C group had the highest rate of uterine perforation, with 5 instances (10%) compared to only one case (2%) in the MVA group.

## Conclusion

In women presenting with first trimester pregnancy loss, manual vacuum aspiration is more effective than dilatation and curettage in terms of evacuation of the retained products of conception, according to our findings.

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