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Research Article

**A COMPARATIVE RESEARCH TO EVALUATE MVA  
(MANUAL VACUUM ASPIRATION) AND MEDICAL  
TREATMENT TO MANAGE MISSED MISCARRIAGE (FIRST  
TRIMESTER)****Dr Zainab Bibi, Dr Yasir Ashfaq, Dr Saleha Javed**  
Sheikh Zayed Hospital Rahim Yar Khan**Article Received:** January 2019**Accepted:** February 2019**Published:** March 2019**Abstract:**

**Objective:** The objective of this research is to evaluate and contrast the medical treatment and MVA (Manual Vacuum Aspiration) for managing the miscarriage in the 1<sup>st</sup> trimester.

**Material and Methods:** This comparative research was conducted at Sir Ganga Ram Hospital, Lahore (August 2017 to March 2018). This research consists of a total of 92 cases of patients having a gestation age of less than twelve (12) weeks of missed abortion in the first trimester. Two groups were made of the patients: group A was treated with MVA whereas group B was treated medically and their effectiveness was evaluated.

**Results:** The patients' mean age was  $(29.77 \pm 6.786)$  years in which group A patients' mean age was  $(30.61 \pm 6.754)$  years while group B patients' mean age was  $(28.93 \pm 6.787)$  years. The gestational mean age was  $(5.87 \pm 3.592)$  weeks in which group A gestational mean age was  $(6.09 \pm 3.699)$  weeks while group B gestational mean age was  $(5.65 \pm 3.510)$  weeks. In group A patients, the effectiveness of treatment was 91.30% (42 out of 46 patients) while in the group B patients, the effectiveness of the treatment was 69.57% (32 out of 46 patients). The rate of effectiveness of cure for group A was considerably greater than Group B i.e., 91.30% as compared to 69.57%, having  $(p=0.009)$ .

**Conclusion:** The outcome of this research proved that MVA is a far more useful modality of treatment than medical treatment i.e., misoprostol intravaginally, as the rate of effectiveness of cure was considerably greater for the group of MVA than the group which was treated medically and it was especially true in the group of patients with older ages.

**Keywords:** Evacuation and Dilatation, Incomplete Abortion and Manual Vacuum Aspiration.

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## INTRODUCTION:

The uterus is, conventionally, evacuated surgically in the miscarriage of first trimester [1, 2]. This technique was started in the 2<sup>nd</sup> half of the 19<sup>th</sup> century after the invention of sharp curettes [3]. Even though it was adopted for reducing the danger of haemorrhage and infection, many other complications like endometritis, perforation of the uterus and cervical trauma were reported to be linked with it [4]. Moreover, reduced fertility, uterine synechia, pelvic pain and tubal damage are the complications of long term [4]. At present, by the virtue of misoprostol or prostaglandin analogue, the termination of the miscarriage of the first trimester is medically considered as an effective and safe choice [5]. Nevertheless, it has its own complications like pain, the requirement of emergency evacuation surgically, more requirement of analgesic and more induction abortion time [3, 5]. The other method of treating the miscarriage of the first trimester is MVA (Manual Vacuum Aspiration). When used by experts, the MVA method is cost effective and a very safe method. No doubt there has been much advancement in science, especially in the medical field, but still, 10% – 13% complications concerning abortion exist in the developing countries [6]. Most of the patients belong to the poor class. The effectiveness of both the methods will be evaluated for ascertaining the better way of managing the miscarriage of 1<sup>st</sup> trimester in the patients.

**Complete Abortion:** The cavity of uterine is empty on pelvic USG.

**Manual Vacuum Aspiration (MVA):** It is performed through a cannula of flexible "Ipas Easy Grip" attached to a 60 ml syringe (aspirator), having a valve mechanism of double locking.

**Medical Management:** 800µg misoprostol was given intravaginally.

**The first Trimester Missed Abortion:** The patients were judged by the followings:

1. The symptom of pregnancy like vomiting, morning sickness, nausea.
2. Through bimanual pelvic examination, the uterus of small size as related to the period of pregnancy.
3. On ultrasonography, the absence of cardiac motion.

## MATERIAL AND METHODS:

This comparative research was conducted at Sir Ganga Ram Hospital, Lahore (August 2017 to March 2018). We included all those patients of a missed miscarriage of 1st trimester having gestation age of not more than twelve (12) weeks, identified through ultrasonography to have a gestational sac not more than 25 mm diameter without any cardiac activity of

the fetal. The ages of the patients were 18 - 40 years. All were included whether grand multipara, multipara or primary para. Whereas, we did not include patients who were hypersensitive to the use of misoprostol, patients who were having less than twelve weeks gestation age, patients having ectopic molar or pregnancy, patients having a septic abortion and patients having cesarean section previously. A total of 92 patients of a missed miscarriage of 1<sup>st</sup> trimester was made a part of this research after written approval of the institution and each of the patients. They were randomly allotted Group "A" or Group "B". In the patients of Group "A", MVA was carried out while the Group "B" patients were given Misoprostol intra-vaginally.

To the patients of Group – A, tab Brufen, tab valium and Doxycycline 100 mg (prophylactic antibiotic) were given an hour before starting the process. Paracervical block as local analgesia was administered to the patients. MVA was used to evaluate the uterine cavity and the evacuation efficacy was confirmed as red or pink foam minus RPOC's passing in the cannula. If the conception products continued to pass instead of changing cannula even four times, it was diagnosed that the evacuation was incomplete and it needed another technique for evacuating uterus. The 2<sup>nd</sup> group patients were given misoprostol intravaginally. Every patient was given 800 µg misoprostol with hydroxyethyl gel of 2.5 ml per vagina. Misoprostol was in the white colour powder form of Cytotec tablets made by Searle, USA. Then it was combined with sterile hydroxyethyl gel of 2.5 ml made by GlaxoSmithKline, Pakistan. Then a disposable syringe of 5ml, with its needle removed, was filled with it. The mixture is injected in the vaginal fornix and the counting of time started. USG of Pelvic was carried out and if there had been RPOCs then at the interval of six hours at the most 2 doses of 400µg of misoprostol were given. After the completion of three doses, eighteen hours later, the end result is evaluated. The effectiveness of both the groups along with the demographic information of the patients was noted on a pro forma which was already designed. For analysis of the data statistically, it was checked by SPSS. The variables which were quantitative as gestational age and the age of the patient were shown as mean and standard deviation whereas variables which were qualitative variables as parity and efficacy were shown in the form of percentages and frequencies. For comparing the efficacy of both the groups, we utilized the chi-square test. The classification was carried out for parity, the age of gestation and the age of the patient. After classification, for knowing significance level, the chi-

square test was utilized and the significant value statistically was considered as  $P \leq 0.05$ .

### RESULTS:

The total number of patients chosen for this research was 92. The patients' mean age was  $(29.77 \pm 6.786)$  years, while group A patients' mean age was  $(30.61 \pm 6.754)$  years and group B patients' mean age was  $(28.93 \pm 6.787)$  years. The mean of age of gestation was  $(5.87 \pm 3.592)$  weeks while the mean age of gestation of group A patients was  $(6.09 \pm 3.699)$  weeks and the mean of age of gestation of group B patients was  $(5.65 \pm 3.510)$  weeks.

In group A, the effectiveness of treatment was 91.30% (42 patients out of 46) while in group B the effectiveness of the treatment was 69.57% (32 patients out of 46) having a value of  $P=0.009$ . The effectiveness of treatment was 85.71% (18 patients) in group A patients whereas it was 77.78% (21 patients) in the group B patients for the ages from 20 to 30 years, but this difference of effectiveness was insignificant statistically. The effectiveness of treatment was 96% (24 patients) in group A whereas it was 57.89% (11 patients) in the group B patients for the ages from 31 to 40 years and the difference of effectiveness was significant statistically. The effectiveness of treatment was 84.62% (22 patients) in group A, whereas it was 68.97% (20 patients) in the group B patients for the age of gestation from 01 to 06 weeks and the difference of effectiveness was insignificant statistically. The effectiveness of treatment was 100% (20 patients) in group A, whereas it was 70.59% (12 patients) in the group B patients for the age of gestation from 07 to 12 weeks and the difference of effectiveness was significant statistically.

The effectiveness of treatment was 100% (8 patients) in group A, whereas it was 68.75% (11 patients) in the group B patients for the primary paras but the difference of effectiveness was not significant statistically. The effectiveness of treatment was 78.95% (15 patients) in group A, whereas it was 80% (12 patients) in the group B patients for the multiparas but the difference of effectiveness was significant statistically. The effectiveness of treatment was 100% (19 patients) in group A, whereas it was 60% (9 patients) in the group B patients for the grand multiparas and the difference of effectiveness was significant statistically.

### DISCUSSION:

The aim of this research is to evaluate and contrast the medical treatment and MVA (Manual Vacuum Aspiration) for managing the miscarriage in the 1<sup>st</sup>

trimester. The patients' mean age was  $(29.77 \pm 6.786)$  years, while group A patients' mean age was  $(30.61 \pm 6.754)$  years and group B patients' mean age was  $(28.93 \pm 6.787)$  years. The mean of age of gestation was  $(5.87 \pm 3.592)$  weeks while the mean age of gestation of group A patients was  $(6.09 \pm 3.699)$  weeks and the mean of age of gestation of group B patients was  $(5.65 \pm 3.510)$  weeks.

The rate of effectiveness of treatment was higher significantly for the group A which was treated with MVA in comparison to the group B which was treated by medical management i.e., in group A, the effectiveness of treatment was 91.30% (42 patients out of a total of 46) while in group B the effectiveness of the treatment was 69.57% (32 patients out of a total of 46) having value of  $P=0.009$ .

Bique have observed, while comparing the effectiveness of treatment of missed miscarriage with MVA and misoprostol, that MVA rate of treatment success was 100% and that of misoprostol was 91% with  $P=0.002$  after the treatment, 7 days later, for follow-up [7]. His research recommended MVA for the treatment of missed miscarriage of the first trimester. MVA was reported to be more effective, safe and faster as compared to treatment with misoprostol for the age of gestation from 09 to 12 weeks [8]. Tasnim N conducted a study in which up to 89.6% of patients were treated successfully through the MVA method [9]. Hamlin J conducted research which proved that the rate of success of treatment with MVA was 95.2% [10]. Edwards S conducted a study in which up to 98% of patients were treated successfully through the MVA method [11]. The rate of success of the MVA method was 97.7% in the research of Ansari R [12]. The results of all these researches confirm the findings we have discovered in our study.

The rate of success, for the treatment of missed miscarriage through the administration of misoprostol vaginally, sublingually or orally, has been 25% – 97% in various researches. This difference among the researches may have been due to the various standard of the rate of success, different ways of administering and the different routines of using misoprostol [13]. The research of Shuaib AA, in which misoprostol was administered intravaginally to 52 female patients, shows a 80.7% success rate of expelling the products of conception [13]. The research of Shankar M also proves that because of the administration of misoprostol, 77.3% of female patients had complete successful evacuation medically [14]. It was also proved by Shah N study that because of the use of

misoprostol intravaginally, the success rate for successful evacuation was 48% [15]. These conclusions are all in conformity with the results of our research. The patients' mean age, in our research, was  $(29.77 \pm 6.786)$  years, while group A patients' mean age was  $(30.61 \pm 6.754)$  years and group B patients' mean age was  $(28.93 \pm 6.787)$  years. The mean age, as well as the mean of the age of gestation, can be compared with the Ghazvani research (2014) [16].

### CONCLUSION:

This research proves that MVA is a far better treatment for the patients of a missed miscarriage of 1<sup>st</sup> trimester in comparison to the medically managed misoprostol treatment intravaginally. The effectiveness rate has been higher significantly for the group of MVA patients in comparison to the group which was treated medically. The group of MVA treatment patients' effectiveness rate was also highly significantly in comparison with the group which was treated medically through misoprostol.

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