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ORIGINAL ARTICLE

Manual Vacuum Aspiration During Early Pregnancy Failure: A Comparison of Sublingual and Vaginal Misoprostol for Pain Management

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ABSTRACT

Objective: compare sublingual and vaginal misoprostol in terms of mean pain score during manual vacuum aspiration in cases of early pregnancy failure.

Methodology: A total of 100 women with missed abortions, blighted ovaries, and 9 gm/dl haemoglobin were investigated at Wateem Medical and Dental College, Rawat, Rawalpindi. Complete medical history, physical, and obstetrical exam. Same doctor used ultrasound to determine pregnancy. Grouping of patients was done randomly (based on table of random numbers). Group (A)(n=50) was evaluated two hours after sublingual misoprostol. Group (B) (n=50) got 400 g misoprostol in their vaginal posterior fornix and were evaluated 4 hours later. Before surgery, all patients were given ibuprofen and antibiotics. Pre-measurements included blood pressure, heart rate, and temperature. Manual vacuum suction was aided by a 10ml paracervical lidocaine block. During surgery, the patient was given a VAS. All women received paracetamol after operations (two 500 mg pills).

Results: Group-A and B patients' mean ages were 25.87+5.16 and 25.17+4.32 years, respectively. In Group-A, the mean gestational age was 7.17+2.54 weeks and in Group-B, 6.85+3.93. In Group-A, mean parity was 3.09+2.34 and in Group-B, 4.45+2.63. Comparing sublingual and vaginal misoprostol in terms of mean pain score during manual vacuum aspiration in early pregnancy failure demonstrates a significant difference (p 0.0001).

Conclusion: We found that the average pain score during manual vacuum aspiration was much lower in cases of early pregnancy failure when misoprostol was administered vaginally as opposed to sublingually.

Keywords: Early pregnancy failure, manual vacuum aspiration, misoprostol, sublingual and vaginal, efficacy

INTRODUCTION

The term "early pregnancy loss" (EPL) refers to the loss of an intrauterine pregnancy before 12 weeks and 6 days.[1,2] Because some miscarriages may occur before the patient is aware she is pregnant, the frequency of EPL is unknown. Including both known and unknown pregnancies, the estimated incidence of EPL in a 1988 research was 31%. (identified before clinical diagnosis).[3]

However, this data is solely based on miscarriages that were clinically detected throughout the pregnancy. More recent papers estimate an incidence of between 12.8% and 13.5%.[4,5] It is likely that the incidence of EPL is higher than that which was published for clinically recognised pregnancies as a result of the widespread availability of highly sensitive over-the-counter urine pregnancy tests. These tests can detect pregnancy prior to the formal clinical diagnosis of pregnancy. Clinicians need to be acquainted with EPL's nomenclature, maternal risk factors, presentation, diagnosis, and therapy in order to effectively treat patients who have the condition.[6]

Surgical evacuation is a common method of first trimester abortion performed all over the world, and Manual Vacuum Aspiration (MVA) has been discovered as a method of choice that can easily be performed in outpatient department as a daycare procedure.[7] Surgical evacuation is a common method of first trimester abortion. Three MVA treatments have demonstrated an efficacy of 99.5% with minimal adverse effects. Before the treatment, the cervix must first be dilated, which can be a challenging process at times. Pain and other consequences, including as cervical damage, uterine perforation, incomplete evacuation with the possibility of prolonged bleeding, infection, and cervical incompetence in subsequent pregnancies, are all related with mechanical dilation of the cervix.[8]

Cervical priming has been shown to lessen pain, improve operating comfort, reduce complications, and make manual vacuum aspiration safer. Abortion during the first trimester is safe and effective because to the use of misoprostol, a prostaglandin E1 analogue that ripens the cervix and initiates uterine contractions.[9] Misoprostol has no bronchoconstriction effect, is inexpensive, and is stable at room temperature. It can be taken orally, sublingually, vaginally, or rectaly, and in a variety of dosages to induce cervix ripening. The ideal dose and time for relieving pain in individuals is yet unknown, although research into these factors might be helpful.[10] Misoprostol has not been shown to be more effective than placebo for reducing postoperative pain. In this study, participants will receive either 400 g of misoprostol vaginally or 200 g sublingually, and they will be asked to rate their level of discomfort immediately following the procedure.[11]

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The purpose of this study is to determine whether or whether misoprostol is useful in reducing the amount of pain experienced during medically approved procedures for the termination of pregnancies, such as those for a missed abortion or a blighted ovum.

METHODOLOGY

Around one hundred women with history of missed abortions, blighted ovaries, and haemoglobin levels of 9 gm/dl or higher were included at Wateem Medical and Dental College, Rawat, Rawalpindi during May 2021 to October, 2021. However, female patients with conditions such as history of raised blood pressure, severe liver or renal disorder, and severe anemia, patients with history of chronic corticosteroids medication, patient with coagulopathy, uterine anomaly, or infection were not. The research followed a predetermined protocol. Patients were given information and asked for their agreement before any work was done. A complete medical history was taken, along with a complete physical and an obstetrical assessment. To determine the gestational age, the same doctor performed an ultrasound. Patients were randomly assigned to one of two groups (based on table of random numbers). Two hours after receiving 200 g of misoprostol sublingually, patients in Group (A)(n=50) were evaluated. Patients in Group (B) (n=50) had 400 g of misoprostol inserted into their vaginal posterior fornix and were then checked

again 4 hours later. Half an hour before their procedures, all patients were given 400 mg of ibuprofen and oral antibiotics. The patient's vitals (blood pressure, heart rate, and temperature) were taken in advance. Under the influence of local anaesthetic, a paracervical block with 10ml of 1% lidocaine was used to facilitate manual vacuum aspiration. During the operation, the patient was instructed to rate their level of discomfort on a visual analogue scale. All of the ladies were given paracetamol (two 500 mg tablets) for pain relief after their surgeries.

RESULTS

Age distribution showed mean age of 25.87+5.16 and 25.17+4.32 years in Group-A and B respectively. Mean gestational age of the patients was calculated as 7.17+2.54 in Group-A and 6.85+3.93 weeks in Group-B. Mean parity of the patients was calculated as 3.09+2.34 in Group-A and 4.45+2.63 in Group-B.

Comparison of sublingual and vaginal misoprostol in terms of mean pain score during manual vacuum aspiration in cases of early pregnancy failure was done it shows that 55.1+4.47 in Group-A and 46.81+5.19 in Group-B, p value was calculated as less than 0.0001, showing a significant difference.

Table 1: Comparison of Both Groups (n=100)

Pain Score	Group-A (n=50)		Group-B (n=50)		P value
	Mean	SD	Mean	SD	
	55.1	4.47	46.81	5.19	0.0001

DISCUSSION

Estimates place the number of fatalities of mothers all over the world due to abortion at 13.2 percent.[12] Incomplete pregnancies result from the embryo or fetus being stuck inside the uterine wall, which can cause serious health problems such bleeding, infection, kidney failure, and even death. Ultrasounds are able to detect these fetuses shortly after fertilization. Abortion-related deaths are more common in countries with few resources, in countries with severe abortion regulations, and in countries where it is difficult to have an abortion.[13] In order to deal with partial abortions, post-abortion care (PAC) was developed as a solution to the problems that arise when an abortion is performed in an unsafe setting. This includes providing emotional support, completing a hysterectomy if necessary, administering antibiotics, and offering birth control to impacted women.[14] Suction evacuation, with heavy reliance on manual vacuum aspiration (MVA) in low-resource settings, was the norm for uterine removal in PAC in the outset. MVA is a therapy option for early pregnancy loss that is both safe and effective; however, its availability in low resource nations is limited due to a shortage of sterile equipment and competent providers in general,[15-16] Despite these facts, MVA is still a treatment option. Other obstacles include the requirement for operating room space, the expense of the treatment, and unusual consequences include cervical trauma and uterine perforation. Due to these limitations, non-surgical treatment methods have to be investigated and proven to be effective, easily available, and acceptable.

The purpose of this study is to determine whether or whether misoprostol is useful in reducing the amount of pain experienced during medically approved procedures for the termination of pregnancies, such as those for a missed abortion or a blighted ovum.

In our study, comparison of sublingual and vaginal misoprostol in terms of mean pain score during manual vacuum aspiration in cases of early pregnancy failure was done it shows that 55.1+4.47 in Group-A and 46.81+5.19 in Group-B, p value was calculated as less than 0.0001, showing a significant difference.

One research on women undergoing a voluntary termination of pregnancy reported that discomfort with misoprostol by sublingual route was 58+2.2 and vaginal route was 46.6+2.8 intraoperatively, which is comparable to our findings.[17]

In a recent study[18] it was revealed that 203 patients were enrolled meeting the requirements for enrollment and ready to properly follow the protocol explained. Analysis of the data showed that percentage of the patients with complete abortions on misoprostol was 86% versus 100% in control group (p <0.01). Abdominal discomfort was the most prevalent adverse effect, occurring in 27.5% of misoprostol patients and 48.55% of control patients (p = 0.002). Percentage of patients with significant side effects were (81.1% on misoprostol and 77.6% controls). Satisfaction of the patients was also more with the use of misoprostol versus that among the patients in the control group (p = 0.001).

The sublingual (S/L) route of misoprostol administration was reported to be much more efficient than the oral and vaginal delivery methods in another study[19]. This was done in order to prepare the cervical canal for suction evacuation (SE) under local anesthesia. While some research suggests that giving a woman who has just had an unsuccessful pregnancy 400mg of misoprostol vaginally is more effective than giving her 200mg of misoprostol sublingually in reducing post-operative discomfort, our data suggest the opposite.

According to the findings of Ngai et al[20] an oral dosage of 400 g of misoprostol three hours before VA is just as successful as a comparable regimen of vaginal misoprostol. However, giving the patient an oral medication with water three hours before the surgery might potentially cause complications, particularly in the case if the patient will require general anaesthetic for SE.[21] These clinical investigations have proven that the vaginal route is preferable to the oral way of administering misoprostol in the process of terminating pregnancies in the first trimester. Studies have been done on the effectiveness of taking misoprostol sublingually in the context of medically terminating a pregnancy.[22]

Considering the fact, misoprostol reduces pain during medically recommended abortions including missed abortions and blighted ovaries.

CONCLUSION

- We found that the average pain score during manual vacuum aspiration was much lower in cases of early pregnancy failure when misoprostol was administered vaginally as opposed to sublingually.

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