

Manual vacuum aspiration with medical method of abortion in termination of pregnancy up to 9 weeks of gestational age: A comparative study

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Abstract:

Introduction: Unsafe abortions are a serious public health issue in India, involving the expulsion or extraction of the product of conception and causing controversy. Unmet demand exists for a simple, effective early pregnancy termination method that is both accessible and safe. Medical abortion using mifepristone and misoprostol and surgical abortion using manual vacuum aspiration are two procedures that meet this need.

Materials and Methods: All requirements outlined in the MTP Act of 1972 by the Government of India were followed in this study. On the first day of the medical abortion, the patient was given 200 mg of mifepristone orally. After 48 hours at home, the patient was told to keep using Tab. Misoprostol 800ug vaginally. A 60ml double-valved manual vacuum aspiration syringe was used for MVA. Following the MVA syringe's attachment, the contents were aspirated. Villi on fresh tissue served as proof that the procedure was successful. The aspirated uterine contents were placed on a piece of gauze and examined to determine the gestational sac. Each woman was under observation for at least four hours following the procedure. The vital signs were examined before discharge. Inj. Women with Rh negative blood groups received 300ug of anti-D within 72 hours of the abortion.

Result: Among 180 cases 78 (43.33%) cases were reported as age group of 21-25 years. Maximum number of cases in group A was 41.1% and in Group B was 44.4% which belong to 6-7 week of gestation. In our study, in group A, patients with previous LSCS were 17.8%, whereas in group B 26.7% were with previous LSCS. The patients of Group A did not

experience any serious complications. Maximum number of cases were multiparous, in Group A (MMA) was 76 (84.4%) and in Group B (MVA) was 87 (96.7%) whereas primigravida were less in number, Group A (MMA) was 14 (15.6%) and in Group B (MVA) was 3 (3.3%) p value <0.5. The success rate of the abortion in the present study was 88(97.8%) in Group A because of 2 cases of incomplete abortion in Group A and 100% in Group B leaving no incomplete abortion p value 0.001.

Conclusion: According to the study's findings, mifepristone and vaginal misoprostol seem to produce the best outcomes. An earlier gestational age results in a shorter induction period but a higher risk of an incomplete abortion. Surgery evacuation may not always be the best option for first-trimester abortions involving pregnancies up to 9 weeks gestation.

Key words: Mifepristone, Misoprostol, Abortion, Pregnancy, Manual vacuum aspiration

Introduction:

Unsafe abortions are a serious public health issue in India, involving the expulsion or extraction of the product of conception and causing controversy.¹ Induced abortion is a contentious issue that elicits emotional and heated debate. Unwanted pregnancy is an issue that will never be fully resolved. Fertility control through induced abortion, though an ancient practice, remains popular in modern obstetrics as well. Unwanted pregnancy is a proxy indicator of unmet contraception need.² Approximately 210 million women become pregnant each year, with over 75 million pregnancies ending in stillbirth or spontaneous or induced abortion. Every year, approximately 22 million women have unsafe abortions, accounting for 13% of maternal deaths worldwide.³ Every year, 15,000 to 20,000 abortion-related deaths are reported in India, with unsafe abortion accounting for 8% of the total, raising serious concerns.⁴

The termination of such unintended pregnancy is adequately protected by the MTP ACT 1971, with its amendment No -64. (19 Dec 2002).⁵ Less than 1 in 100000 people will die as a result of legal abortion overall. Even though India has allowed for the voluntary termination of pregnancy (MTP) for 50 years, there are very few places where it is available, especially in rural areas. Fetal abnormality is the main factor in perinatal mortality. Pregnancy termination for the same reason significantly lowers the perinatal mortality caused by birth defects.^{6,7} According to a study of Guillem et al.⁸ the main ground for termination of pregnancy is formed by fetal morphological anomalies and chromosomal anomalies in 39% and 35% of

cases respectively in and 47% and 33%, respectively, in another study done by Ramalho et al.⁹

Fetal abnormality is treated surgically; an intact fetus is not preserved. In most cases, pathological examination of fetal parts using radiography, gross dissection, microscopic examination, and/or cell culture for karyotyping or biochemical analysis can identify a major abnormality; however, in some circumstances, pathological examination may be the only way to make a specific diagnosis.¹⁰ Unmet demand exists for a simple, effective early pregnancy termination method that is both accessible and safe. Medical abortion using mifepristone and misoprostol and surgical abortion using manual vacuum aspiration are two procedures that meet this need.

Materials and Methods:

Data collection method was used to complete the study. Total 180 pregnant women who were willing to terminate the pregnancy up to 9 week of gestational age. The study was conducted in the department of obstetrics and gynaecology, Gadag Institute of Medical sciences and District Hospital from January 2022 to March 2022. Informed written consent were taken from each patients and ethical approval were obtained from institutional ethical committee. Patients wanting termination of pregnancy were counselled about medical method (using mifepristone and misoprostol) and manual vacuum aspiration. The selection of patients was done alternatively, one patient had to undergo MVA whereas mifepristone and misoprostol was induced in another pregnant women according to admission. Total cases were divided into two groups with equal number of cases were formed as Group A and Group B. We included 90 cases in Group A (MMA) and 90 cases in Group B (MVA).

Group A: women who opted for medical methods for termination of pregnancy (MMA)

Group B: women who opted for manual vacuum aspiration for termination (MVA)

Inclusion criteria: According to the MTP act of 1971, this study included all pregnant women who were willing to end their pregnancies at 9 weeks of gestation, regardless of parity.

Exclusion criteria: The study excluded patients with gestational ages greater than 9 weeks and anemia (hemoglobin less than 8 g/dl). Patients with uterine anomalies, pelvic infections, bleeding disorders, maternal history of asthma or cardiac disease, known maternal allergies to

prostaglandins, ectopic pregnancies, molar pregnancies, uterine anomalies, and previous adverse reactions were also excluded from the study.

The medical, surgical, obstetrical, menstrual, and contraceptive histories of each of the selected cases were collected. A general, physical, systemic clinical examination as well as a bimanual pelvic examination were carried out on the selected patients to ascertain the location, size, and mobility of the uterus as well as the presence of infection. The haematological investigation included the CBC, blood grouping, Rh typing, blood sugar level, typical urine microscopy, and ultrasonography.

All requirements outlined in the MTP Act of 1972 by the Government of India were followed in this study. On the first day of the medical abortion, the patient was given 200 mg of mifepristone orally. After 48 hours at home, the patient was told to keep using Tab. Misoprostol 800ug vaginally. This Schedule was fulfilled even if the woman merely used mifepristone to induce an abortion. The start of bleeding, when the pregnancy product passed, how long it bled, and any side effects were all asked of the women.

The appropriate canula size MVA syringe was employed. P/V analysis was carried out. After the speculum was inserted into the vagina, povidine iodine was used to sterilize the cervix and vagina. The appropriate size canula was inserted. A 60ml double-valved manual vacuum aspiration syringe was used for MVA. Following the MVA syringe's attachment, the contents were aspirated. Villi on fresh tissue served as proof that the procedure was successful. The aspirated uterine contents were placed on a piece of gauze and examined to determine the gestational sac. Each woman was under observation for at least four hours following the procedure. The vital signs were examined before discharge. Inj. Women with Rh negative blood groups received 300ug of anti-D within 72 hours of the abortion. The patients were contacted for follow-up and a clinical assessment after 14 days. Ultrasound was used when a patient's bleeding became excessive. Without any surgical assistance, the abortions were performed successfully.

Results:

Among 180 cases 78 (43.33%) cases were reported as age group of 21-25, 36 (40%) and 42 (46.67%) of patients belong to age group 21-25, 23 (25.56%) and 23 (25.56%) of patients belong to age group 25-30, 20 (22.3%) and 11 (17.22%) of patients belong to age group <20 and 11 (12.23%) and 14 (15.54%) of patients belong to age group >30 in Group A and Group B respectively (Table 1).

Maximum number of cases in group A was 41.1% and in Group B was 44.4% which belong to 6-7 week of gestation. In our study, in group A, patients with previous LSCS were 17.8%, whereas in group B 26.7% were with previous LSCS. The patients of Group A did not experience any serious complications.

Table 1: Age wise distribution of patients

Age group (years)	Group A (MMA)	Group B (MVA)	Total (%)	P value
< 20	20 (22.3%)	11 (12.23%)	31 (17.22%)	<0.05
21-25	36 (40%)	42 (46.67%)	78 (43.33%)	
25-30	23 (25.56%)	23 (25.56%)	46 (25.56%)	
>30	11 (12.23%)	14 (15.54%)	25 (13.89%)	
Total	90 (100%)	90(100%)	180 (100)	

Maximum number of cases were multiparous, in Group A (MMA) was 76 (84.4%) and in Group B (MVA) was 87 (96.7%) whereas primigravida were less in number, Group A (MMA) was 14 (15.6%) and in Group B (MVA) was 3 (3.3%).

Table 2: Parity wise distribution of patients.

	Group A (MMA)	Group B(MVA)	P value
Primigravida	14 (15.6%)	3 (3.3%)	<0.5
Multigravida	76 (84.4%)	87(96.7%)	
Total	90 (100%)	90 (100%)	

77 (42.78%) patients were opted for termination of pregnancy 6-7 week of gestation age followed by 47 (26.11) at 5-6 week of gestation age, 39 (21.67%) 7-8 week of gestation age and 17 (9.44%) 6-7 week of gestation age (Table 3).

Table 3: Distribution of patients according to gestational age.

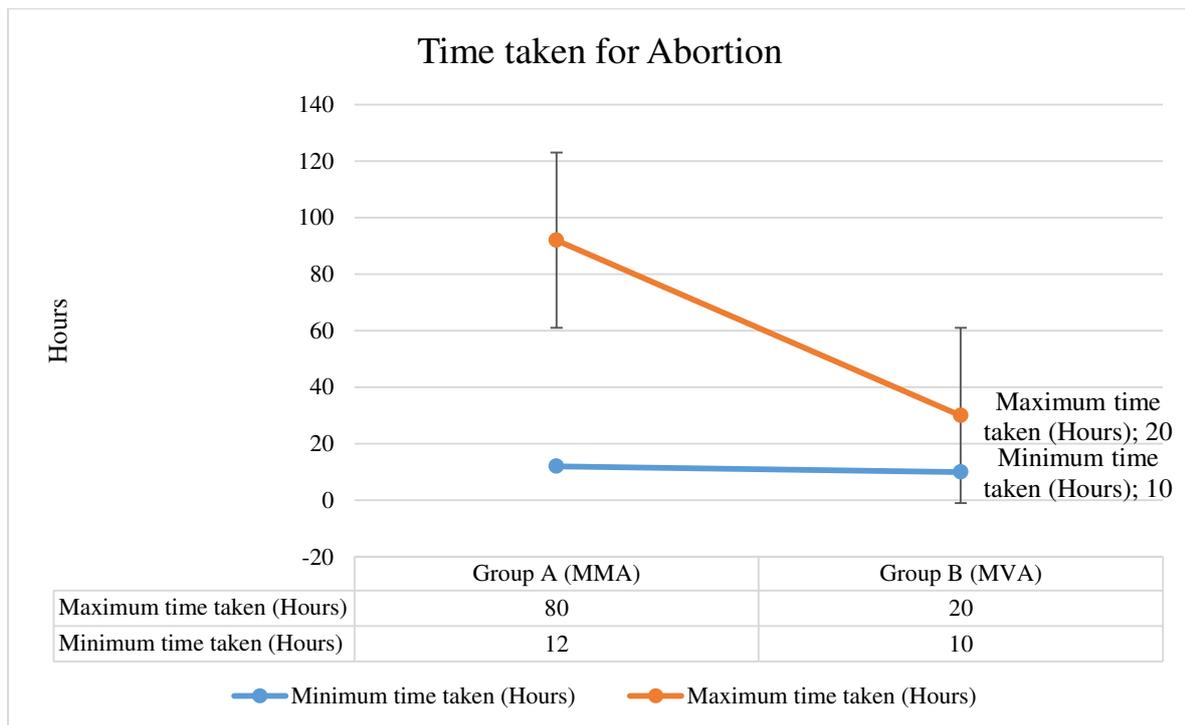
	Group A (MMA)	Group B(MVA)	Total	P value
5-6 week	30 (33.3%)	17 (18.9%)	47 (26.11%)	<0.01
6-7 week	37 (41.1%)	40 (44.4%)	77 (42.78%)	
7-8week	16 (17.8%)	23 (25.6%)	39 (21.67)	
8-9 week	7(7.8%)	10 (11.1%)	17 (9.44)	
Total	90 (100%)	90 (100%)	180 (100%)	

In this study, in group A, patients with previous LSCS were 16 (17.8%), whereas in group B 24 (26.7%) were with previous LSCS. The patients of Group A did not experience any serious complications.

Table 4: Previous LSCS

Co-existing risk	Group A (MMA)	Group B(MVA)	P value
High risk factor (Previous one LSCS)	16 (17.8%)	24 (26.7%)	<0.001
Low risk factor	74 (82.2%)	66(73.3%)	

Fig 1: Time taken for abortion



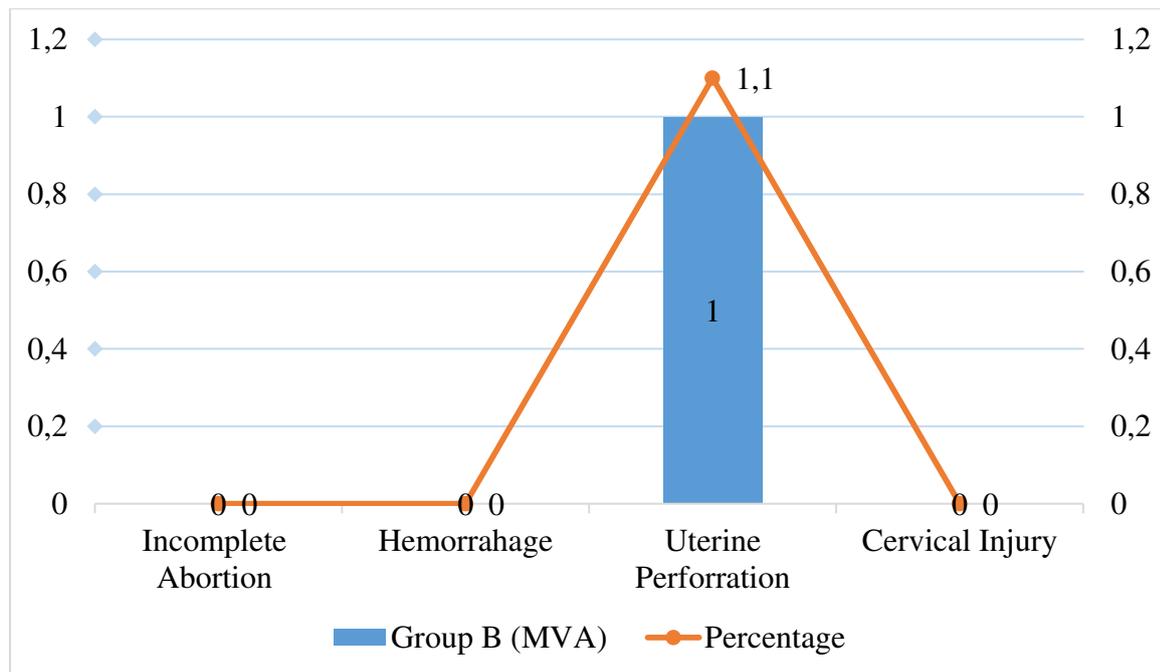
All women were presented with at least some bleeding, out of which 3 (3.3%) patients had heavy bleeding still no blood transfusion was required, 6 (6.7%) of the patients had vomiting, and 3 (3.3%) patients had fever, p value was <0.5 (Table 5).

Table 5: Side effect of misoprostol

Side effect of misoprostol	Total no of cases	P value
Excessive bleeding	3 (3.3%)	<0.5
Vomiting	6 (6.7%)	
Fever	3 (3.3%)	

In group B, one case of uterine perforation was noted. Laparotomy was performed, uterine perforation was sutured with catgut; patient was stable post operatively. None of the patient had come up with incomplete abortion in group B (Fig.2).

Fig. 2: Operative complication



The success rate of the abortion in the present study was 88(97.8%) in Group A because of 2 cases of incomplete abortion in Group A and 100% in Group B leaving no incomplete abortion p value 0.001.(Table 6).

Table 6: Efficacy.

	Group A (MMA)	Group B (MVA)	P value
Success rate (complete abortion)	88 (97.8%)	90 (100%)	0.001
Medical Failure (incomplete abortion at the end of study)	2 (2.2%)	-	<0.5

Discussion:

The majority of risky abortions take place in low-income nations where induced abortion is prohibited and significantly increases maternal mortality and morbidity worldwide.^{11,12} In the present study, the mean age of patients in both group was 26 ± 2.42 year, 84.4% of patient were multigravida. According to the studies conducted by Banerjee¹³ et al and Shetty¹⁴ et al previously the mean age group of patient was 27 ± 4.2 and 29.8 ± 4.4 respectively as well as 86% and 84% of patients were multigravida respectively. Hence the results of the present study is comparable with the results of these studies. No patients in both groups were found to be unmarried. As shown in table 3 of the present study, mean period of gestation in both the groups was 6-7 week, 41.1% of patients belong to this gestational age which can be compared to a study by Mundle¹⁵ et al in which gave the result of 40% patient belonging to 6-7 weeks and a similar study by Shannon¹⁶ et al results 36% of patient belonging to 7-8week.

17.8% of patient in Group A, were found with previous LSCS and in group B 26.7% patients with previous LSCS which was comparable to similar studies done previously. As presented in table 5 the mean time taken for abortion interval in group A was 58hrs in the present study

which was comparable to the similar study done by J Guest¹⁷ et al in which the mean induction- abortion interval was 61 hrs as well as the study done by Irving¹⁸ et al in which induction –abortion interval 72 hours. In our study, 3.3% of patients suffered from fever, 6.7% patient had vomiting and 3.3% had heavy bleeding with no requirement of blood transfusion.

The side effects occurred among the participants of our study were comparable to previous studies by Von Hertzen¹⁹ et al. In the present study, 1.1% Of patient had uterine perforation. Haemorrhage was not seen in any of the patients in the present study. No patient of Group B had incomplete abortion whereas 2 patients of Group A had incomplete abortion. The incidence of cervical injury was not seen in any of the patient in this study. The efficacy and safety of medical method of abortion was compared with manual vacuum aspiration. Efficacy of the procedure was defined as complete uterine evacuation without any need for further medical or surgical treatment The current study found that medical abortion was 97.8% effective, with 2.2 percent of patients who had incomplete abortions requiring curettage. In this study, manual vacuum aspiration had a success rate of 100 percent. The cost of MVA was higher than the cost necessary for termination by medical means because the patients had to stay in the hospital for one to two days before the procedure, were given anaesthetic medications, and received preoperative antibiotics. The patients did not need to be admitted to the hospital for their medical abortions. In the field of abortion, it is common practice to administer a single oral dose of mifepristone while under the close supervision of hospital staff, followed by oral or vaginal misoprostol 48 hours later. The reason being pre-treatment with mifepristone causes luteolysis which results in shedding of deciduas in abortion and also amplitude and frequency of uterine contractions is increased.

According to different studies, women who have a non-operative procedure have a high rate of satisfaction. Misoprostol taken at home for up to 63 days has been shown to be secure and efficient, with satisfaction levels above 90%. Many more researchers discovered that there was no loss of effectiveness in complete abortion when the gap between the administration of mifepristone and misoprostol was shortened from 72 to 48 and 24 hours, and women overwhelmingly preferred the shortest waiting period possible between the procedure's beginning and end.¹⁶ This study, all the above mention procedure were followed this results the increases satisfaction of women and reduces the time spent in hospital. This methods helps the women to feels better at home and can continue her household responsibility and convenient to women.

Conclusion:

According to the study's findings, mifepristone and vaginal misoprostol seem to produce the best outcomes. An earlier gestational age results in a shorter induction period but a higher risk of an incomplete abortion. Surgery evacuation may not always be the best option for first-trimester abortions involving pregnancies up to 9 weeks gestation. The only drawback of medical abortion is that it is unpredictable and has a variable success rate, as opposed to surgical evacuation, which has a 100% success rate and a quick procedure.

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