

A Comparison of Medical Method of Abortion with Manual Vacuum Aspiration in Termination of Pregnancy up to 9 Weeks of Gestational Age

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Abstract: ***Background and Objective:** The objective of this study was to compare the efficacy and complication of medical method versus manual vacuum aspiration in early pregnancy termination to determine whether medical method of abortion represent a reasonable alternative to manual vacuum aspiration (surgical method) in terms of complete evacuation of products of conception and their side-effects. **Method:** A prospective comparative study was carried out on 212 pregnancies in women who were willing for termination of pregnancy upto 9 weeks (63 days) of gestational age, in Group A: women who opted for medical method for termination, Group B: women who opted for manual vacuum aspiration for termination during a period of 1 year (January 2019 to December 2019). **Results:** The mean age in Group A was 28.62 ± 3.40 years and in Group B it was 29.36 ± 3.83. In Group A 52.83% belong to age group 21-25 and in Group B 46.22% of patient belong to age group 21-25. In Group A 94 (88.67%) and in Group B 95 (89.62%) people reside in urban area. Majority of the patients were multipara in which 29.71% patients were Para 1, 48.16% were para 2 and 38.06% were belonging to higher parity and only 3.30% patients were nullipara. Maximum number of cases in both the groups belonged to 6-7 weeks of gestation Group A- 45.28% and in Group B-43.39%. Average duration of bleeding P.V. in Group A = 8.72±3.46 days and Group B = 6.78±2.72 days. Incidence of pain, nausea, vomiting and diarrhea was 73.58%, 32.07%, 15.09% and 11.32% in Group A and 52.83%, 7.54%, 3.77% and nil in Group B. Success rate was 92.45% for medical abortion and 98.11% for manual vacuum aspiration. **Conclusion:** Medical method of abortion for termination of pregnancy upto 9 weeks of gestation can be a better alternative to surgical method i.e., manual vacuum aspiration. Side effects like nausea, vomiting, pain abdomen and diarrhea were more with medical method but majority of these symptoms were self-limiting. Amount and duration of bleeding per vaginum is more in medical method as compared to surgical method. Medical method of abortion proves to be safer, confidential and economical method that avoids complication associated with surgical method eg Uterine perforation, Cervical injury, Anaesthetic complications. The effectiveness of medical method of abortion in present study was 92.45% and success rate of manual vacuum aspiration was 98.11%. The major disadvantage with medical method of abortion was the lack of predictability. The main advantage with manual vacuum aspiration was short duration of procedure.*

Keywords: Abortion, Misoprostol, Mifepristone, Manual vacuum aspiration

1. Introduction

Unwanted pregnancy is a proxy indicator for the unmet need for contraception¹. In India, women try a variety of remedies to deal with unwanted pregnancies including tablets, decoctions, sticks and visits to unsafe providers. World wide, nearly 40 million abortions take place annually, of which approximately 10-22 million are illegal abortions.^{2, 3} WHO estimates that, unsafe abortions kill about 70,000 women annually.

Every hour, 8 women die of unsafe abortions. For every woman who dies from an unsafe abortion, many more suffer serious injuries and permanent disabilities. Even after 48 years of legalization of voluntary termination of pregnancy (MTP) in India, its availability, particularly in rural area is very limited. As a result, 15,000 to 20,000 abortion related deaths are reported in India every year⁴. This has lead to the realization of the need to have a safe, inexpensive, easily applicable and widely acceptable method for abortion. Two methods which fulfil this need are medical method of abortion using mifepristone and misoprostol and surgical abortion with manual vacuum aspiration.

2. Methods

This is a prospective comparative study conducted in Department of Obstetrics and Gynecology, Umaid Hospital, Dr. S.N. Medical College, Jodhpur (Rajasthan) from January 2019 to December 2019. A total number of 212 cases, up to 9 weeks of gestation and willing for termination were included in the study. After taking informed and written consent Study population was divided into two groups according to women's desire:

- Group A: women who opted for medical method for termination
- Group B: women who opted for manual vacuum aspiration for termination.

Inclusion criteria

Pregnant women with 9 weeks (63 days) of gestation, irrespective of parity who were willing for termination of pregnancy (MTP criteria should be fulfilled).

Exclusion criteria

- Anaemia (Haemoglobin < 8gm%)
- Ectopic pregnancy
- Molar pregnancy

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- Uterine anomalies
- Pelvic infection
- Bleeding disorders
- Maternal history of asthma or cardiac disease
- Known maternal allergy to prostaglandins or previous adverse reaction

In all selected cases menstrual, contraceptive, obstetric, medical and surgical history was taken. Clinical examination including general physical and systemic examination was done.

Bimanual Pelvic examination was done to know the position, size, consistency, mobility of uterus, adnexa and presence of infection.

The haematological investigation included like CBC, blood grouping and Rh typing, Blood sugar level and urine routine microscopy was done. Ultrasonography was done.

A written informed consent regarding procedure, side effect was taken.

Medical method

After confirming gestational age by ultrasound, and after written informed consent. Following regimen was followed. All norms as per the MTP act by the government of India were followed. On first day of medical abortion mifepristone 200 mg was given orally. The patient was asked to keep tab. Misoprostol 800ug per vaginally after 48 hrs at home, schedule was completed even if the woman aborted with mifepristone only. Women were asked to note onset of bleeding, timing of passage of product of Conception, duration of bleeding and side effects. Injection Anti D 150ug given in Rh negative blood group women. Women were called or follow-up after 14 day and clinical evaluation was done. Ultrasound was done if patient with excessive bleeding. Success was defined as complete expulsion of products of conception with no need for surgical intervention.

MVA

MVA was done by 60ml manual vacuum aspiration double valved syringe. The uterine contents aspirated were taken on a gauze piece and examined to identify gestational sac.

3. Results

The mean age in Group A was 28.62 ± 3.40 years and in Group B it was 29.36 ± 3.83 . In Group A 52.83% belong to age group 21-25 and in Group B 46.22% of patient belong to age group 21-25.

Table 1: Distribution of patients according to age

Age (years)	Group A		Group B	
	N	%	N	%
21-25	29	27.35	42	39.62
26-30	56	52.83	49	46.22
31-35	18	16.98	11	10.37
36-40	3	2.83	4	3.77

Table 2: Distribution of patients according to residence

Residence	Group A		Group B	
	N	%	N	%
Rural	12	11.32	11	10.37
Urban	94	88.67	95	89.62

Table 2 shows most of cases coming for MTP belonged to urban area. In Group A 94 (88.67%) and in Group B 95 (89.62%) people reside in urban area.

Table 3: Distribution of patients according to parity

Parity	Group A		Group B	
	N	%	N	%
Nullipara	6	5.66	2	1.88
Para 1	33	31.13	30	28.3
Para 2	48	45.28	36	33.96
Para >3	19	17.92	38	35.84

63 (29.71%) patients were Para 1, 84 (48.16%) were para 2 and 51 (38.06%) were belonging to higher parity. Overall 7 (3.30%) patients were nullipara and most of them (75%) opted for medical method of termination (p value <0.05) which is statistically significant showing more inclination of nulliparous women towards non-invasive procedure.

Table 4: Distribution of cases according to gestational age

Gestation Age Weeks	Group A		Group B	
	N	%	N	%
<6	32	30.18	21	19.81
6-7	48	45.28	46	43.39
7-8	14	13.20	25	23.58
8-9	12	11.32	14	13.20

25% of patients opted for termination of pregnancy before 6 weeks of gestation and 48.2% of patients terminated at gestational age of 6-7 weeks. 25.06% of patients belong to gestational age 7-8 weeks and 12.26 patients belong to gestational age 8-9 weeks.

Table 5: Distribution of patients according to duration of bleeding per vaginum

Duration of bleeding Days	Group A		Group B	
	N	%	N	%
1-4	9	8.49	67	63.20
5-9	66	62.26	32	30.18
10-14	25	23.58	5	4.71
>14	6	5.66	2	1.88

All women reported some bleeding per vaginum. Average duration of bleeding P.V. in Group A = 8.72 ± 3.46 days and Group B = 6.78 ± 2.72 days. Amount and duration of bleeding per vaginum were found to be more in Group A than Group B because spontaneous expulsion of the products of conceptus takes a long time.

Table 6: Distribution of patients according to common side effects and complications in two groups

Side effects	Group A		Group B	
	N	%	N	%
Severe Pain	78	73.58	56	52.83
Nausea	34	32.07	8	7.54
Vomiting	16	15.09	4	3.77
Diarrhea	12	11.32	Nil	-

Severe pain and gastrointestinal symptoms like nausea, vomiting and diarrhoea were more in group A (73.58%, 32.07%, 15.09% and 11.32%) as compared to group B (52.83%, 7.54%, 3.77% and nil).

Table 7: Distribution of patients according to outcome of procedure

Outcome of procedure	Group A		Group B	
	N	%	N	%
Success	98	92.45	104	98.11
Failure	8	7.54	2	1.88

In present study medical abortion procedure was 92.45% successful, with failure rate of 7.54% due to incomplete abortion which was managed by surgical intervention. In group B success rate was 98.11% and 1.88% had incomplete abortion which required reintervention.

4. Discussion

The mean age in Group A was 28.62± 3.40 years and in Group B was 29.36 ±3.83 years which is comparable to study by Garhwal P et al⁵, Rita G Nayak et al⁶, Banerjee et al⁷ and Shetty et al⁸ in which it was 27.63± 3.60, 26± 2.42, 27± 4.2 and 29.8± 4.4 years respectively. In the present study 96.22% patients were multigravida which is comparable to a study by Garhwal P et al in which 95.10% patients were multigravida who opted for termination of pregnancy. 48.2% of patients who opted for termination belong to gestational age 6-7 weeks which is comparable to a study by Garhwal P et al in which 44% of patients belonged to 6-7 weeks of gestation, a study by Nayak R et al in which 41% of patients belonged to 6-7 weeks of gestation and a study done by Mundle et al in which 40% of patients belonged to 6-7 weeks of gestation.

Average duration of bleeding per vaginum in Group A = 8.72±3.46 days and Group B = 6.78±2.72 days which is comparable to a study by Garhwal P et al in which average duration of bleeding per vaginum is 8.924±3.568 days in Group A and 6.837±2.928 days in Group B. In present study, 62.26% patients in Group A experienced bleeding per vagina for 5-9 days which is comparable to a study by Garhwal P et al in which 63.04% patients experienced bleeding for 5-9 days. Similarly in Group B 63.20% patients experienced bleeding for 1-4 days which is comparable to a study by Garhwal P et al in which 63.04% patients experienced bleeding per vaginum for 1-4 days.

Severe pain and gastrointestinal symptoms like nausea, vomiting and diarrhea were more in Group A (73.58%, 32.07%, 15.09% and 11.32%) as compared to Group B (52.83%, 7.54%, 3.77% and nil) which is comparable to a study by Garhwal P et al in which, in Group A 78.26% had severe pain, 32.60% had nausea, 16.30% had vomiting and 19.56% had diarrhea while in Group B 52.17% had severe pain, 7.60% had nausea, 4.34% had vomiting and nil had diarrhea. The gastrointestinal symptoms in medical group are attributable to misoprostol. In the WHO study lower, abdominal pain was reported in 82.8%, nausea in 53.2%, vomiting in 20.5% and diarrhoea in 8.6% of medical abortion cases⁹. A study by Vinita D et al found that in the case of medical abortion, lower abdominal pain was the

most common side effect reported in 80% of the cases, followed by nausea (56.67%), vomiting (16.67%) and diarrhoea (10%)¹⁰. Present study also confirm

The effectiveness of medical method of abortion in present study was 92.45% and success rate of MVA was 98.11% in the present study which was comparable to a study done by Nayak RG et al effectiveness of medical method of abortion was 97.6% and in MVA was 100%, Vinita D et al success rate of medical method was 96.67% and in MVA was 96.91%¹⁰, Garhwal P et al success rate of medical method was 95.65% and 97.82% in MVA⁵, Zhang J et al success rate of medical method was 84 % and 97% in surgical group¹¹ and Rorbye C et al success rate of medical method and MVA was 94.1% vs 97.7%¹².

5. Conclusion

Medical method of abortion for termination of pregnancy upto 9 weeks of gestation can be a better alternative to surgical method i.e., manual vacuum aspiration. Side effects like nausea, vomiting, pain abdomen and diarrhea were more with medical method but majority of these symptoms were self limiting. Amount and duration of bleeding per vaginum is more in medical method as compared to surgical method. Medical method of abortion proves to be safer and economical method that avoids complication associated with surgical method eg Uterine perforation, Cervical injury, Anaesthetic complications. The effectiveness of medical method of abortion in present study was 92.45% and success rate of manual vacuum aspiration was 98.11%. The major disadvantage with medical method of abortion was the lack of predictability. The main advantage with manual vacuum aspiration was short duration of procedure.

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