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Original Research Article

A comparison of manual vacuum aspiration with medical method of abortion in termination of pregnancy up to 9 weeks of gestational age

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ABSTRACT

Background: Objective of present study was to compare efficacy and complications of medical method versus manual vacuum aspiration in early pregnancy termination and to determine whether medical method of termination of pregnancy represent a reasonable alternative to surgical method (MVA) in terms of complete evacuation of products of conception and their side effects.

Methods: A comparative study was carried out on 184 pregnancies in women who were willing for termination of pregnancy up to 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.

Results: Mean age of Group A was 27.63 ± 3.60 years and Group B was 26.87 ± 3.83 years. Majority 169 (92%) of women were Hindu. 165 (90%) of the patients lived in urban area and 176 (96%) were married women. Majority 130 (71%) of them were para 2 and more. Average age of gestation at which termination was performed was 46.79 ± 6.29 days in Group A and 49.13 ± 6.67 days in Group B. Average duration of vaginal bleeding among Group A was found to be 8.9 ± 3.5 days (p value < 0.05) and in Group B was 6.837 ± 2.928 days which was significantly longer in Group A. 72 (78.3%) patients considered vaginal bleeding to be heavier than their normal period in Group A whereas in Group B 8 (8.7%) perceived it to be heavier (p value < 0.001). Incidence of pain, nausea, vomiting, diarrhea and incomplete abortion (78.26%, 32.60%, 16.3%, 19.56% and 4.43%) in group A and (52%, 7.6%, 4.3%, nil and 2.17%) in group B which were found to be higher in Group A as compare to Group B. Patient satisfaction was 95.65% in medical method and 84.78% in MVA group. Success rate was 95.65% for medical and 97.82% for MVA group.

Conclusions: Duration and amount of bleeding per vaginum is more in medical method as compare to surgical method. Side effects like pain, nausea, vomiting and diarrhea were more in medical group, but majority of these symptoms were self-limiting. There was high satisfaction rate (95.65%) among medical abortion group because less surgical and anaesthetic complication, offer them more privacy and treatment is taken at home. The effectiveness of medical method of abortion in present study was 95.65% and success rate in MVA was 97.82%. Medical method of abortion for first trimester termination of pregnancy upto 9 weeks of gestation can be better alternative method to surgical evacuation. Medical method of abortion proves to be more effective, safe and economical method that avoid complication associated with surgical evacuation like uterine perforation, cervical laceration and anaesthetic complication. The only disadvantage with medical method of abortion is lack of predictability and variable success rate.

Keywords: Abortion, Manual vacuum aspiration, Misoprostol, Mifepristone

INTRODUCTION

Every year millions of women are exposed to unprotected intercourse or face failure of contraceptive methods involving risk of unwanted pregnancy. Termination of such unwanted pregnancies are adequately covered by protective umbrella of MTP ACT 1971, with its amendment No -64 (19 Dec 2002). The overall risk of death from legal abortion is less than 1 per 100000. But even after 42 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 year out of which 8% are due to unsafe abortion which is serious concern.¹ There is an unmet need for an easily available method of early pregnancy termination which is both safe and effective. Two methods which fulfil this need are medical method of abortion using mifepristone and misoprostol and surgical abortion with manual vacuum aspiration.

METHODS

This is a prospective comparative study conducted in Department of Obstetrics and Gynecology SMS Medical College, Jaipur (Rajasthan) from March 2015 October 2016. A total number of 184 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

- Anemia Hb< 8gm%
- Gestation >9weeks
- Ectopic pregnancy
- Molar pregnancy
- 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 and mobility of uterus the 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.

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. Misoprost 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. Inj Anti D 300ug given within 72hrs of abortion 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 syring. The uterine contents aspirated were taken on a gauze piece and examined to identify gestational sac.²

RESULTS

Mean age – In Group A =27.63±3.60 years and In Group B =26.87±3.83 years. which is comparable to a study by Rita G Nayak et al, Banerjee et al and Shetty et al where mean age group of patients was 26±2.42, 27±4.2 and 29.8±4.4 respectively.²⁻⁴

Table 1: Distribution of patients according to age.

Age	Group A		Group B		P value
	N	%	N	%	
<20	2	2.1739	-	-	0.75
21-25	26	28.26	39	42.3913	
26-30	56	60.86	40	43.4782	
31-35	7	7.60	11	11.9565	
36-40	1	1.08	2	2.1739	

The above Table 2 shows most of cases coming for MTP belonged to urban area. In group A 82 (89.13%) and in group B 83 (90.22%) people reside in urban area.

Table 2: Distribution of patients according to residence.

Residence	Group A		Group B		P Value
	N	%	N	%	
Rural	10	10.87	9	9.78	0.809
Urban	82	89.13	83	90.22	

Table 3: Distribution of patients according to marital status.

Marital status	Group – A		Group –B	
	N	%	N	%
Married	85	92.39	91	98.92
Unmarried	4	4.35	0	0.00
Widow	2	2.17	0	0.00
Separated	1	1.09	1	1.09

p value=0.102

Table 3 shows that majority of patients were married 176 (95.65%). In group A 85 (92.39%) cases and in group B 91 (98.91%) were married. There were 4 patients who were unmarried and all opted for medical termination.

Table 4: Distribution of patients according to parity.

Parity	Group-A		Group-B	
	N	%	N	%
Nullipara	7	7.60	2	2.17
Para 1	24	26.08	21	22.82
Para 2	39	42.39	28	30.43
Para >3	22	23.91	41	44.56
Total	92	99.9999	92	99.9998

p value = 0.15

45 (24.45%) patients were Para 1, 67 (36.41%) were para 2 and 63 (34.23%) were belonging to higher parity. Overall 9 (4.89%) patients were nulliparas and most of them (77.77%) 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 7: Distribution of patients according to common side effects and complications in two groups.

Side effects and comp	Group A		Group B				P value		
			Patients requiring treatment		Patients requiring treatment				
	N	%	N	%	N	%			
Severe pain	72	78.26	15	20.83	48	52.17	12	25	<0.001
Nausea	30	32.60	2	6.66	7	7.60	2	28.57	<0.001
Vomiting	15	16.30	1	6.66	4	4.348	2	50	0.008
Diarrhea	18	19.56	1	5.55	-	-	-	-	<0.001
Fever	6	6.52	1	16.6	-	-	-	-	
Tiredness	4	4.34	-	-	2	2.1239	-	-	
Headache	2	2.1739	-	-	-	-	-	-	
Incomplete A	4	4.4378	-	-	2	2.1739	2	100	0.406

Table 5: Distribution of cases according to gestation age.

Gestation age Days	Group-A		Group-B	
	N	%	N	%
<42	29	31.52	15	17.39
43-49	39	42.39	43	46.73
50-56	16	17.39	22	23.91
57-63	8	8.69	12	13.04

p value=0.094

Average gestational age in Group A = 46.79±6.29 days and Group B = 49.13±6.67days (6-7weeks), 44% of patients belongs to this gestational age which was comparable to a study by Nayak R et al in which 41 % of patients belonged to 6-7 weeks (mean age) and study by Mundle et al in which 40% patient belonged to 6-7 weeks and mean age was 45 days in a study by Platais I et al.^{2,5,6}

Table 6: Distribution of patients according to duration of bleeding per vaginam.

Duration of bleeding Days	Group A		Group B		p value
	N	%	N	%	
1-4	8	8.69	58	63.04	<0.001
5-9	58	63.04	28	30.43	
10-14	22	23.91	4	4.34	
>14	4	4.34	2	2.2	

P Value= <0.001

Average duration of bleeding P.V. in Group A = 8.924±3.568 days and Group B = 6.837±2.928 days. Amount and duration of bleeding per vaginam were found to be more in Group A because spontaneous expulsion of the products of conceptus takes a long time and heavy bleeding persist during this period.

In a study by Davis A et al found that medical abortion group had a mean of 14 days bleeding which was higher than the MVA group mean of 9 days.

Severe pain and gastrointestinal symptoms like nausea, vomiting and diarrhoea were more in group A (78.26%, 32.60%, 16.30% and 19.56%) as compared to group B (52.17%, 7.60%, 4.34% and nil). 4 (4.4%) cases of group A and 2 (2.17%) cases of group B had incomplete abortion and required curettage. According to Nayak RG et al Participants did not experience any serious complications.² All women (100%) reported at least some bleeding, out of these 2.4% patients had heavy bleeding but blood transfusion was not required. 6.02% patients had vomiting and 2.40% had fever and 2.40% had incomplete abortion in medical method of abortion. Only One case of uterine perforation was noted in group B. 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 cases.⁷ 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%).⁸ Present finding confirm this.

Table 8: Distribution of patients according to outcome of procedure.

Outcome of procedure	Group A		Group B	
	N	%	N	%
Success	88	95.65	90	97.82
failure	4	4.34	2	2.17

Medical abortion procedure was 95.65% successful, with failure rate of 4.34% due to incomplete abortion which was managed by surgical curettage. In group B had success rate of 97.82% and 2 had incomplete abortion required curettage. The effectiveness of medical method of abortion in present study was 95.65% and success rate of MVA was 97.82% 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%, Zhang J et al success rate of medical method was 84% and 97% in surgical group and Rorbye C et al success rate of medical method and MVA was 94.1% vs 97.7%.^{2,8-10}

DISCUSSION

Mean age – In Group A =27.63±3.60 years and In Group B =26.87±3.83 years. which is comparable to a study by Rita G Nayak et al, Banerjee et al and Shetty et al where mean age group of patients was 26±2.42, 27±4.2 and 29.8±4.4 respectively.²⁻⁴ Majority of patients were married 176 (95.65%). In group A 85 (92.39%) cases and in group B 91 (98.91%) were married. Average gestational age in Group A = 46.79±6.29 days and Group B = 49.13±6.67days (6-7 weeks), 44% of patients belongs to this gestational age which was comparable to a study by Nayak R et al in which 41% of patients belonged to 6-7 weeks (mean age) and study by Mundle

et al in which 40% patient belonged to 6-7 weeks and mean age was 45 days in a study by Ingrida Platais et al.^{2,5,6} Average duration of bleeding P.V. in Group A = 8.924±3.568 days and Group B = 6.837±2.928 days. Amount and duration of bleeding per vaginum were found to be more in Group A. In a study by Davis A et al found that medical abortion group had a mean of 14 days bleeding which was higher than the MVA group mean of 9 days.

The effectiveness of medical method of abortion in present study was 95.65% and success rate of MVA was 97.82% in my 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%, Zhang J et al success rate of medical method was 84% and 97% in surgical group and Rorbye C et al success rate of medical method and MVA was 94.1% vs 97.7%.^{2,8-10}

CONCLUSION

Thus, we conclude that duration and amount of bleeding per vaginum is more in medical method as compared to surgical method. Side effects like pain, nausea, vomiting and diarrhea were more in medical group, but majority of these symptoms were self-limiting. There was high satisfaction rate (95.65%) among women who underwent a non-operative procedure (medical method) because less surgical and anaesthetic complication, offer them more privacy and treatment is taken at home. The effectiveness of medical method of abortion in present study was 95.65% and success rate in MVA was 97.82%. Medical method of abortion for first trimester termination of pregnancy upto 9 weeks of gestation can be better alternative method to surgical evacuation.

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