

A CLINICAL STUDY OF MANUAL VACUUM ASPIRATION IN WOMEN UNDERGOING FIRST TRIMESTER ABORTIONS.

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Abstract: Background-According to WHO, 42 million pregnancies end annually in induced abortions, 20 million of which are estimated to be unsafe. Globally, unsafe abortion accounts for 13% of maternal deaths, 99% of which occur in the developing world. This is mainly due to unavailability of the services and the underutilisation of the available services.

Materials and methodology-A prospective observational study of 650 women, selected by non-probability convenience sampling method and who met the designed set of criteria, was conducted.

Results- In this study maximum number of participants were 238 (36.62%) in the age group of 21-25 years. Most participants 527 (81.07%) of the women were multigravida and 37.85% were having gestational age (GA) between 8.1-10 week. Maximum number of participants 45.54% underwent MTP, among which 235 (36.15%) patients were terminated under ground V. Further 84.62% had no complaints of pain post-operatively. Further analysis reveals that there was significant correlation between GA and duration of procedure as $p < 0.05$. In the study, 97.69% women did not have any associated complications. In the present study, Intrauterine contraceptive device (Copper T) was the most accepted method of contraception post MVA in 182 (28%) women, followed by oral pills in 169 (26%) women, tubal ligation in 130 (20%) women, condoms in 62 (9.53%) women, DMPA injection in 57 (8.76%) women and 50 (7.69%) women refused the use of any sort of contraception.

Conclusion-MVA is both safe & effective in first trimester medical termination of pregnancy and early trimester abortion. MVA is safe, cost-effective and reduces hospital stay as compared to inpatient based management.

Keywords: WHO, MTP, GA.

Introduction

The WHO defines unsafe abortion as procedure for terminating an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking minimal medical standards, or both.¹ According to WHO, 42 million pregnancies end annually in induced abortions, 20 million of which are estimated to be unsafe. Globally, unsafe abortion accounts for 13% of maternal deaths, 99% of which occur in the developing world. This is mainly due to unavailability of the services and the underutilization of the available services. This is due to lack of knowledge among the community regarding the legality and availability of abortion services, cultural sensitivity, hesitancy to avail services from the male partner and lack of post abortion care. There is also lack of knowledge and underutilization of family planning services leading to unplanned pregnancies that lead to unsafe abortion.²

Post abortion care is the global strategy to reduced death and suffering from the complications of unsafe and spontaneous abortion and comprise five elements: Treatment, Counseling, Contraception and family planning services, reproductive and other health Services and community and service provider partnerships. Comprehensive Abortion Care (CAC) includes all the elements of post abortion care as well as safe induced abortion for all legal indications.³

Unsafe abortion is a significant yet preventable cause of maternal deaths. Though Medical Termination of Pregnancy (MTP) has been legalized in India since 1971, the access to services is still a challenge, especially in the rural and remote regions of the country. While there is a desire for small families among married couples, this has not translated into contraception usage. Further, no contraceptive is

100% effective and therefore, safe abortion services would always be a necessary component of reproductive healthcare.⁴

IPAS introduced the concept of CAC in India in the year 2000. IPAS development foundation's CAC program strives to provide safe, high quality services including abortion, post abortion care and family planning, which are affordable and acceptable to women.⁵

1. **Aim and objectives**

- This study was aimed to study the demographic profile i.e., residence, education, socio-economic status and religion of women undergoing MVA.
- To study the complications of MVA.
- To study the contraceptive acceptance after undergoing abortion.

2. **Material and Methodology**

A prospective observational study conducted in the department of obstetrics and gynaecology in tertiary care hospital from 2019-2021. The study was conducted after formal approval of institutional ethical committee. Total 650 samples were selected and who met the designed set of criteria. Informed written consent was taken from patients and their families.

Inclusion criteria:

1. Women who are willing to participate in the study.
2. All the women undergoing MVA at this institute.
3. Women with no clinical signs of infection (fever, offensive discharge or generalized lower abdominal pain).
4. Women with missed abortion.
5. Women with blighted ovum.
6. Women with incomplete abortion.
7. Women with early pregnancy failure

Exclusion criteria:

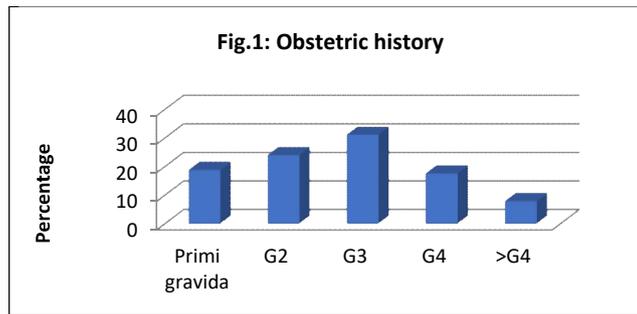
1. Women not willing to participate in study.
2. Women with >12 weeks period of gestation.
3. Women with fibroid uterus >12 weeks in size.
4. Women with uterine malformation.
5. Women with uterine infection.

Clinical grounds for inclusion:

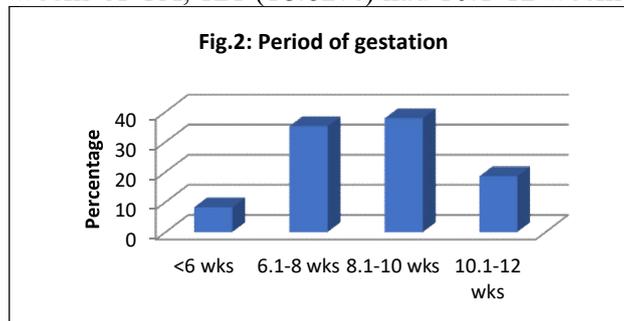
A thorough clinical examination and pelvic examination was carried out which included the inspection of the cervix and the vaginal canal for abnormalities, signs of infection and any vaginal discharge. Bimanual examination was done to note the size, shape, position and mobility of the uterus. A cafeteria approach of contraception was provided. The women were explained about the available methods of contraception and counselling regarding the advantages and disadvantages of every contraceptive was explained.

3. **Results**

A total 650 cases in the study period were analysed. In the present study, it was observed that 238 (36.62%) women were in the age group of 21-25 years and mean age was found to be 26.18 ± 5.14 . About 443 (68.15%) women had secondary education and 382 (58.77%) women were from rural area. Most of cases 286 (44%) were belonging to upper lower class followed by 144 (22.15%) in lower class, 133 (20.46%) in lower middle class and 87 (13.39%) in upper middle class.



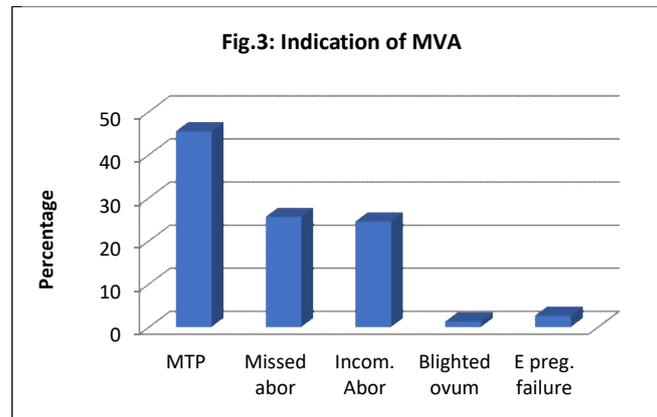
In the study, 527 (81.07%) of the women were multigravida and 123 (18.92%) cases were Primigravida. 246 (37.85%) women were having gestational age (GA) between 8.1-10 week followed by 229 (35.23%) women with 6.1-8 weeks of GA, 121 (18.62%) had 10.1-12 weeks of GA.



Most of cases 296 (45.54%) underwent MVA indicated for MTP among which 235 (36.15%) patients were terminated underground V i.e. contraceptive failure. Other indications being missed abortion in 167 (25.69%) women, followed by incomplete abortion for 160 (24.62%) women, 18 (2.77%) had early pregnancy failure and 9 (1.38%) had blighted ovum.

Table 1: Distribution cases according to indication of MVA

SN	Indication	Frequency (n=650)	Percentage
1	Medical Termination of pregnancy (MTP)	296	45.54
	a. To save life of pregnant women	01	00.15
	b. To prevent grave injury to physical and mental health of mother	49	07.54
	c. Eugenic (Anomalous Fetus)	04	00.62
	d. Humanitarian (Rape)	07	01.08
	e. Contraceptive failure	235	36.15
2	Missed abortion	167	25.69
3	Incomplete abortion	160	24.62
4	Blighted ovum	9	01.38
5	Early pregnancy failure	18	02.77
	TOTAL	650	100



Out of 650 cases 239 (36.77%) cases had associated high risk factors which were Anemia in 97 (14.92%) women, Previous one LSCS in 53 (8.15%) women, hypothyroidism in 28 women (4.31%), Previous two LSCS in 21 (3.23%) women, Diabetes Mellitus in 12 (1.85%) women, hypertension in 10 (1.54%) women, heart disease in 2 (0.31%) women and H/O any uterine surgery other than LSCS in 2 (0.31%).

Table 2: High Risk factors

S.N.	High risk factors	Frequency (n=650)	Percentage
1	Anemia	97	14.92
2	Previous 1 LSCS	53	08.15
3	Previous 2 LSCS	21	03.23
4	Previous 3 LSCS	03	00.46
5	Hypothyroidism	28	04.31
6	Hypertension	10	01.54
7	Heart Disease	02	00.31
8	H/O any uterine surgery other than LSCS	02	00.31
9	Diabetes Mellitus	12	01.85
10	Other	11	01.69
11	No any associated risk factors	411	63.23

In present study, 97.69% women did not have any associated complications. In 15 (2.31%) cases blood loss more than 100 ml were observed during MVA.

Table 3: Intra-operative complications

S. N.	Intra-operative Complication	Frequency (n=650)	Percentage
1	No complication	635	97.69
2	Blood loss >100 ml	15	02.31
3	Injury to the cervix	00	0
4	Anesthetic	00	0

	complication		
5	Uterine perforation	00	0

Table 4: Post-operative complications

S.N.	Post-operative complications	Frequency (n=650)	Percentage
1	Bleeding	04	00.62
2	GI symptoms (diarrhea, nausea & vomiting)	64	09.85
3	Fever	10	01.54
4	Incomplete abortion	02	00.31
5	No any complication	570	87.69

In the present study almost 550 (84.62%) had no complaints of pain postoperatively assessed through visual analog scale (VAS). In 9.85% GI symptoms (such as diarrhoea, nausea & vomiting) were observed which could be attributed to the use of misoprostol.

Table 5: Post-operative pain score according to VAS

S.N.	Pain score	Frequency (n=650)	Percentage
1	No pain	550	84.62
2	Mild pain	74	11.38
3	Moderate pain	26	04.00
4	Severe pain	0	0
5	Very severe pain	0	0
6	Worst possible pain	0	0

Mean duration of MVA procedure was found to be 9.07 ± 1.68 . there was significant correlation between GA and duration of procedure $p < 0.05$. There was no correlation found between GA, duration of procedure & high risk factors.

Table 6: Correlation between GA and duration of the procedure

S.N.	Weeks of Gestation	Mean duration \pm SD	p value
1	<6 weeks	8.65 \pm 1.77	0.024
2	6.1-8 weeks	8.75 \pm	$P < 0.05$

		1.52	
3	8.1-10 weeks	9.26 ± 1.57	
4	10-12 weeks	9.50 ± 1.96	
	Overall	9.07 ± 1.68	

S: Significant

Table 7: Correlation between GA, duration of the procedure and associated high risk factors

S.N.	Weeks of Gestation	Mean ± SD	High risk factor		p Value
			Yes	No	
1	<6 weeks	8.65 ± 1.77	12	42	0.551 NS P>0.05
2	6.1-8 weeks	8.75 ± 1.52	90	139	
3	8.1-10 weeks	9.26 ± 1.57	89	157	
4	10-12 weeks	9.50 ± 1.96	48	73	

NS: Not Significant

In the present study, Intrauterine contraceptive device (Copper T)was the most accepted method of contraception post MVA in 182 (28%) women , followed by oral pills in 169 (26%) women , tubal ligation in 130 (20%) women , condoms in 62 (9.53%) women , DMPA injection in 57 (8.76%) women and 50 (7.69%) women refused the use of any sort of contraception. In our study we found that, 50 women refused the use of any contraception after the procedure. The commonest reason for refusal being those who were Primigravida (27) and willing to conceive again.

Table 8: Distribution according to contraception

S.N.	Contraception	Frequency (n=650)	Percentage
1	Oral pills	169	26.00
2	Condom	62	09.53
3	Copper T	182	28.00
4	DMPA	57	08.76
5	Tubal Ligation	130	20.00
6	None	50	07.69

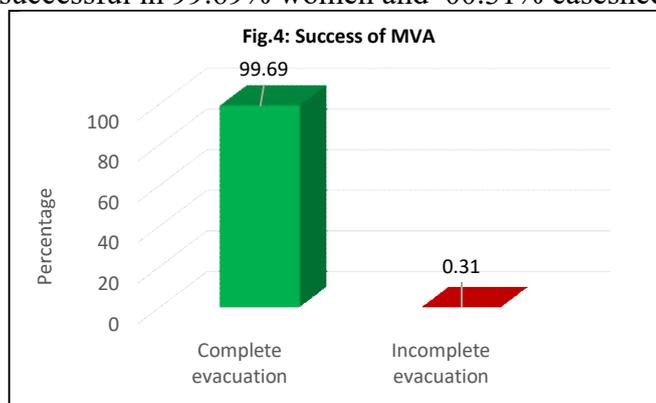
About 16 women did not accept contraception due to myths regarding the use of contraception. The myths being IUCD being stuck in the uterus, being infertile forever and not able to conceive again, religious beliefs regarding the use of contraception and family pressure for further conception. Despite giving a cafeteria approach and counselling regarding the use of contraception these women were not willing for the use of any contraception.

Table 9: Duration of hospital stay

S.N.	Reasons for non-acceptance	Frequency (n=650)	Percentage
1	Less than 24 hours	506	77.85

2	More than 24 hours	144	22.15
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About 506 (77.85%) were discharged in less than 24 hours whereas 144 (22.15%) cases were discharged after 24 hours. MVA was successful in 99.69% women and 00.31% cases needed further management.



4. Discussion

MVA has been commonly used as a procedure for abortion in early trimesters. MVA has been listed as an effective and safe method of uterine evacuation by WHO. De-spite being simple, inexpensive and easy to handle tool, its use in most of the hospitals is restricted due to unfamiliarity of the clinicians with its use. This study was conducted to assess the efficacy and safety of MVA in pregnancy termination and early pregnancy loses. Efficacy of MVA in this study was 99.69% comparable to reported in the literature. With regards to the safety and complications, MVA was found safe.

Our findings shows that mean age was found to be 26.18 years and standard deviation was 5.14. Similarly, in study done by Samal SK. et.al.⁶ found mean age was 27.7. Other studies by Jayshree V et al.⁷ found mean age to be 24.39. Anozie OB et al.⁸ (28.5) and Takai IU et al.⁹ (28.3) found mean age little more than our findings.

In the present study, 443 (68.15%) of the cases had secondary education. Similarly in study by Azman A. et.al. found that most of women (55.2%) had secondary education. Majority of women ,382 (58.77%) were from rural area which is correlated to study done by Samal SK et al.⁶ and Garhwal P et.al.¹⁰.

We found that 81.08% were multigravida and 18.92% were primigravida. Our findings were correlated to the study done by Gupta K et.al.¹¹ Where majority 95% women were multigravidas also Azman A et al.¹² reported that 89.6% study participants were multigravidas. Majority of the cases, 71 % were having gestational age between 6 to 12 weeks. Our findings were similar to the studies by Garhwal P et.al.¹⁰, Kamel H et al.¹³ and Gupta K. et.al.¹¹.

In our study, in 45.54% of the women MVA was done for medical termination of pregnancy. Studies by Samal SK et.al.⁶, Patil T et.al.¹⁴ and Dutta BK et.al.¹⁵ studied MVA done for medical termination of pregnancy in first trimester.

In 15 (2.31%) cases blood loss more than 100 ml was observed during MVA. results were similar to studies conducted by Gupta K et.al.¹¹, Tasnim N et.al.⁶⁵, Jayshree V et.al.¹⁶ and Dutta BK et.al.¹⁵

Mean duration of procedure was found to be 9.07 ± 1.68 in the present study. Similar findings were seen in a study by Kubra K et.al.¹⁷. Difference in the duration with other studies due to most number of cases (91%) had gestational age between 6-12 weeks in our study.

We found that only 15.38 % of patients experienced mild to moderate type of pain not requiring any medication for relief. Patil T et.al.¹⁴ conducted a study where similar results were found. Mondal W et.al.¹⁸ conducted a randomized controlled trial comparing oral misoprostol vs manual vacuum

aspiration in management of incomplete abortion and found that 6.25% of the patients experienced severe pain after MVA.

In the present study maximum numbers of cases 182 (28%) were using copper T (Cu T) as a contraception. 50 women refused the use of any contraception after the procedure. The commonest reason for refusal being those who were Primigravida (27) and willing to conceive again.

Maximum number of cases 506 (77.85%) got discharged in less than 24 hours. Studies conducted by Jayshree V et.al.¹⁶, Dabhi et.al.¹⁹ and Patil T et.al.¹⁴ showed similar results.

The success rate in our study was 99.69%. Similar results were seen in a study conducted by Bhardwaj M. et.al.²⁰ (100%), Swati B. et.al.²¹ (98%) and Mondal et.al.¹⁸ (95.8%). MVA is safer, less painful and associated with less complications than D and C. Hence over a period of time it has become the best method for surgical evacuation in less than 12 weeks gestational age .

5. Conclusion

MVA is easily accessible to women of both rural and urban societies belonging to any socioeconomic status, so a greater number of MTP can be done in a day at hospital and PHC center. The clinicians have to make decisions as to which method to use for individual patient with different characteristics. MVA is both safe & effective in first trimester medical termination of pregnancy and early trimester abortion. MVA is safe, cost-effective and reduces hospital stay as compared to inpatient based management.

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