



## A COMPARATIVE STUDY OF MVA VERSUS ELECTRIC SUCTION IN FIRST TRIMESTER ABORTION- IN VIVO STUDY

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### KEYWORDS :

#### INTRODUCTION

Unwanted pregnancy as a consequence of failure to obtain appropriate contraceptive services often result in induced abortion, both legal and illegal. Illegal abortion has been the source of considerable morbidity and mortality.

The major causes of death in abortion are sepsis and haemorrhage whose severity depends largely upon the circumstances surrounding the initiation of the process and its subsequent management. In order to avoid such catastrophes liberalization of abortion occurred in most of the countries between 1950-1970

One of the main objections of introducing the Act was to reduce mortality and morbidity, due to illegal abortion. Although the mortality due to complications of abortions has decreased over the years. It is still a major contribution to maternal death (12% of maternal death).<sup>2</sup>

#### AIMS & OBJECTIVES

- To assess the safety and effectiveness of M.V.A. technique for uterine evacuation in cases of:
  - Early elective 1<sup>st</sup> trimester abortion.
  - Inevitable abortion.
  - Incomplete abortion.
  - Missed abortion.
- To analyse time of operation and blood loss.
- To compare the complications of MVA and Electrical (Suction Evacuation) method in 1<sup>st</sup> trimester abortion.
- To compare the duration of hospitalization.

#### MATERIAL & METHOD

This study includes comparison between M.V.A. technique and electrical suction in 1<sup>st</sup> trimester abortion. This study has been carried out in the Department of Obstetrics & Gynaecology, Government Medical College Raigarh (C.G.) from January 2015 to May 2016.

A total of 150 patients were considered for the study. They were divided into two groups, group-A (MVA) and group-B (ES) including 75 cases in each group.

#### Inclusion Criteria :

- Those women seeking termination of 1<sup>st</sup> trimester pregnancy.
- Those women who have -
  - Incomplete abortion.
  - Inevitable abortion.
  - Missed abortion.

#### Exclusion Criteria :

- H/o Amenorrhoea more than 12 weeks.
- H/o Bleeding disorders.
- H/o Drug allergies.
- Acute purulent cervicitis or pelvic infection.

#### OBSERVATIONS

**TABLE - 1 Distributions of cases according to Gestational Age.**

S.No Gestational	Age	No. of Cases	Percentage %	No. of Cases	Percentage %
		Group (A) MVA		Group (B) ES	
1	6-8	55	73.34	47	62.66
2	9-12	17	22.66	16	21.34
3	11-12	3	4	12	16
<b>Total</b>		<b>75</b>	<b>100</b>	<b>75</b>	<b>100</b>

Mean gestational age in Group A = 7.49

Mean gestational age in Group B = 7.93

In maximum number of cases gestational age was 6-8 weeks in both the groups.

**TABLE - 2 Distributions of cases according to Parity**

S.No	Parity	No. of Cases	Percentage %	No. of Cases	Percentage %
		Group (A) MVA		Group (B) ES	
1.	0	6	8	3	4
2.	1	29	38.67	26	34.66
3.	2	28	37.34	29	38.66
4.	3	7	9.33	11	14.67
5.	4	4	5.33	4	5.34
6.	> 4	1	1.33	2	2.67
<b>Total</b>		<b>75</b>	<b>100</b>	<b>75</b>	<b>100</b>

Mean parity in Group A = 1.69

Mean Parity in Group B = 2.24

Maximum cases from both the groups were para 1 and 2

**TABLE - 3 Distribution of cases according to Indication**

S.No	Indication	No. of Cases	Percentage %	No. of Cases	Percentage %
		Group (A) MVA		Group (B) ES	
1.	Social	38	50.67	26	34.67
2.	Socioeconomic	30	40	45	60
3.	Incomplete abortion	3	4	4	5.33
4.	Missed abortion	4	5.33	0	0
<b>Total</b>		<b>75</b>	<b>100</b>	<b>75</b>	<b>100</b>

In majority of case in both the groups the indication for MTP was social & Socioeconomic.

**TABLE - 4 Distributions of cases according to Blood Loss**

S.No	Amount	No. of Cases	Percentage %	No. of Cases	Percentage %
		Group (A) MVA		Group (B) ES	
1.	0-20	25	33.33	15	20
2.	>20-40	24	45.33	30	40
3.	>40-60	12	16	14	18.67
4.	>60-80	1	1.34	7	9.33
5.	>80-100	1	4	6	12
6.	>100	2	0	3	0
<b>Total</b>		<b>75</b>	<b>100</b>	<b>75</b>	<b>100</b>

In both the groups maximum cases had blood loss between 20-40 ml.  
 Mean blood loss in group-A 33.46+23.40. in group B 47.3+31.67

**TABLE - 5 Distribution of cases according to immediate complication observed**

S.No	Complication	No. of Cases	Percentage %	No. of Cases	Percentage %
		Group (A) MVA		Group (B) ES	
1.	Nausea	4	5.34	4	5.34
2.	Vomiting	2	2.67	2	2.67
3.	Excessive bleeding	2	2.67	4	5.34
4.	Pain in abdomen	2	2.67	10	13.34
<b>Total</b>		<b>75</b>	<b>100</b>	<b>75</b>	<b>100</b>

Pain in abdomen was experienced in 10 cases of group-B compared to 2 cases in group-A.

**DISCUSSION**

Reproductive health issues is an important matter specially for a women of the developing country. Out of various such issues, abortions is an important everyday medicolegal, social, political and public health issue. Abortions from upto 65% of the gynaecological admissions and has been reported to contribute to about 30% of maternal deaths. Every day newer advancement are coming in the field of abortion. Since last few decade vacuum aspiration has become standard surgical procedure for sage pregnancy termination.

Most of these procedures performed in the operation theater using suction curettage and an electric vacuum pump.

In order to compare the electric suction and manual vacuum aspiration, a randomised study was undertaken.

**Gestational Age:**

Most of the cases i.e. 90.67% of group A and 89.34% of group B belonged to 6-8 weeks gestational age. The mean gestational age for group A was 7.49 weeks and group B 7.93 weeks. (Table-1)

**Parity Status:**

Most of the cases in both the groups were para-1 and para-2. Mean parity in group=1.69 and in group B = 2.24.

**Indications:**

In group-A the main indication for pregnancy termination were social (50.6%) and socioeconomic (40%) in group-A. (Table-3) Similarly in group-B social (34.67%) and socioeconomic (60%) indications were common. In our study majority of abortion was induced as the pregnancies are unwanted because of social and economic circumstances. This strongly suggests the need for comprehensive women of reproductive age groups. Contraceptive use is very low among women with abortion, this may because of lack of awareness, inaccessibility, non-availability, non-affordability of contraceptive services, or other confounding factors.

**Blood Loss:**

The average blood loss found in group-A was 33.46 ml and in group 47.3 ml. 45.33% cases of group-A and 40% cases of group-B had blood loss between 20-40 ml. Blood loss more than 100 ml was group-A with 10-12 weeks uterus size maximum blood loss i.e. 150 ml was seen, she was observed for 3 hours and found to have no any major complication. As the syringe has a capacity of 60 c.c. it containscurette vacuum unitl 80% or 50 cc of the syringe is filled, vacuum was created for the second time in 11 cases of MVA. (Table-4)

In the present study the blood loss was measured including the products of conception the blood loss was measured including the products of conception. After the evacuation of uterus we routinely

used injection ergometrine to reduce the blood loss and the result observed was very good.

**Complications:**

The total complication rate in group-A was 13% whereas in group-B it was 26.66%, which demonstrated a statistical difference (p < 0.05) [Table-14]. Nausea and vomiting were equally observed in both the groups, but pain in abdomen was experienced more in cases of group-B. (10 verses 2 (P value < 0.05) Excessive bleeding was observed in 2 cases of group-A and 4 cases in group-B during the procedure, but non of them required blood transfusion or prolonged hospitalization.

**SUMMARY**

The present study “A comparative Study of MVA versus Electric Suction in First Trimester Abortion” was conducted in the Department of Obstetrics and Gynaecology, Government Medical College, Raigarh(C.G.) from January 2015 to May 2016. Total 150 cases, 75 each in MVA and Electric suction group were included in the study. The following inferences were made in the study

- Maximum of the women from both the groups were between 6-8 weeks gestational age. The mean gestational age was 7.49 weeks in group A and 7.93 weeks in group B.
- Maximum number of cases were para one in group A and para two in group B. mean parity was 1.69 and 2.24 in group B.
- Only one case in group-A was unmarried.
- Most of the women had MTP for social and socioeconomic reasons in both the groups.
- Majority of the women in both the groups had 20-40 ml blood loss. The minimal blood loss was few cc. and maximum blood loss was 150 ml with a mean blood loss of 33.46 ml in group A and 15 ml to 140 ml in group B with a mean blood loss of 47.3 ml blood loss was 29% more in group B.
- In maximum cases in both the groups 5-10 min was required to complete the procedure.
- Only minor complications like nausea, vomiting were observed in both the groups. More cases in group-B experienced pain in abdomen. Excessive bleeding was observed in 2 cases and 4 in group-A and group-B respectively.

**CONCLUSION**

With the aim to improve reproductive health, newer, cheap, safe and advanced manual method of vacuum aspiration (MVA) was introduced. This study was done to compare the effectiveness of the newly introduced MVA with electric suction.

In the present study we found the MVA instrument simple, portable, cheap and easy to use with minimum training with the advantage of silence, non dependence on electricity less blood loss and shorter duration of hospital stay. Its smaller size canula obviates the need of cervical dilatation, therefore the procedure is less painful. Post procedure discomfort and complications were very less. MVA instrument can also serve as a back-up method in case of either spontaneous incomplete abortion or as a result of failure of medical method. It can also be used safely in case of missed abortion. In the present study MVA method was found more effective than electrical suction method.

Thus it is concluded that MVA is a safe and effective method of uterine evacuation in the hand of experienced person and that it can improve management of first trimester induced abortion in our setup.

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