

Comparison of Efficacy of Manual Vacuum Aspiration versus D&C in Patients with Incomplete and Missed Miscarriage

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ABSTRACT

Background: The abortion is the end of pregnancy by ejection of embryo from the uterus preceding practicality. Some studies suggested that 20% of pregnancies overall end in abortion. It is assessed that 30-50% women undergo at least one incited abortion during their lifetime. The abortions can be performed by different techniques like manual vacuum aspiration (MVA), electric vacuum aspiration (EVA), dilatation and curettage (D&C).

Aim: To compare the efficacy of manual vacuum aspiration versus D&C in patients with incomplete and missed miscarriage in terms of complete uterine evacuation of the products of conception.

Type of Study: Randomized control trial.

Setting: Study was done in the Department of Obstetrics & Gynaecology, DHQ Hospital Mirpur AJK.

Duration of Study: Six months from 1st January 2018 to 30th June 2018.

Results: In our study, 73(66.36%) in Group-A and 67(60.91%) in Group-B were between 18-30 years while 37(33.64%) in Group-A and 43(39.09%) in Group-B were between 31-45 years of age, Mean±SD was calculated as 27.37±5.99 years in Group-A and 28.45±6.50 in Group-B. Comparison of efficacy of manual vacuum aspiration versus D&C was recorded in 104(94.55%) in Group-A and 64(83.64%) in Group-B while 6(5.45%) in Group-A and 18(16.36%) in Group-B were not treated effectively.

Conclusion: We concluded that efficacy of manual vacuum aspiration is significantly higher than D&C in patients with incomplete and missed miscarriage in terms of complete uterine evacuation of the products of conception.

Keywords: Incomplete and Missed Miscarriage, Products of Conception, Complete Uterine Evacuation, Efficacy.

INTRODUCTION

Dilatation and curettage (D&C) can be performed for both diagnostic and therapeutic indications.¹ A therapeutic indications for performing D&C is to remove retained products of conception. The abortion is a very common complication of pregnancy and its incidence varies 10-20% in clinically recognized pregnancies² conducting the procedure in operating room In Pakistan approximately 890,000 women under general anaesthesia means more consumption of healthcare resources and patients prolonged hospital stay and cost.³ In Pakistan approximately 890,000 women present with missed miscarriage or incomplete miscarriage annually and estimate annual miscarriage rate is 29 per thousand women of age 15-49 years⁴.

Treatment options for first and early second trimester miscarriage include expectant, medical and surgical management.⁵ Surgical options for women are dilatation & curettage or by suction evacuation³. The World Health Organization suggests that D&C as a strategy of surgical abortion when manual vacuum aspiration (MVA) is inaccessible.⁶ MVA is a technique for uterine evacuation which is cost effective, simplicity and portability make it an especially valuable reproductive health technology³. This innovative technology for uterine evacuation and endometrial sampling consists of a vacuum syringe with an

adapter for flexible or rigid cannula³. This technique is in use for last three decades initially for incomplete miscarriage but currently it is being also used for missed carriage, termination of pregnancy and endometrial sampling⁷. If MVA done in out-door basis instead in operating room, the result of vacuum uterine aspiration subsequently low cost⁸ and significantly reduce the waiting time of services of patients. When conducted in the outpatient setting rather than operating room, vacuum uterine aspiration can result in subsequent cost savings⁸ and significantly reduce pts waiting periods of services⁹.

A recent study demonstrate that 8% patients in MVA and 20% in D&C group were evacuated successfully which shows the significant difference¹⁰ (they included only 50 patients in their study), on the other hand another study compared the efficacy and safety of various methods of surgery in first trimester abortion and recorded in both, D&C and vacuum aspiration are effective methods for first trimester termination of pregnancy. The review does not reveal women's or surgeons' preference of one method over the other, the limitation of the study was that they did not show the magnitude of the efficacy of both procedures which creates discrepancy in the results.

METHODOLOGY

Randomized control trial was done in the Department of Obstetrics & Gynaecology, DHQ Hospital Mirpur AJK during a period of six months from 1st January 2018 to 30th June 2018. Permission of the research was sought from the

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departmental ethical committee. A total of 220 cases (110 in each group) fulfilling the inclusion/exclusion criteria were enrolled and compare with efficacy of manual vacuum aspiration versus D&C patients with incomplete and missed miscarriage in terms of complete uterine evacuation of the products of conception.

RESULTS

A total of 220 cases (110 in each group) fulfilling the inclusion/exclusion criteria were enrolled and compare with efficacy of manual vacuum aspiration versus D&C patients with incomplete and missed miscarriage in terms of complete uterine evacuation of the products of conception. The age range of the patients was 18-30 years in Group-A and in Group-B between 31-45 years of age. The mean±SD was calculated as 27.37±5.99 years in Group-A and 28.45±6.50 years in Group-B (Table 1).

Parity distribution of the patients was carried out which demonstrates that 63(57.27%) in Group-A and 71(64.55%) in Group-B were between 1-3 paras while 47(42.73%) in Group-A and 39(34.45%) in Group-B were having >3 paras, Mean±SD was calculated as 2.62+1.03 in Group-A and 2.89+1.32 paras in Group-B (Table 2).

Comparison of efficacy of manual vacuum aspiration versus D&C was recorded in 104(94.55%) in Group-A and 64(83.64% in Group-B while 6(5.45%) in Group-A and 18(16.36%) in Group-B were not treated effectively (Table 3).

Stratification for efficacy with regards to age shows that out of 104 cases in Group-A, 70(67.31%) and out of 92 cases in Group-B 56(60.87%) were between 18-30 years of age while remaining 34(32.69%) in Group-A and 36(39.13%) in Group-B were between 31-45 yrs (Table 4).

Stratification for efficacy with regards to parity shows that out of 104 cases in Group-A, 60(57.27%) and out of 92 cases in Group-B 58(63.04%) were between 1-3 paras while remaining 44(42.73%) in Group-A and 34(36.96%) in Group-B were having >3 paras (Table 5).

Table 1: Age distribution of the patients (n=220)

| Age (in years) | Group-A | | Group-B | |
|----------------|-------------------|-------|-------------------|-------|
| | n | % | n | % |
| 18-30 | 73 | 66.36 | 67 | 60.91 |
| 31-45 | 37 | 33.64 | 43 | 39.09 |
| Mean±SD | 27.37±5.99 | | 28.45±6.50 | |

Table 2: Parity distribution of the patients

| Parity | Group-A | | Group-B | |
|----------------|------------------|-------|------------------|-------|
| | n | % | n | % |
| 1-3 | 63 | 57.27 | 71 | 64.55 |
| >3 | 47 | 42.73 | 39 | 35.45 |
| Mean±SD | 2.62±1.03 | | 2.89±1.32 | |

Table 3: Comparison of efficacy of manual vacuum aspiration versus D&C.

| Efficacy | Group-A | | Group-B | |
|----------|---------|-------|---------|-------|
| | n | % | n | % |
| Yes | 104 | 94.55 | 92 | 83.64 |
| No | 6 | 5.45 | 18 | 16.36 |

P value=0.009

Table 4: Stratification for efficacy with regards to age (n=196)

| Age (in years) | Group-A | | Group-B | |
|----------------|------------|------------|-----------|------------|
| | n | % | n | % |
| 18 – 30 | 70 | 67.31 | 56 | 60.87 |
| 31 – 45 | 34 | 32.69 | 36 | 39.13 |
| Total | 104 | 100 | 92 | 100 |

Table 5: Stratification for efficacy with regards to parity (n=196)

| Parity | Group-A | | Group-B | |
|--------|---------|-------|---------|-------|
| | n | % | n | % |
| 1-3 | 60 | 57.27 | 58 | 63.04 |
| >3 | 44 | 42.73 | 34 | 36.96 |

DISCUSSION

Abortion is the end of pregnancy by ejection of an embryo from the uterus preceding suitability¹¹. Different studies suggested that 20% of all pregnancies worldwide end in abortion¹²⁻¹³. It is evaluated that 30-50% of all patients go through at least one induced abortion during life time. Surgical abortions can be carried out by various methods like MVA or EVA and dilatation & curettage (D&C). All these methods are safe and effective¹⁴. Dilation and curettage (D&C) has been the traditional treatment throughout most of the 20th and 21st centuries¹⁵.

We planned this study on a larger sample size to compare the both techniques so that the discrepancy in the literature regarding frequency of efficacy may be clarified on results based study and the patients coming for uterine evacuation may be treated more effectively on results based study.

In our study, 73(66.36%) in Group-A and 67(60.91%) in Group-B were between 18-30 years while 37(33.64%) in Group-A and 43(39.09%) in Group-B were between 31-45 years of age, Mean±SD was calculated as 27.37±5.99 in Group-A and 28.45±6.50 in Group-B. Comparison of efficacy of manual vacuum aspiration versus D&C was recorded in 94.55% (n=104) in Group-A and 64(83.64%) in Group-B while 6(5.45%) in Group-A and 18(16.36%) in Group-B were not treated effectively, p value was calculated as 0.0009 which shows a significant difference between the two groups.

The findings of our study are comparable with a recent study demonstrate that 8% patients in MVA and 20% in D&C were not evacuated successfully, which shows a significant difference¹⁰ (they included only 50 patients in their study), another study compared, safety and efficacy of various methods of surgery for first trimester abortion and recorded in both. The D&C and vacuum aspiration are effective methods for first trimester termination of pregnancy.

Another study¹⁶ find out the results of manual vacuum aspiration in the patients management of incomplete abortion and recorded adequacy of the procedure was about 98% with very low post strategy complexity rate (2%) while they were of the view that MVA method is a safe and successful procedure of uterine evacuation in deficient abortion. It is speedy, less expensive, and efficient, less painful and short hospital stay. So this method should be considered by health framework in Bangladesh for enhancing treatment of inadequate abortion to diminish both maternal morbidity and mortality.

Some other studies recorded the efficacy of MVA in 96.7%. Various trials have reported 95-100% efficacy with MVA¹⁷. However, advantage of safety of analgesia over anesthesia cannot be over emphasized and this should be taken into consideration while conducting these comparative studies.

We did not include any post procedure complications being the limitation of the study, but the literature is evident that main complications seem to be uncommon with MVA technique as compared with D&C strategy. The major findings in some studies were not statistically significant differences, comparing MVA with EVA, in complete abortion rate. EVA is superior to MVA in operating time and physicians' evaluation¹⁸. We did not use EVA in our study In two preliminaries with 467 patients looking at D&C and EVA techniques and no statistically significant differences in blood loss, blood transfusion, febrile morbidity, revise evacuation, re-hospitalization and pain post-operatively or therapeutic antibiotic use between two groups.²⁰ In our study there was statistically significant differences in both groups regarding the blood loss.

We did not include the duration of surgery in our study being another limitation of the study. However, the hypothesis of the study that *"there is a difference in efficacy of Manual vacuum aspiration for uterine evacuation of the products of contraception than D&C"* is justified and our recommendations for using in future are in favour of MVA for uterine evacuation of the products of contraception.

CONCLUSION

We concluded that efficacy of manual vacuum aspiration is significantly higher than D&C in patients with incomplete and missed miscarriage in terms of complete uterine evacuation of the products of conception.

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