

# Medical Abortion Versus Manual Vacuum Aspiration in a Hilly District Hospital of Eastern Nepal: A Comparative Study

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## ABSTRACT

### Background

Nepal government has approved medical abortion and manual vacuum aspiration for early first trimester pregnancy. Both the procedures have been approved by World Health Organization for use in early first trimester.

### Objectives

The study aims to compare efficacy and safety of medical abortion with surgical abortion in a district hospital of rural eastern Nepal.

### Method

An observational study conducted in district hospital, dhankuta from July 2010 to January 2011. Clients for abortion services were counseled about methods of abortion and were allowed to make decision on their own and classified as medical abortion group (N=48) (receiving 200milligram Mifepristone followed by 800 microgram misoprostol sublingually or vaginally on day two)and manual vacuum aspiration group (N=36). The two groups were compared for rate of complete abortion and other complications and contraception use after procedure.

### Results

Rate of complete abortion was similar in both groups, 95.8% among medical abortion and 97.2% in manual vacuum aspiration. Moderate to severe expulsion bleeding was reported in 91.6% of cases after Medical Abortion but none required medical attention for hemorrhage. Condom was the most preferred contraceptive in medical abortion group and depo provera in manual vacuum aspiration group.

### Conclusion

Medical method of abortion using mifepristone and misoprostol is equally safe and effective as manual vacuum aspiration in rural setting district hospitals of Nepal.

## KEY WORD

*Contraception, manual vacuum aspiration, medical abortion*

## INTRODUCTION

Nepal government developed national strategy on use of medical abortion and launched pilot study on medical abortion in 2008 in six districts of the country.<sup>1</sup> Medical abortion has been reported to have a slightly lower failure rate compared to surgical abortion for early first trimester abortion (within seven weeks).<sup>2</sup> However, studies show both method to be equally well acceptable provided client are allowed to make decision.<sup>3</sup> WHO has declared medical methods of abortion to be safe and effective and has listed mifepristone and misoprostol in its model list of essential

medicines.<sup>4,5</sup> This study aims to compare the safety of medical abortion with previously established manual vacuum aspiration.

## METHODS

The study was a prospective non interventional observational study conducted in a hilly district hospital at Dhankuta over a period of six months from July 2010

to January 2011. All clients with pregnancy of up to 63 days from last menstrual period who came for termination of pregnancy were included in the study. The period of gestation of clients were confirmed by per vaginal examination and ultrasound. Clients wanting termination of pregnancy were counseled about medical method (using mifepristone and misoprostol) and manual vacuum aspiration. They were allowed to make their decision on their own and classified in two groups Medical Abortion (MA) (N=48) and Manual Vacuum Aspiration (MVA) (N=36). Clients were informed about their inclusion in the study and written consent was taken.

Comprehensive abortion care service was given by trained medical practitioner. Clients in MA group were given Nepal government approved regime (i.e. Mifepristone 200mg orally followed by Domiciliary Misoprostol 800mcg sublingually or Vaginally whichever is comfortable to the patient after 24 hrs of Mifepristone) and those in the MVA group were pre-medicated with ibuprofen and Diazepam; and paracervical block was used for anesthesia. Manual vacuum aspiration was performed with IPAS double valve syringe and no 5 to 8 plastic canula as required. Patients were called on 15<sup>th</sup> day of procedure for follow up and accessed for outcome and complications. A check ultrasound was done to assess completion of procedure.

Data was collected in a pre designed performa. Rate of complete abortion was noted in both groups. Other outcomes noted were post procedure bleeding and complications requiring referral. Contraceptives were offered to both groups and the usage was compared. Age, parity, education was compared in two groups. Clients were considered illiterate if they were not able to write or sign their name. Amount of hemorrhage was recorded as reported by clients. Changing of completely soaked pads up to three times per day was considered minimal hemorrhage, 4-6 times was considered moderate hemorrhage and more than six times was considered severe hemorrhage. Data were analyzed using SPSS version 16.0. Rate of completion and complications were compared using Chi square test. A p-value of less than 0.05 was considered to be statistically significant.

## RESULTS

Both groups were very similar with regards to age, parity, literacy, marital status. Most belonged to the ethnic code 2 (Mongolian) in both groups (Table-1). However, clients with education above high school were higher in MA group [28/48(58.4%)] as compared to MVA group [14/36(38.9%)] but did not reach level of statistical significance ( $p=0.12$ ).

The primary outcome i.e. complete expulsion of product of conception was higher in MVA group [35/36(97.2%)] as compared to MA group [46/48(95.8%)] but the difference is not significant statistically ( $p=0.64$ ). One incomplete abortion seen in MVA group occurred in a 30 years G4P2

**Table 1. Characteristics of the client.**

	MA (N= 48)	MVA (N=36)
	Mean±SD (Range)	Mean±SD (Range)
Age Mean	27.06±6.29 (17-42)	27.53±7.36 (17-44)
POG (weeks)	6.71±1.1 (4-9)	7.06±1.05 (5-9)
POG (days)	45.1 ±6.8 (30-63)	50.02 ±7.2(37-63)
Parity :		
Primi	11(22.9%)	8(22.2%)
Multi	37 (77.1%)	28(77.8%)
Marital status:		
Married	46(95.8%)	35(97.2%)
Unmarried	2(4.2%)	1(2.8%)
Ethnic Code*		
1( Dalits)	2(4.2%)	2(5.6%)
2(Rai, Magar, tamang, limbu)	22(45.8%)	22(61.1%)
5(Newar, gurun, thakali)	6(12.5%)	4(11.1%)
6(Bramhin, chettri, thakuri , sanyasi)	18(37.5%)	8(22.2%)
Literacy		
Literate	37(77.1%)	24(66.7%)
Illiterate	11(22.9%)	12(33.3%)

\*1- Damai, Kami, Sarki, Gayine; 2- Rai, Magar, Tamang, Limbu, 5- Newar, Gurung, Thakali, 6- Bramhin, Chettri, Thakuri, Sanyasi; 3 and 4 are predominantly residents of Terai region.

**Table 2. Complications in relation to period of gestation.**

Complication	Medical Abortion	Manual Aspiration
POG(wks)		
<6 weeks	Pain	Pain
	Expulsion Bleeding	
	Nausea and vomiting	
7-9 weeks	Incomplete (1)	Incomplete (1)
	Failure (1)	Pain
	Pain	
10-12 weeks	Only Clients with POG up to 9wks (63 days) included in study.	

at eight weeks gestation with one previous abortion. The client was managed with MVA. In MA group, total of two patients faced complications. First one incomplete abortion occurred in a 25 years G3P2 lady at eight weeks gestation (55 days), and one failure occurred in a 37 years G5P4 lady at eight weeks gestation (56 days), both of them were managed with MVA. (Table-3)

Pain during the procedure was the main complain in the MVA group [28(77.7%)] (Table-3). Expulsion hemorrhage was the main complain with moderate to severe bleeding in 44 (91.6%) followed by pain abdomen and nausea and vomiting in the MA group. No complication required referral to a higher center arose during the study period.

**Table 3. Outcome.**

	MA (N=48)	MVA (N=36)	P-Value
<b>Primary Outcome</b>			
Complete	46(95.8%)	35(97.2%)	0.64
Failure	1(2.1%)	---	
Incomplete	1(2.1%)	1(2.8%)	
<b>Other outcomes</b>			
Expulsion Hemorrhage:	44(91.6%)	---	
Pain:	36 (75.0%)	28(77.7%)	
Nausea/Vomiting:	33 (68.7%)	---	

In MVA group, Depo provera [21(58.3%)] was the most popular contraceptive followed by condom, and oral contraceptive pills (Table-4). Condom [38(79.2%)] was the most popular contraceptive in the MA group, followed by oral contraceptive pills and Depo provera (Table-4).

**Table 4. Contraceptive acceptance after MA and MVA.**

Contraception	MA (N=48)	MVA (N=36)
Depo Provera	5 (10.4%)	21 (58.3%)
Oral Contraceptive Pills	5 (10.4%)	6 (16.7%)
Condoms	38 (79.2%)	9 (25%)

## DISCUSSION

During our study period medical abortion [48(57.1%)] was preferred by more women than manual vacuum aspiration [36(42.8%)], the finding is in concordance with other studies comparing MVA and MA.<sup>5,7</sup> The reason for preference to medical abortion may be because of its non invasive nature and also hesitancy seen in women for internal examination especially in our context. The client's age, sex and parity in both group are comparable, this has helped to reduce confounding factors and bias in the research even without randomization. Clients with education above high school were found to choose medical abortion more frequently, which is similar to finding of Das et. al. done in India. The study showed medical abortion was preferred by urban, educated population in upper socio-economic strata. The reason for this may be better awareness and confidence of using misoprostol among the educated population. Intervention in form of health education and awareness promotion about medical methods of abortion targeting rural population, belonging to low socioeconomic strata and uneducated group may help improve awareness among these people.

The outcome of treatment i.e. rate of complete abortion was comparable in both groups, a finding similar to previously

established findings.<sup>3,7</sup> The rate of complete abortion with MA was 95% which is comparable with previous results from studies in Nepal and other countries.<sup>1,2,4,7,8</sup> Similarly rate of complete abortion with MVA was 97.2%, a result similar to previous studies and reviews.<sup>3,4,9</sup>

In the MA group, moderate to severe expulsion hemorrhage was noted by 91% of patient; however there were no emergency visit to hospital for excessive bleeding and no patient reported having symptoms suggestive of hypovolemic shock. Expulsion pain was reported by 75%; nausea and vomiting was reported by 68%. There were no cases requesting conversion to surgical abortion or requiring conversion to surgical abortion for pain or hemorrhage before follow up time. The findings are similar to findings of previous studies that the frequency of severe hemorrhage requiring haemostatic curettage is low.<sup>3</sup> However, the reported rate of complications that is bleeding and pain was higher in this study as compared other studies, this variation might be a result of subjective variation and exaggeration by patient.<sup>3,10</sup>

Contraception was offered to all clients following the procedure and every client accepted at least one modern method of contraception. Condom was the most popular method in MA group, it was also seen that condom use was predominantly in younger age group, a finding similar to a study conducted by Karki et. al.<sup>11</sup> In MVA group the finding was reverse with Depo Provera being the most popular method of use. The pattern of acceptance of contraception needs further study.

## CONCLUSION

Medical abortion regime is safe to be used as an alternative to manual vacuum aspiration in rural setup district hospitals. Targeted health education package for illiterate people, with low socioeconomic background and with low level education regarding medical abortion is required.

There were few limitations to this study. The number of clients involved in the study was less. The two study group was not matched for confounding variables. Assigning of clients to either group was not randomized or blinded, thus leaving a possibility of bias during client counseling. The complications were reported as perceived by clients and were susceptible to subjective variation. The duration of bleeding and time of expulsion of Product of Conception (POC) from medication was not analyzed in the study.

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