

Comparison of Medical Abortion with Manual Vacuum Aspiration in Termination of Pregnancy up to Nine Weeks

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ABSTRACT

Background: Nepal government has legalized abortion and approved both medical abortion and manual vacuum aspiration for first trimester pregnancy. However, there is inadequate evidence in our setup to comment on the acceptability and complications of medical abortion and manual vacuum aspiration for termination of pregnancy up to nine weeks of gestation. The objective of this study is to compare the reasons for termination of pregnancy, effectiveness and complications between medical abortion and manual vacuum aspiration in termination of pregnancy up to nine weeks.

Methods: A comparative study was conducted among women requesting termination of pregnancy up to nine weeks of gestation in Comprehensive Abortion Care unit of Paropakar Maternity and Women's Hospital. Women were kept in medical abortion and manual vacuum aspiration groups after they chose the method. They were advised for follow up in two weeks. Reasons for termination, effectiveness and complications of medical abortion and manual vacuum aspiration were compared using Chi square test.

Results: In a total of 160 women, the most common reason for termination of pregnancy was completion of the family. In manual vacuum aspiration group 43 (58.9%) women had minimal per vaginal bleeding while 30 (40.54%) women in medical abortion group had per vaginal bleeding for 6-10 days ($p < 0.001$). Rate of complete abortion in medical abortion group was 85.14% ($n=63$) and in manual vacuum aspiration group was 93.15% ($n=68$).

Conclusions: The complications following medical abortion were higher than manual vacuum aspiration in termination of pregnancy up to nine weeks. Rate of completeness of abortion following manual vacuum aspiration is superior over medical abortion.

Keywords: Manual vacuum aspiration; Medical abortion; Termination of pregnancy

INTRODUCTION

Abortion is a health issue, in which there is expulsion or extraction of product of conception and it involves controversy.¹ Every year around 22 million women undergo unsafe abortion and that contribute to 13% of maternal death globally.² Nepal has a significant proportion of maternal deaths and injuries secondary to unsafe abortion.³ Nepal has legalized abortion to reduce and prevent abortion related morbidity among women and girls.³ Between 2004 and 2007, 176 Comprehensive Abortion Care (CAC) service sites were established in Nepal.⁴

Nepal government has approved both medical abortion (MA) (up to nine weeks) and manual vacuum aspiration

(MVA) (up to 12 weeks) for termination of first trimester pregnancy.⁵ However, MA is yet to gain popularity in the country and surgical abortion using MVA was preferred method of choice among Nepalese women.⁶

The aim of study was to compare the reasons for termination of pregnancy, effectiveness and complications between MA and MVA in termination of pregnancy up to nine weeks.

METHODS

This was analytic observational study conducted in CAC unit of Paropakar Maternity and Women's Hospital (PMWH), Thapathali, Kathmandu, Nepal. Data was collected over a period of three months from 16th April

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All women attending CAC unit of PMWH on all working days for termination of pregnancy up to nine weeks of gestation were enrolled for the study. A detailed history was taken and clinical examination was done to correlate the uterine size with the duration of pregnancy. All women had undergone transabdominal ultrasonography to confirm the duration of pregnancy. Women with intrauterine singleton pregnancy up to nine weeks of gestation, irrespective of parity; without any medical or surgical condition were enrolled in study. Women were explained about medical and surgical method for termination by the members of the CAC unit and follow up in two weeks. Depending on the method they chose, they were grouped in MA and MVA groups after taking informed consent. They were advised to follow up immediately, if there was per vaginal bleeding requiring more than two commercial pads in two hours, intense pain that persists for longer than 4-6 hours after abortion and fever for more than 100 degree Fahrenheit after 24 hours of taking medical abortion.

For MA women were given a combination of Tablet (Tab) mifepristone 200 mg and Tab misoprostol 200 mcg (four tablets). They took Tab mifepristone 200 mg orally in CAC unit. They were advised to keep Tab misoprostol 200 mcg, four Tabs (800 mcg) per vaginally or sublingually after 24 hours of taking tab mifepristone. Women were advised to take Tab Ibuprofen 400 mg orally that could be repeated in 6-8 hours if they experienced pain.

For MVA, women were given Tab Doxycycline 100 mg orally single dose, Tab Ibuprofen 400 mg and Tab paracetamol 500mg orally single dose 30 minutes before the procedure. Per vaginal examination was repeated to reconfirm uterine size and position. MVA was done using appropriate size of Karman cannula; in para cervical block at 12 o'clock, 5 o'clock and 7 o'clock position by 2% xylocaine. Women's vitals were taken after completion of the procedure and she was kept under observation for 30 min before sending home.

All the women were advised for follow up in two weeks; per vaginal examination and repeat ultrasonography was done in women with persistent per vaginal bleeding, pregnancy symptoms, to check for any complications like incomplete abortion, continuation of pregnancy. In follow up examination normal uterine size or no signs of

incomplete abortion and continuation of pregnancy was considered complete abortion. The data was entered in SPSS software version 21 and Chi Square test was applied for categorical data and the p-value of <0.05 was considered significant.

RESULTS

Among 686 women coming for termination of pregnancy in CAC unit of PMWH in three months duration; 160 women meeting the inclusion criteria were enrolled in the study with 80 women in each group. Out of them six women in MA group and seven women in MVA group were lost in follow up. Therefore total sample (n) was 147 women, 74 in MA group and 73 in MVA group.

Table 1. Reasons for termination of pregnancy up to nine weeks of gestation in medical abortion (MA) and manual vacuum aspiration (MVA).

Reasons	MA (74)	MVA (73)
	n (%)	n (%)
family completed	41 (55.41%)	51 (69.86%)
small baby at home	15 (20.27%)	11 (15.07%)
unsettled	10 (13.51%)	9 (12.33%)
contraceptive failure	1(1.35%)	0
unmarried	5 (6.76%)	1 (1.37%)
others	2 (2.70%)	1 (1.37%)

There were 41(55.41%) women in MA group and 51(69.86%) women in MVA group who have terminated their pregnancy because they have completed their family. There was only one case (1.35%) of contraceptive failure (injection Depo-Provera) in our study (Table 1).

Table 2. Duration of per vaginal bleeding following MA and MVA for termination of pregnancy up to nine weeks of gestation.

Duration of PV bleeding	MA (74)	MVA (73)	P value
	n (%)	n (%)	
Bleeding less than a day	7(9.45%)	43(58.9%)	<0.001
1-5 days	16(21.62%)	22(30.14%)	
6-10 days	30(40.54%)	7(9.58%)	
11-14 days	21(28.38%)	1(1.37%)	

There were 43(58.9%) women in MVA group with per vaginal bleeding of less than a day. In MA group 30 (40.54%) women had vaginal bleeding for 6-10 days (Table 2).

Table 3. Complications following MA and MVA for termination of pregnancy up to nine weeks of gestation.

Complications	MA (74)	MVA (73)
	n(%)	n(%)
Foul smelling PV discharge	2(2.7%)	2(2.73%)
Pain abdomen not improving with analgesic	8(10.81%)	2(2.73%)
Fever after 24 hours	4(5.4%)	0
Uterine perforation	0	1(1.36%)
Hospital admission	3(4.05%)	1(1.36%)

There was one uterine perforation during MVA and she was managed with hospital admission and conservative management. There were three (4.05%) hospital admissions from emergency department for incomplete abortion in MA group (Table 3). They had MVA after admission (as per hospital protocol) and were discharged the next day.

Table 4. Effectiveness of MA and MVA for termination of pregnancy up to nine weeks of gestation.

	MA (74)	MVA (73)	p value
	n (%)	n (%)	
Complete abortion	63(85.14%)	68(93.15%)	0.119
Incomplete abortion	10(13.51%)	3(4.10%)	0.045
Continuation of pregnancy	1(1.35%)	2(2.73%)	

There were 63 (85.14%) complete abortion in MA group while in MVA group 68 (93.15%) women had complete abortion (Table 4). There were more women (13.51%) in MA group with incomplete abortion than in MVA group (4.10%). There were three continuation of pregnancy, one in MA group and two in MVA group and all of them have undergone MVA for further management.

DISCUSSION

In distribution according to reason for termination of pregnancy, most of the women (55.41%) in MA group and 69.86% in MVA group had completed their family before undergoing termination of pregnancy. Fifteen women in MA group (20.27%) and 11 women in MVA group (15.07%) terminated their pregnancy for birth spacing. The results are consistent with the study done by Pande et al⁷ in Kathmandu Medical College Teaching Hospital, in which 66.25% of women undergoing abortion had unwanted pregnancy and 26.87% of women had small baby at home.

In study done by Tamang et al,⁸ son factor or the presence

of at least one son as a determinant of completed family size was evident from the fact that 80% of women terminating their unwanted pregnancy who already had a son. Only one-fourth of the induced abortion cases desired additional children.

Most of the women (58.9%) who had undergone MVA had minimal PV bleeding for less than a day. While in MA group most of the women (40.54%) had PV bleeding lasting for 6-10 days. Amount and duration of bleeding per vagina were found to be more in MA group because spontaneous expulsion of the products of conceptus takes a long time and heavy bleeding persists during this period. Average duration of PV bleeding in MA group was 8.924±3.568 days and in MVA group was 6.837±2.928 days in study by Garhwal.⁹ In the study done by Rorbye et al¹⁰ 36% women in MA group and only 1% in MVA group had severe PV bleeding. In study by Ashok et al,¹¹ per vaginal bleeding in medical group was for 14.21 days and in surgical group it was for 11.21 days.

In the study done by Nayak et al,¹² only 2.40% women had complained of excessive PV bleeding. Similarly in study by Tamang et al⁸ 1.4% women had excessive PV bleeding, while in study by Ireland et al¹³ 17.6% in medical abortion and 4.5% in surgical abortion (MVA) had persistent PV bleeding.

In our study more women (13.51%) in MA group who had incomplete abortion than in MVA group (4.10%). This was comparable with the study done by Garhwal et al⁹ in which 4.4% in MA group and 2.1% in MVA group had incomplete abortion. Similarly in study by Banerjee et al¹⁴ the rate of incomplete abortion was 1.8%. Similarly in study by Panta et al⁴ 2.1% in MA and 2.8% in MVA group had incomplete abortion.

In our study 1.36% (1) of women had uterine perforation which is comparable with study done by Nayak et al¹² in which 1.2% of women had uterine perforation. This was comparable with study done by Tasnim et al¹⁵ in that 2.4% patients had uterine perforation.

There was 85.14% complete abortion in MA group while in MVA group it was 93.15% in our study. This is consistent with the study done by Mary R et al¹⁶ which showed 84% success in medical group and 97% in surgical group. The study by Panta et al⁴ have obtained the rate of complete abortion with MA was 95% and with MVA was 97.2%. The effectiveness of medical method of abortion was 97.6% and 100% in MVA group in study by Nayak et al¹² which is slightly higher than the results obtained from our study.

CONCLUSION

The study showed, the most common reason for termination of pregnancy was completion of their family in both MA and MVA groups. The complications following medical abortion were higher than manual vacuum aspiration in termination of pregnancy up to nine weeks. Rate of complete abortion following manual vacuum aspiration was superior over medical abortion.

REFERENCES

1. Akkenapally PL, Kamineni V. Medical versus surgical termination of early pregnancy: satisfaction with care, emotional impact and acceptability of the procedure. *Int J Reprod Contracept Obstet Gynecol.* 2016;5(9):3158-66. [\[DOI\]](#)
2. Bhandari TG, Dangal G. Abortion Practices in Nepal: What does Evidence Show?. *NJOG.* 2015;19(1):3-11. [\[DOI\]](#)
3. Samandari G, Wolf M, Basnett I, Hyman A, Andersen K. Implementation of legal abortion in Nepal: a model for rapid scale-up of high-quality care. *Reproductive Health.* 2012;9:7 [\[DOI\]](#)
4. Panta OB, Bhattarai D, Parajuli N. Medical Abortion Versus Manual Vacuum Aspiration in a Hilly District Hospital of Eastern Nepal: A Comparative study. *Kathmandu Univ Med J.* 2013;43(3):206-9. [\[DOI\]](#)
5. Andersen K, Ganatra B, Stucke S, Basnet I, Karki YB, Thapa K. A prospective study of complications from comprehensive abortion care services in Nepal. *BMC Public Health.* 2012;1-9. [\[LINK\]](#)
6. CREHPA: Expanding Safe Abortion Access: Concerted Efforts Needed to Overcome Existing Barriers. *Reproductive Health Research Policy Brief.* 2011. [\[FullText\]](#)
7. Pande S, Sharma M, Saha RR, Thapa M, Shrestha N, Regmi D. Comprehensive abortion care service at Kathmandu Medical College – An experience. *Kathmandu Univ Med J.* 2005;3(11):225-9. [\[FullText\]](#)
8. Tamang A. Induced Abortions and Subsequent Reproductive Behaviour Among Women in Urban Areas of Nepal. *Social Change.* 1996;26(3):271-85. [\[FullText\]](#)
9. Garhwal P, Rajoria L, Sharma M. A comparison of manual vacuum aspiration with medical method of abortion in termination of pregnancy up to 9 weeks of gestational age. *Int J Reprod Contracept Obstet Gynecol.* 2017;6(9):3813-7. [\[DOI\]](#)
10. Rorbye C, Norgaard M, Nilas L. Medical versus surgical abortion: comparing satisfaction and potential confounders in a partly randomized study. *Hum Reprod.* 2005;20(3):834-8. [\[DOI\]](#)
11. Ashok PW, Kidd A, Flett G MM, Fitzmaurice A, Graham W, Templeton A. A randomized comparison of medical abortion and surgical vacuum aspiration at 10–13 weeks gestation. *Human Reprod.* 2002;17(1):92-8. [\[DOI\]](#)
12. Nayak RG, Yamini PS, Sanjaykumar P, Kshirsagar N. A comparison of manual vacuum aspiration with medical method of abortion in termination of pregnancy up to 9 weeks of gestational age. *International Journal of Recent Trends in Science and Technology.* 2015;13(3):490-4. [\[FullText\]](#)
13. Ireland LD, Gatter M, Chen AY. Medical Compared With Surgical Abortion for Effective Pregnancy Termination in the First Trimester. *Obstet Gynecol.* 2015;126:22–8. [\[FullText\]](#)
14. Banerjee A, Abhijit A, Batya E, Kalyanwala S. Mifepristone and misoprostol abortion in free standing. *Reproductive health clinic in India. J Obstet Gynecol India.* 2009;59(5):432-9. [\[FullText\]](#)
15. Tasnim N, Mahmud G, Fatima S, Sultana M. Manual vacuum aspiration: a safe and cost effective substitute of Electric vacuum aspiration for the surgical management of early pregnancy loss. *Maternal and child Health Center, Pakistan Institute of Medical Sciences.* 2011;61(2):149-53. [\[FullText\]](#)
16. Mary R, Lorch S, Chung K, Frederick M, Zhang J, Barnhart K. A cost-effectiveness analysis of surgical versus medical management of early pregnancy loss. *Fertil Steril.* 2012;97(2):355-60. [\[ScienceDirect\]](#) [\[DOI\]](#)