Research Article

A comparison of manual vacuum aspiration with medical method of abortion in termination of pregnancy up to 9 weeks of gestational age

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Abstract

Objective: To compare efficacy and complications of medical method versus manual vacuum aspiration in early pregnancy termination and to determine whether medical method of termination of pregnancy represent a reasonable alternative to surgical method (MVA) in terms of complete evacuation of products of conception and their side effects. **Method:** A prospective randomized analysis was carried out on 166 pregnancies in women who were willing for termination of pregnancy up to 9 weeks of gestational age, in group A women who were terminated pregnancy by medical method of abortion, and in group B women who were terminated pregnancy by manual vacuum aspiration, from may2012 to may2014 at Krishna institute of medical sciences, karad. **Result:** In both the group maximum number of cases belonged to age group 21-25, in group A 39.75% of patients and In Group B 45.78%. Maximum number of cases were multiparous, 85.56 % in Group A and 97.56 % in Group B. Number of cases in both the groups belonged to 6—7 week of gestation Group A - 40.96% and in Group B - 45.75%. Mean time taken for group A was 58 hrs and for that of group B was 10 ± 4.50 mins. Participants did not experience any serious complications All women 100% reported at least some bleeding, out of these 2.40% patients had heavy bleeding but blood transfusion was not required,6.02% had vomiting, and 2.40% patients had fever**.** One case of uterine perforation was noted in group B. None of the patient had incomplete abortion in group B, In Group A success rate was 97.6% while in Group B, success rate was 100%. In group A, 2.40% of patients had incomplete abortion and these patients underwent suction curettage while in group B, no case of incomplete abortion was seen. **Conclusion:** Medical method of abortion for first trimester termination of pregnancy up to 9 weeks of gestation can be better alternative method to surgical evacuation. Medical method of abortion proves to be more effective, safest and economical method that avoids complication associated with surgical evacuation like uterine perforation, cervical laceration, late complication like Asherman's syndrome, anaesthetic complication and expenditure on operation theater and anaesthesia. Hence medical method of abortion can be safely adopted as a method of termination with least complication and less interventions. The only disadvantage with medical method of abortion is lack of predictability and variable success rate as against surgical evacuation with 100% success rate and short duration of procedure.

Keywords: Abortion, Manual vacuum aspiration, misoprostol, mifepristone.

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INTRODUCTION

The World Health Organization (WHO) estimates that 46 million pregnancies end in abortion each year, and nearly 20 million of those are thought to be unsafe. An estimated 67,000 women die each year from unsafe abortions, and thousands and more womens suffer serious injuries and disabilities. About 13% of maternal deaths are due to unsafe abortions. Unsafe abortions are a serious public health problem in India. The number of abortions is steadily rising each year. The number of deaths due to unsafe abortions has also been steadily increasing.[1]Legal abortion is one of the safest operations in contemporary

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practice and its safety has improved through years. Today, the overall risk of death from legal abortion is less than 1 per 1,00,000. But even after 42 years of legalization of voluntary termination of pregnancy (MTP) in India, its availability, particularly in rural areas is very limited. As a result 15,000 to 20,000 abortion related deaths are reported in India every year out of which 13 - 15 % are due to unsafe abortion which is serious concern [2]. This has led to the realization of the need to have a safe, inexpensive, easily applicable and widely acceptable method for abortion. The feasibility of medical method of abortion is increased by providing a modified medical abortion regimen for termination of pregnancy less than 63 days in four free standing reproductive health clinics, run by a single nongovernmental reproductive health service provider, Parivar Seva Sanstha.PSS has more than 41 standing reproductive health clinics spread across 21 states of India and performs an average of 87,000 abortion each year, accounting for roughly 15% of all the legal abortions reported to the Government of India[3].

METHODS

The randomized trial was conducted during the period of May 2012 to May 2014. The study was conducted in K.I.M.S. Karad. Method of collection of data: A total number of 166 cases who were diagnosed with pregnancy, and willing for termination of pregnancy up to 9 week of gestational age were selected randomly after written informed consent. Group A (MMA) were 83 cases and Group B (MVA) were 83 cases. Selection of patients was done alternatively, one patient was underwent MVA and mifepristone and misoprostol induced in another pregnant women according to admission.

Inclusion Criteria

Pregnant women with history of 9 weeks of gestation, irrespective of parity who were willing for termination of pregnancy.

Exclusion Criteria

1. Anemia Hb <8gm%.
2. Gestation > 9weeks.
3. Ectopic pregnancy
4. Molar pregnancy
5. Uterine anomalies
6. Pelvic infection
7. bleeding disorders.
8. maternal histroy of asthma or cardiac disease.
9. Known maternal allergy to prostaglandins or previous adverse reaction.
    1. In all selected cases menstrual, contraceptive, obstetric, medical and surgical history was taken. Clinical examination including general, physical and systemic examination was done.
    2. Bimanual Pelvic examination was done to know the position, size and mobility of uterus, the presence of infection.
    3. The hematological investigation included like CBC, blood grouping and Rh typing, Blood sugar level, urine routine microscopy was done. Ultrasonography was done.
    4. Written informed consent regarding procedure, side effect was taken.

MEDICAL METHOD

After confirming gestational age by ultrasound, and after written informed consent, Following regimen was followed. All norms as per the MTP Act 1972 by the Government of India were followed. on first day of medical abortion, mifepristone 200mg was given orally. The patient was asked to keep Tab. Misoprost 600ug per vaginally after 48 hrs at home, Schedule was completed even if the woman aborted with mifepristone only. Women were asked to note onset of bleeding, timing of passage of product of conception, duration of bleeding and side effects. Inj. Anti D 300ug given within 72hrs of abortion, in Rh negative blood group women. Women were called for follow-up after 14 days and clinical evaluation was done. Ultrasound was done if patient presented with excessive bleeding. Success was defined as complete expulsion of products of conception with no need for surgical intervention. The induction abortion interval was defined as," The interval from the administration of mifepristone to the passage of products of conception".

Failure was to be considered if

- Surgical curettage performed for incomplete abortion.
- Cardiac activity persisting 2 weeks following standard protocol.

RESULT

Table 1: Age wise distribution

Age group (years)	Group A (MMA)	Group B (MVA)
< 20	18 (21.68%)	10 (12.07%)
21-25	33 (39.75%)	38 (45.78%)
26-30	22 (26.50%)	20 (24.09%)
>30	10 (12.07%)	15 (18.07%)
Total	**83 (100%)**	**83(100%)**

In Group A 39.75% of patient belongs to age group 21-25 and In Group B 54.78% of patient belong to age group 21-25. P value was 0.274 which was not significantly associated.

Table 2: Parity Wise Distribution

	Group A	Group B
Primigravida	12 (14.45%)	2 (2.44%)
Multigravida	71 (85.56%)	81(97.56%)
Total	**83 (100%)**	**83 (100%)**

As shown in table maximum number of cases were multiparous, in Group A was 85.56%. and in Group B was 97.56%. P value was 0.0052 which was significantly associated, indicating that medical method of abortion was preferred to surgical abortion by primigravida.

Table 3: Gestational age wise distribution

	Group A	Group B
5-6 week	28 (33.73%)	15 (18.07%)
6-7 week	34 (40.96%)	38 (45.75%)
7-8week	15 (18.07%)	20 (24.09%)
8-9 week	6(7.22%)	10 (12.04%)

Maximum number of cases in group A was 41% belong to 6—7 week of gestation and in Group B was 45.75%. P value was 0.1183 which was not significantly associated.

Table 4: Previous lscs

Co-existing risk factor	Group A	Group B
High risk factor (Previous one LSCS)	14 (16.86%)	22 (26.50%)
Low risk factor	69 (83.14%)	61(73.50%)

In present study, 16.86% of patient in group A were of previous LSCS, and in group B 26.50% were with previous LSCS.P value was 0.187 was not significantly associated.

Table 5: Time taken for abortion

	Group A	Group B
Range	12-80 hours	10-20 min

Mean time taken for group A was 58 hrs and for that of group B was 12 mins.

Table 6: Side effect of misoprost

Side effect of misoprost	Total no of cases
Excessive bleeding	2 (2.40%)
Vomiting	4 (6.02%)
Fever	2 (2.40%)

In present study among group A, participants did not experience any serious complications. All women 100% reported at least some bleeding, out of these 2.40% patients had heavy bleeding but blood transfusion was not required, 6.02% had vomiting, and 2.40% patients had fever.

Table 7: Operative complication

Complication	Group B
Incomplete abortion	0
Hemorrahage	**0**
Uterine perforation	1 (1.20%)
Cervical injury	0

One case of uterine perforation was noted in group B. Laparotomy was performed, uterine perforation was sutured with catgut, patient was hemodynamically stable post operatively. None of the patient had incomplete abortion in group B.

Table 8: Efficacy

	Group A (MMA)	Group B (MVA)
Success rate (complete abortion)	81 (97.60%)	100%
Medical Failure (incomplete abortion at the end of study)	2 (2.40%)	-

In Present study success rate was 97.6% in Group A and 100% was in Group B with 2 cases of incomplete abortion in Group A and in Group B all patient had complete abortion.

DISCUSSION

The mean age in both group, in the present study (table 1), was 26±2.42 year which is comparable to a study by Banerjee[3] *et al* and Shetty4 *et al* where mean age group of patient was 27±4.2 and 29.8±4.4 respectively. All patients in both groups were married. In the present study (table 2), 85.54% of patient were multigravida which was comparable to a study done by Banerjee [3]*et al* and Shetty[4] *et al* in which 86% and 84% of patients were multigravida respectively. Mean period of gestation in both the groups in present study(table 3), was 6-7 week, 41% of patients belong to this gestational age which was comparable to a study by Mundle[6] *et al* in which 40% patient belonged to 6-7 weeks and study by Shannon[5] *et al* in this 36% of patient belong to 7-8week. In present study(table 4),16.86% of patient in Group A, were with previous LSCS which was comparable with study done by Shetty[4] *et al* and Deshpande[7] *et al* in which 20% and 10% patient with previous LSCS terminated by medical method respectively. While in group B 26.50% patients with previous LSCS which was comparable with study done by Nasira[8] *et al* in this study 11.32% patients with previous LSCS. The mean induction –abortion interval in group A in present study (table 5) was 58hrs which was comparable to the study done by J Guest et[10] al where the mean induction –abortion interval was 61 hrs with study done by Irving et[9] al where induction –abortion interval 72 hours. Mean time taken for MVA in present study was 10±4.50 min. which was comparable with study done by Vinita[11] *et al* was 18.14±1.72 min and study done by Nasira[8] *et al* was 10.71±2.77. In the present study (table 6), 2.40% of patient in the medical group had fever, 6% patient had vomitting and 2.40% had heavy bleeding. The side effects which occurs were comparable to various studies by Von Hertzen[12] *et al* and Deshapande[7] *et al* the frequency of bleeding, vomitting, fever was lessen in the present study. In the present study(table 7), 1% Of patient was seen uterine perforation, which was comparable with study done by Nasira *et al* in that 2.4% patients seen uterine perforation. Heamorrahage was not seen in present study. In present study none of the patient had incomplete abortion was noted in Group B, which was comparable with study done by Kamal[15] Helen *et al*, Vinita[11] *et al*, Chandra[14] *et al* in which rate of incomplete abortion was 2%,1%, 6% respectively. The incidence of cervical injury was nil, in present study. In present study, we were compared the efficacy and safety of medical method of abortion with manual vacuum aspiration. Efficacy of the procedure defined as complete uterine evacuation without the need for the further medical or surgical treatment The effectiveness of medical method of abortion in present study (table 8) was 97.6%, with2.40% patient of incomplete abortion underwent curettage. None of the patient had excessive Bleeding during the process of abortion. The effectiveness of present study comparable with study done by Banerjee[3] *et al* was 92.5%, Vinita[11]*et al* was 96.67%, Shannon[5] *et al* 94.2%, Von Hertzen[12] was 94.2%. The success rate in manual vacuum aspiration was 100% in present study which was comparable with study done by DS Milingos[16] was 94.2% and, Goswami[2] *et al* was 98%,Vinita et a was 97.6% success rate. For manual vacuum aspiration patient was admitted in ward for 1-2 days, required anaesthestics drugs, preoperative antibiotics so that cost of MVA was raised as compared to cost required for termination by medical method, as hospital admission was not required for medical abortion. A widely adopted practice uses a single oral dose of mifepristone dispensed under direct supervision of hospital staff followed by oral or vaginal misoprostol 48 hours later. This approach is based on the evidence that pre-treatment with mifepristone causes luteolysis, resulting in shedding of deciduas in abortion and resulting in increased amplitude and frequency of uterine contractions. Studies have shown that there is a high satisfaction rate among women who undergo a nonoperative procedure. Self-administration of misoprostol at home has been shown to be safe and effective at a gestational periods up to 63 days, with patient satisfaction rates in excess of 90%. Furthermore, investigators have shown that there is no loss of efficacy in inducing complete abortion when the time interval between the administration of mifepristone and misoprostol was reduced from 72 to 48 and 24 hours, and women clearly preferred the shortest waiting time possible between initiation and completion of the procedure[17] In the present study, above protocol was followed which increases satisfaction of women by reducing the time spent in hospital, less visit to hospital, this method is convenient to women, feels better at home and can continue her household responsibility.

CONCLUSION

Medical method of abortion for first trimester termination of pregnancy up to 9 weeks of gestation can be better alternative method to surgical evacuation. Medical method of abortion proves to be more effective, safest and economical method that avoids complication associated with surgical evacuation like uterine perforation, cervical laceration, late complication like Asherman's syndrome, anaesthetic complication and expenditure on operation theater and anaesthesia. Hence medical method of abortion can be safely adopted as a method of termination with least complication and less interventions. The only disadvantage with medical method of abortion is lack of predictability and variable success rate as against surgical evacuation with 100% success rate and short duration of procedure.

REFERENCES

1. WHO, Unsafe abortion: Global and regional estimates of the incidence of unsafe abortion and associated mortality in 2003. 5th Edition; p 14.
2. Goswami sebanti, Adhikari Sudhir, Saghamita mamtaz..Manual Vacuum Aspiration. Journal of obstet Gynecol of India. 2005: vol.55,no 6: pg544-545.
3. Banerjee Alok, Anand Abhijit, Elul Batya, Kalyanwala shveta. Mifepristone and misoprostol abortion in free standing Reproductive health clinics in India. J Obstet Gynecol India, .2009 Vol 59, no 5;page no 432-439.
4. Shetty Jyothi, MNV Pallavi. Medical abortion by Mifepristone with oral versus vaginal misoprostol. J obstet Gynecol India ;2006, vol 56, no6 ;page no 529-531.
5. C Shannon, E Wiebe, F Jacot, E Guilbert, S Dunn, WR Sheldon, B Winikoff; Regimens of misoprostol with mifepristone for early medical abortion: a randomised trial. BJOG 2006; 113: page no 621–628.
6. Mundle Shuchita,Kalyanwala shveta,Elul Batya, Ughade Suresh. : Simplifying medical abortion: home administration of misoprostol:.J obstat Gynecol India ;2008, vol 58;no 5,page no 410-416.
7. Deshpande Sonali,Yelikar Kanan, Deshmukh Ajit,Kanade Kapil. Comparative study of medical abortion by mifepristone with vaginal Misoprostol in women <49 days versus 50-63 days of amenorrhoea. J Obstet gynecol India ; 2010; vol 60, no5.page no 403-407.
8. Nasira Tasnim, Ghazala Mahmud,Saba Fatima,Mohsina sultana. 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. Feb 2011,vol. 61.no 2.pg 149-153.
9. Irving M,Spitz, Wayne Bardin, Lauri Benton. Early Pregnancy termination with mifepristone and misoprostol in the united stat.New England Journal of medicine. 1998, vol338;page no1241-1247.
10. J Guest, PFW Chien,MAR Thomson, ML Kosseim. Randomised controlled trial comparing the efficacy of same-day administration of mifepristone and misoprostol for termination of pregnancy with the standard 36 to 48 hour protocol. Br. Journal of Obstet Gynaecol 2007;vol 114;page no 207-215.
11. Das Vanita, Jain Swati, Gupta Hem Prabha. Evaluation of newer method of early pregnancy termination.J Obstet Gynecol India 2005;vol 55;454-456.
12. Von Hertzen H, Huong N, Piaggio G,Bayalag M,Cabezas E.Misoprostol dose and routes after mifepristone for early medical abortion.BJOG ;2010 :vol.117; pg 1186—1196.
13. Vineet Mohindra,Sushil Kumar VSM, ZK antony, Reema Kumar, Prajakta Shringarpure. Vaginal for first Misoprostol trimester pregnancy termination.J Obstet Gynecol 2005; vol 55, no 4; page no358- 360.
14. Chandra Madhu Das, Pushpa Srichand, Farkhunda Khursheed.Assessment of Eiffcacy and safety of Manual vacuum Aspiration. JLUMHS 2010;vol 09, no. 03; page no130-133.
15. Kamel Helen, Goswami Sebanti, Dutta Rekha,Manual vacuum aspiration and electrical vacuum aspiration-A comparative study for first trimester MTPThe Journal of Obstetrics and Gynecology of India January / February 2011 pg 53 – 56.
16. DS Milingos, M Mathur, NC Smith, PW Ashok. Manual vacuum aspiration: a safe alternative for the surgical management of early pregnancy loss. BJOG 2009; vol 116: page no1268–1271.
17. MI Rodriguez, A Seuc, N Kapp, H von Hertzen, NTM Huong, D Wojdyla. Acceptability of misoprostol-only medical termination of pregnancy compared with vacuum aspiration: an international,multicentre trial. BJOG 2012; 119:Pg 817–823.

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