

Medical and Surgical Abortion in the Second Trimester of Pregnancy

Karki A, Dangal G, Pradhan H, Shrestha R, Bhattachan K

Department of Obstetrics and Gynaecology, Kathmandu Model Hospital, Nepal

Received: May 05, 2014; Accepted: January 12, 2015

Aims: This study was done to know the demographic profile of women undergoing second trimester abortion at Kathmandu Model Hospital. The aim was to see the success rate of combination of mifepristone and misoprostol for the medical induction and misoprostol alone for the cervical dilation in case of surgical evacuation.

Methods: A retrospective study was done by looking at the profiles of 540 clients on whom second trimester abortion was performed during the period of October 2010 to October 2014. Twenty-nine women underwent dilatation and evacuation (D&E) with misoprostol cervical priming, and 510 underwent medical induction with mifepristone and misoprostol whereas one client absconded. Furthermore, the reasons for seeking second trimester abortion were also investigated.

Results: It can be seen that the age of women undergoing second trimester abortion at Kathmandu Model Hospital was greatest (33.33%) for the age group of 26-30 years. Most women were illiterate (31.67%) and a majority of the women were housewives (89.81%). A greater proportion of the women had never undergone abortion. Mental cause appeared to be the major reason for abortion constituting 82.04%. Success was 90.58%, expulsion with total five doses of misoprostol. The median induction to abortion time was 4-7 hours. The expulsion hours increased as the gestational age increased. The median number of dose of misoprostol required was two for medical induction and three for surgical abortion.

Conclusions: Mifepristone and misoprostol, as combination was a good method for the medical induction of second trimester pregnancy and misoprostol alone for the cervical preparation in surgical evacuation was promising.

Keywords: dilation and evacuation; medical induction; mifepristone; misoprostol; second trimester abortion.

INTRODUCTION

More than one third of the approximately 205 million pregnancies that occur each year worldwide are unintended and about 20% of them end in induced abortion.¹ A vast majority (90%) of these abortions take place during the first trimester of pregnancy. In spite of legalizing abortion and making safe abortion available at an affordable price at accessible distance to almost everyone, unsafe abortion, especially second trimester abortion is still a major health problem in Nepal. Through past studies, it has been established that second trimester abortions carry higher risks of complications than first trimester abortions.^{2,3} Even though second trimester abortion constitutes only 10-15 % of all induced abortions globally, they are the cause of a vast proportion of abortion related complications.⁴ In

an effort to reduce the complications brought forth by surgery, the administration of mifepristone and misoprostol is now considered to be a successful and effective method for second trimester abortion.⁴ The advantages of administering these drugs are two-fold: reduction in unwanted surgical evacuation and a cheaper cost than the former, which can be especially useful in a developing country like Nepal.⁴ In the past years, several studies have shown that misoprostol is an effective means in the termination of pregnancy in the first trimester.^{5,6} More recently, it has been shown that misoprostol has also proven successful in the termination of pregnancy in the second trimester.⁷⁻⁹

We intended to see the success rate of combination of mifepristone and misoprostol for the medical induction, median time required for expulsion and misoprostol alone for the cervical dilation in case of surgical evacuation. Furthermore, the reasons for seeking second trimester abortion were also investigated.

CORRESPONDENCE

Dr Aruna Karki
Department of Obstetrics and Gynaecology
Kathmandu Model Hospital, Nepal
Email: aruna.karki@gmail.com
Phone: + 977-9851042579

METHODS

This is a retrospective study done at Kathmandu Model Hospital (KMH). Five hundred and forty clients

(Medical Induction- 510 and D & E- 30) had second trimester abortion performed from October 2010 to October 2014. Institutional review committee approval was taken for this study. Proper counseling was done and an informed consent was taken from all women before performing the procedures.

For medical induction clients were given tablet mifepristone 200 mg under supervision at abortion service room and asked to return after 36 hours. On the day of the second visit, misoprostol 800 mcg as loading dose was administered by buccal or vaginal route as per client's choice followed by four hourly misoprostol 400 mcg until complete expulsion or total five doses. In case of buccal route, after thirty minutes the remainder of the medicine was asked to swallow with water. In high risk clients like previous caesarean section and grand multigravida the loading dose was 400 mcg and interval was six hourly or total of five doses. In case of repeat cycle a 24 hours gap was maintained. For surgical method, only misoprostol was used for cervical priming. Misoprostol was administered via buccal or vaginal route 400 mcg four hourly and in high risk as mentioned earlier six hourly until cervix becomes favourable a total of not more than five doses. The client's personal record form was filled properly. Structured questionnaires given to the clients were used for this study and this data were further analyzed.

RESULTS

The study showed that the age group of women undergoing second trimester abortion at KMH was greatest in the age group 26-30 years (n=180; 33.33%). Majority of them were housewives (n= 485; 89.81%) and illiterate (n= 171; 31.67%). Most of the women seeking abortion were from Kathmandu (n=290; 53.70%) and 202 clients (37.41%) were from outside Kathmandu, Lalitpur and Bhaktapur. Majority of the clients (n=438; 81.11%) never experienced abortion in the past. Mental ill-health constituted the major proportion (n=443; 82.04%) of reason for abortion followed by unmarried status (n=64; 11.85%) and fetal malformation (n=26; 4.81%). Minor reasons encountered were maternal co-morbid conditions, rape and incest (Table 1).

Table 1. Demography and clinical features of clients (n=540).

Characteristics	Number (%)
Age	
16-20 yrs	79 (14.63)
21-25 yrs	130 (24.07)
26-30 yrs	180 (33.33)
31-35 yrs	90 (16.66)
36-40 yrs	42 (7.77)
Above 40	19 (3.52)
Education	
Illiterate	171 (31.67)
Primary education	65 (12.04)
Secondary education	122 (22.59)
Higher secondary	101 (18.70)
Bachelor	61 (11.29)
Master	20 (3.70)
Profession	
Housewife	485 (89.81)
Student	52 (9.63)
Service holder	3 (0.56)
Area	
Kathmandu	290 (53.70)
Lalitpur	18 (3.33)
Bhaktapur	30 (5.55)
Outside Kathmandu, Lalitpur and Bhaktapur	202 (37.41)
Parity	
Nullipara	157 ((29.07)
Multipara	383 (70.93)
Past abortions	
No abortion	438 (81.11)
1 abortion	69 (12.77)
>1 abortion	33(6.11)
Causes of Abortion	
Unmarried	64 (11.85)
Fetal malformation	26 (4.81)
Mental causes	443 (82.04)
Maternal illness	3 (0.56)
Rape	3 (0.56)
Incest	1 (0.19)
Others	
History of previous caesarian section	28(5.19)

The gestational age of the clients were tabulated in Table 2, which depicts that most of the clients were in early gestational age of 12-14 weeks (n=283; 52.40%).

Table 3 illustrates the type of contraception used by the clients before and after abortion. Most of

them did not use contraceptives before abortion and refused after abortion too. They postponed choice of contraception for the time of follow up after consulting with husbands.

Table 2. Gestational age of clients (n=540).

Gestational age	Clients (%)
12-14 weeks	283 (52.41)
15-17 weeks	193 (35.74)
18-20 weeks	66 (12.22)
21-23 weeks	25 (4.63)
24 weeks and above	23 (4.26)

Table 3. Type of contraception used by clients before and after abortion (n=540).

Contraception Type	Number (before abortion)	Number (after abortion)
No contraceptives	459	505
Implant	1	0
Depo Provera	30	7
Vasectomy	1	1
Minilap	1	1
OCP	28	14
Condom	13	8
IUCD	7	4

Out of the 540 clients, 510 (94.44%) clients had medical induction and 29 (5.37%) clients had surgical evacuation whereas one absconded. Thirty-four clients (6.67%) of medical induction were converted to surgical evacuation.

Table 4. Misoprostol dose for medical induction.

Number of dose	Number of clients
Mifeprystone only	1
1	74
2	219
3	169
4	44
5	22
Repeat cycle	14

In medical induction, as shown in Table 4, one client expelled with mifeprystone alone and 74 expelled with the loading dose only. Highest number of clients expelled with two doses. Fourteen clients required

repeat cycle of misoprostol. Exploration was required in 42 clients. The mean expulsion hours according to gestational age is given in the Table 5.

Table 5. Mean expulsion hours in medical induction according to gestational age.

Gestational age	Mean expulsion hours
12-14 weeks	5 hours
15-17 weeks	6 hours
18-20 weeks	7 hours
21-23 weeks	7 hours
24 weeks and above	9 hours

The expulsion hour increased in higher gestational age. Most of the clients (n=245) expelled within 4-7 hours (Table 6).

Table 6. Expulsion hours for medical induction (n=510).

Expulsion Hours	Number (%)
1-3 hours	99 (19.41)
4-7 hours	245 (48.04)
8-10 hours	64 (12.55)
More than 11 hours	54 (10.59)
Repeat doses	14 (2.75)
Medical induction converted to D&E	34 (6.67)

In surgical method, out of thirty planned clients one absconded. In most of the clients cervix was well prepared in 2 (n=10) or 3 (n=12) doses (Table 7).

Table 7. Misoprostol dose for surgical abortion (n=29).

Number of dose	Clients (%)
1	4 (13.7)
2	10 (34.4)
3	12 (41.3)
4	2 (6.8)
5	1 (3.4)

DISCUSSION

Misoprostol with or without mifeprystone has been investigated for medical abortion in the second trimester. This study used both mifeprystone and misoprostol for medical induction and only misoprostol for dilatation and evacuation.

In our study one patient absconded after taking

mifepristone and one patient had ruptured uterus. Both were excluded from analysis. The age of the clients ranged from 16-46 years out of which 31.67% (n=171) were illiterate, 89.81% (n=485) were housewives. Around seventy one percent (n=383) were multipara, gestational age ranged from 12-24 weeks and 52.41% (n=283) were between 12-14 weeks. The commonest reason for abortion was mental ill-health 82.04% (n=443). In a study from Nepal, the age range was 14-45 years, and 50% were illiterate. In that study 84% were multipara, gestational age range was 12-24 weeks and 56% were between 12-14 weeks.¹⁰

In our study success was 90.58% (n=462), expulsion with total five doses of misoprostol which is comparable to 91.4% in a study from Hong Kong¹¹ and 97% in a study from Scotland.⁷ There were 70.93% (n=383) clients who were multiparous, 82.04% (n=443) wanted abortion due to mental ill-health and 11.85% (n=64) were unmarried in comparison to a study from Nepal where multiparity was 61.4% and 5.26% were unmarried.¹⁰ The median induction to abortion time was 4-7 hours. The expulsion hours increased, as the gestational age increased as the study showed median induction to abortion time for more than 24 weeks was 9 hours. The median induction to abortion time was 6.7 hours in study of Ngai et al¹² and 7 hours in study of Elami-Suzin et al¹³ which are comparable to our study.

In this study, 7.78% (n=42) required exploration of uterine cavity due to retained placenta or bleeding, whereas 5% in a study of Goh et al¹⁴ and 8.1% in a study of Rose et al¹⁵ required exploration.

Surgical evacuation was done in 29 cases. The median number of dose of misoprostol required was three whereas in the study from Nepal, the median number of dose of misoprostol was two.¹⁰ In our study, 6.67% (n=34) of medical abortion were converted to surgical abortion, but none of the surgical abortion was converted to medical abortion. But Shrivastava et al¹⁰ reported a 5% conversion of surgical abortion to medical abortion.

Out of the total 2298 cases of abortion performed during the study period, 24% were for second trimester abortion, 22% were for medical abortion up to 9 weeks and 54% were surgical abortion below 12 weeks. In the survey of Health Ministry of Nepal as cited by Thapa¹⁶ 3% were for second trimester abortion, 74% were medical abortion and 23% were for surgical abortion. The difference might be due to not including the data of private centers that give abortion service in greater number.

CONCLUSIONS

The combined use of mifepristone and misoprostal had a good outcome in medical induction of second trimester abortion. Misoprostal only can be used for the cervical preparation in case of surgical abortion for second trimester.

DISCLOSURE

The authors report no conflicts of interest in this work.

No violation of human rights and safety.

Funding: Nil

REFERENCES

- Shah I, Ahman E. Unsafe abortion in 2008: global and regional levels and trends. *Reprod Health Matters*. 2010;18(36):90-101.
- Aniteye P, Mayhew S. Attitudes and experiences of women admitted to hospital with abortion complications in Ghana. *Afr J Reprod Health*. 2011;15(1):47-55.
- Mentula MJ, Niinimäki M, Suhonen S, Hemminki E, Gissler M, Heikinheimo O. Immediate adverse events after second trimester medical termination of pregnancy: results of a nationwide registry study. *Hum Reprod*. 2011;26(4):927-32.
- Gemzell-Danielsson K, Lalitkumar S. Second trimester medical abortion with mifepristone-misoprostol and misoprostol alone: a review of methods and management. *Reprod Health Matters*. 2008;16(31):162-72.
- Singh K, Fong YF. Preparation of the cervix for surgical termination of pregnancy in the first trimester. *Hum Reprod Update*. 2000;6:442-8.
- Carbonell JL, Velazco A, Rodriguez Y, Tanda R, Sanchez C, Barambio S, et al. Oral versus vaginal misoprostol for cervical priming in first-trimester abortion: a randomized controlled trial. *Eur J Contracept Reprod Health Care*. 2001;6:134-40.
- Ashok PW, Templeton A. Nonsurgical mid-trimester termination of pregnancy: a review of 500 consecutive cases. *Br J ObstetGynaecol*. 1999;106:706-10.
- Elsheikh A, Antsaklis A, Mesogitis S, Papantoniou N, Rodolakis A, Vogas E, et al. Use of misoprostol for the

- termination of second trimester pregnancies. *Arch Gynecol Obstet.* 2001;265:204-6.
9. Wright-Francis DL, Raynor BD, Webb GW. Misoprostol in second trimester termination of pregnancy. *Prim Care Update Obstet Gynecol.* 1998;5:176.
 10. Shrivastava V, Bajracharya L, Thapa S. Surgical abortion in second trimester: initial experiences in Nepal. *Kathmandu Univ Med J.* 2010;8(2):169-72.
 11. Tang OS, Chan CCW, Kan ASY, Ho PC. A prospective randomized comparison of sublingual and oral misoprostol when combined with mifepristone for medical abortion at 12–20 weeks gestation. *Human Reprod.* 2005;20(11):3062–6.
 12. Ngai SW, Tang OS, Ho PC. Randomized comparison of vaginal (200 microg every 3 h) and oral (400 microg every 3 h) misoprostol when combined with mifepristone in termination of second trimester pregnancy. *Hum Reprod.* 2000;15(10):2205-8.
 13. Elami-Suzin M, Freeman MD, Porat N, Rojansky N, Laufer N, Ben-Meir A. Mifepristone followed by misoprostol or oxytocin for second-trimester abortion: a randomized controlled trial. *Obstet Gynecol.* 2013;122(4):815-20.
 14. Goh SE, Thong KJ. Induction of second trimester abortion (12-20 weeks) with mifepristone and misoprostol: a review of 386 consecutive cases. *Contraception.* 2006;73(5):516-9.
 15. Rose SB, Shand C, Simmons A. Mifepristone- and misoprostol-induced mid-trimester termination of pregnancy: a review of 272 cases. *Aust N Z J Obstet Gynaecol.* 2006;46(6):479-85.
 16. Thapa S. 12+ weeks abortion. *Swasthya Khabar Patrika* (in Nepali). Poush 2071:34-7.