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Research Article

Study of efficacy of mifepristone as inducing agent for mid trimester medical termination of pregnancy in women with previous cesarean section

Shaila Chikkagowdra*, Vanaja Doddaiah, Veerendrakumar CM

Department of Obstetrics and Gynecology, VIMS, Ballari, Karnataka, India

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***Correspondence:**

Dr. Shaila Chikkagowdra,

E-mail: shailagboud@gmail.com

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ABSTRACT

Background: Second trimester pregnancy induction in the scenario of a prior caesarean birth has become an increasingly common due to improved prenatal screening methods. The objective of this study was to evaluate efficacy of Mifepristone as inducing agent for mid trimester medical termination of pregnancy in women with previous cesarean section.

Methods: Mifepristone 200 mg orally was given to 37 women willing for abortion between 13 to 20 weeks of gestation with previous LSCS for various indications during study period. After 36 hour misoprostol /oxytocin was given. Outcomes like rate of complete abortion, rupture, induction abortion interval and side effects were noted.

Results: Mean induction abortion interval (IAI) was 8.2+/- 3.8 hours. 80% of cases between 13 to 16 weeks aborted within first 10 hours. None of the cases had incomplete abortion, rupture or significant side effects.

Conclusions: Combination regimen has abortion rate as higher as 99-100% and median induction to abortion interval is as low as 6 hours. Second trimester abortion in prior cesarean section women should be carried out with caution.

Keywords: Medical abortion, Second trimester abortion, Mifepristone, Misoprostol, Cesarean section

INTRODUCTION

Cesarean Section is the most frequent surgical procedure performed in obstetrics and gynecology. Second trimester pregnancy induction in the scenario of a prior caesarean birth has become an increasingly common due to improved prenatal detection of fetal malformation by ultrasound and serum screening tests. Although many studies have demonstrated the small risk of complications for vaginal birth at term after a prior CS and the safety of early medical abortion.¹⁻³ The experience of a mid-trimester pregnancy termination in women with prior uterine scar is more limited.⁴ Uterine rupture, hemorrhage and hysterotomy/hysterectomy remain uncommon and inevitable complications of any termination method used in second-trimester pregnancy. Various protocols have been described, but few studies have documented the

efficacy of an abortion protocol combining of mifepristone and prostaglandin analogue (RCOG 1997). Our protocol achieved a complete abortion rate with lower morbidity with termination of pregnancy between 13 to 20 weeks, hence reporting the series.

METHODS

This single arm study was conducted in the Department of Obstetrics and Gynecology, VIMS, Ballari from January 2013 to December 2015. There were 37 abortions between 13 to 20 weeks of gestation with previous LSCS for various indications mentioned. In all these cases, pretreatment counseling was done, clinical assessment and laboratory investigations confirmed the fitness for medical method of termination. Severe anemia, deranged coagulation profile and women not

willing for medical methods were excluded. Mifepristone 200 mg⁶ was administered orally on empty stomach for all the recruited subjects after obtaining informed written consent. After 36 hr misoprostol or oxytocin was administered based on improvement in the Bishop's score. oxytocin 10 units infusion was started If the cervix was dilated and membranes were bulging titrating the dose depending on the response or 200 microgram of sublingual misoprostol was used fourth hourly if still the cervix was not dilated. In cases where there was failure to improve the Bishops score trans cervical Foley's bulb was placed. The Foley's catheter was left in place till its expulsion or 12 hour whichever was earlier. This was followed by sublingual misoprostol 200 microgram every fourth hourly. Injection tramadol was used as analgesic and injection ceftriaxone was the antibiotic given. All these cases were followed for the end results and data was documented.

Demographic data like age, parity, obstetric data including previous obstetrical outcome, number of previous LSCS, time since the surgery, indication for termination were noted. Outcomes like rate of complete abortion, rupture, induction abortion interval, hemorrhage requiring transfusion, need of hysterotomy, side effects such as pyrexia, nausea, vomiting and diarrhea, infectious morbidity and mortality were noted.

The collected data was entered into an excel sheet. After appropriate data cleaning, the data sheet was transferred and analyzed using SPSS software version - 20. Descriptive statistics were used to describe the study variables of the subjects. To compare the categorical qualitative data variables among the two study groups, Chi-square test and Z tests were used.

RESULTS

Total 37 women with prior caesarean underwent induction of abortion between 13 to 20 weeks of gestation during the study period. 83.7% of were between 21 to 30 years (Table 1). 40% were between 13 to 16 weeks and 35% were 20 weeks (Table 2).62% were 2nd gravida (Table 3). 83% had 1 prior LSCS and 16% had 2 prior LSCS (Table 4). 50% of terminations were due to anencephaly and other various anomalies not compatible with life and 35% were because of IUFD (Table5). 65% of cases combination of mifepristone and misoprostol was used. In 21% cases mifepristone, Foleys bulb and misoprostol was used. In 13.5% cases oxytocin was sufficient to expel the products. 62% of them aborted within 10 hours of PGs after priming and rest of them in next 10 hours (Table 7). Mean induction abortion interval (IAI) was 8.2+/- 3.8 hours (Table 7). 80% of cases between 13 to 16 weeks aborted within first 10 hours. 62% of 20 weeks aborted within 10 hours (Table 8). In our study none of the cases had incomplete abortion and rupture due to agents used for termination.

Table 1: Age wise distribution of the patients.

Age wise distribution of the patients		
Age group	Frequency	Percent
≤ 20 years	5	13.5
21 - 25 years	17	45.9
26 - 30 years	14	37.8
> 30 years	1	2.7
Total	37	100.0
Mean±SD	25.03±3.53	

Table 2: Distribution of the patients based on gestational period.

Distribution of the patients based on gestational period		
Gestation period	Frequency	Percent
13 - 16 weeks	15	40.5
17 - 19 weeks	9	24.3
20 weeks	13	35.1
Total	37	100.0
Mean±SD	18.41	4.11

Table 3: Gravida wise distribution of the patients.

Gravida wise distribution of the patients		
Gravida	Frequency	Percent
Gravida 2	23	62.2
Gravida 3	9	24.3
Gravida >3	5	13.5
Total	37	100.0

Table 4: Distribution of the patients based on previous no. of LSCS.

Distribution of the patients based on previous no. of LSCS		
Previous no. of LSCS	Frequency	Percent
1	31	83.8
2	6	16.2
Total	37	100.0

Table 5: Distribution of the patients based on indication of abortion.

Indication of abortion	Frequency	Percent
Anencephaly	6	16.2
Anhydromnios	2	5.4
Other Anomalies	13	37.8
IUFD	13	35.1
PROM	2	5.4
Total	37	100.0

None of the cases had significant side effects like pyrexia, nausea, vomiting and diarrhoea. 2 women required blood transfusion not because of haemorrhage but due to pre-existing anemia. 100% of the cases had

complete abortion, none required check curettage. As antibiotic coverage was given, none had significant sepsis or morbidity. 50% had minor degree of pain which alleviated after injection tramadol.

Table 6: Distribution of the patients based on method of termination.

Method of termination	Frequency	Percent
Mifepristone + misoprostol	24	64.9
Mifepristone + Foleys bulb + misoprostol	8	21.6
Mifepristone + Oxytocin	5	13.5
Total	37	100.0

Table 7: Distribution of the patients based on induction abortion interval.

Induction abortion interval	Frequency	Percent
1 - 9 hours	24	64.9
10 - 20 hours	13	35.1
Total	37	100.0
Mean±SD	8.22	3.81

Table 8: Gestation versus induction abortion interval among the patients.

Parameters	1 - 9 hours	10 - 20 hours	NA	Total
13 - 16 weeks	12 (80.0)	3 (20.0)	0 (0.0)	15 (100)
17 -19 weeks	3 (33.3)	5 (55.6)	1 (11.1)	9 (100)
20 weeks	8 (61.5)	5 (38.5)	0 (0.0)	13 (100)
Total	23 (62.2)	13(35.1)	1 (2.7)	37 (100)

Figures in parenthesis are percentages.

Table 9: Major complications.

	Frequency
Haemorrhage	None
Incomplete	None
Rupture	None
Hysterotomy	None
Total	None

DISCUSSION

Uterine rupture during labor induction abortion has been reported with almost all agents including high-dose oxytocin ethacridine lactate, urea/PGF2 α , saline/PGF2 α and misoprostol.⁷⁻¹¹ Approximately half have been in unscarred uteri, and most have occurred in women with pregnancies of 18-24 weeks gestational age.¹²⁻¹⁶ For second trimester abortion (13-24 weeks of gestation), medical abortion with mifepristone followed by a prostaglandin analogue is an appropriate method and has been shown to be safe and effective, according to WHO

and the RCOG.¹⁷⁻²² It has been well proven that pre-treatment with mifepristone 24-48 hours before prostaglandin administration increases the success rate, shortens the induction-to-abortion interval and reduces the amount of prostaglandins required in the second trimester in unscarred uteri.^{23,24}

In our series women with previous LSCS, mifepristone 200 mg was given 36 hours prior to the misoprostol or oxytocin and found that none of the cases had incomplete abortion or rupture probably because we had ensured improvement in Bishop's score even by putting Foley's bulb before administration of prostaglandins. None had significant side effects like pyrexia, nausea, vomiting and diarrhea probably due to lower dose of misoprostol. Two of our subjects required blood transfusion not because of hemorrhage but due to pre-existing anemia. All of them had complete abortion confirmed by placental examination and ultrasound, none required check curettage. It could be speculated that, with the combination of mifepristone and misoprostol, the incidence of uterine rupture should be lower because of the advantage of cervical dilatation facilitated by mifepristone even before the uterus begins to contract to expel its contents.

Routine surgical evacuation of uterus following medical abortion is not required.²⁶ It is noteworthy that the mean dose of misoprostol necessary to induce abortion was lower with pre-treatment with mifepristone. This is important since prolonged induction of labor up to 24 hrs has been correlated with a higher risk of uterine rupture.²⁷ However, comparison of our data with those published elsewhere is difficult because protocols have varied widely with regard to administration mode type and dosage.²⁸ In series using extra-amniotic perfusion of PGE2 for abortion between 16 and 27 weeks gestation.²⁹ Observed no case of uterine rupture. In 600 women who underwent abortion after 15 weeks with oxytocin 3.8% of them had uterine rupture.³⁰ In our series none had rupture.

The main limitations of this study are its size, single arm and usage of customized protocols within the study. Larger randomized trials will be required to determine safety of combination protocol comparison with other proposed protocols for abortion in women with previous cesarean section.

CONCLUSION

Combination regimen has abortion rate as high as 99-100% and median induction to abortion interval is as low as 6 hours. Second trimester abortion in prior cesarean section women should be carried out with caution.

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