A comparative analysis of first trimester medical abortion in cases with previously scarred and non-scarred uterus: A case control study

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Abstract—*In recent years, termination of pregnancy has also become more common procedure due to intensive development of medicines and increasing demand for such procedures. In previously scarred uterus the use of medical abortion regimen could avoid severe complications such as uterine perforation, cervical laceration and other physical and psychological trauma which are caused by surgical termination of pregnancy. This prospective study was conducted in Department of Obstetrics and Gynaecology, J.L.N. Medical College, Ajmer from December 2015 to November 2017 to compare the efficacy, safety and acceptability of medical abortion in previously scarred and non-scarred uterus. For this study 75 women were included of amenorrhoea ≤ 49 days with previous one or two LSCS (Lower segment cesarean section) and 75 women with no LSCS (primi and multipara with prior normal delivery). Regime which was used in this study was tab. Mifepristone 200 mg followed by Misoprostol 600µgm were given to them. Follow up was done at day 14 using sonography. The overall success rate for complete abortion in group I was 88% and that of group II was 89.3%.Total proportion of incomplete abortion was 9.33% in group I as compared to 8% in group II and continuation of pregnancy occurred 2.67% in both the groups during the entire study period. Thus there was no significant difference in efficacy of medicines in achieving abortion in scared and non-scared uterus. So early medical abortion represents an important method in previous scarred uterus patients having unwanted pregnancy. These regimens offer the prospect of a more private, less intrusive form of abortion that is both safe and effective.*

Keywords: Medical abortion, Scarred uterus, Non-scarred uterus, Mifepristone, Misoprostol.

I. INTRODUCTION

In recent years, the caesarean section rate is increasing gradually in almost all countries of world. During the same time period, termination of pregnancy has also become more common procedure due to intensive development of medicines and increasing demand for such procedures.[1]

Consequently, a specific group of patients has emerged, namely those with a previous uterine scar who require termination of pregnancy.[2] Pregnancy in the scarred uterus is a thorny situation in daily clinical work, especially in countries where the caesarean section rate is increasing. Serious complications in previous scarred uterus such as placenta previa and rupture of uterus are prone to take place following conception and consequently vacuum aspiration and curettage procedure increases morbidity and mortality by uterine perforation, serious hemorrhage and shock.[3]

Worldwide, an estimated 26 million pregnancies are terminated legally each year and 20 million are terminated illegally, with more than 78,000 deaths (2000).[4] Although the most widely used method for terminating the pregnancy is surgical, primarily vacuum aspiration, medical abortion offers an important

alternative to surgical abortion for women who wish to avoid a surgical procedure. More than 3 million women worldwide had medical abortion in past decade alone.[5] Medical abortion regimen using Mifepristone and Misoprostol are highly effective and safe protocol without having any surgical intervention and anaesthesia hazards and have been widely used for termination of early pregnancy.[1]

As to pregnant women with scarred uterus, however the published data about safety and efficacy of such medical abortion still remain few up to now. It was thought earlier that this kind of abortion regimen is contraindicated for scarred uterus but there is no evidence in experimental and clinical research to confirm this.[6] Moreover medical termination of pregnancy in early gestational period $\leq$ 49 days is more preferable for the patient as it maintains the privacy and convenience of the patient as well as it alleviates the anxiety for surgical intervention and reduces hospital stay. In previously scarred uterus the use of medical abortion regimen could avoid severe complications such as uterine perforation, cervical laceration and other physical and psychological trauma which are caused by surgical termination of pregnancy. Medical abortion regimen does not need anaesthesia or any equipment which makes it simple as well as convenient both for the patient and for doctors.

So this study was designed to compare the efficacy, safety and acceptability of medical abortion in termination of early pregnancy ($\leq$ 49 days) in previously scarred and non scared uterus.

II. METHODOLOGY

This case control was conducted in the Department of Obstetrics and Gynaecology, Rajkiya Mahila Chikitsalaya, JLN Medical College, Ajmer (Rajasthan) India.

Selection of cases: Among early pregnant women that is $\leq$49 days with confirmed dates and regular menstrual cycles (20-33 days) attending for medical abortion at Department of Obstetrics and Gynaecology, Rajkiya Mahila Chikitsalaya, JLN Medical College, Ajmer (Rajasthan) India. Suspected ectopic pregnancy/undiagnosed adenexal mass and women with known coagulopathy or on concurrent anticoagulant therapy were excluded from the study. Women who had contraindications to use of Mifepristone were also excluded from study.

Finally, 75 such early pregnant women with scare of previous one or two LSCS (Lower segment cesarean section) and 75 women with no LSCS (primi and multipara with prior normal delivery) were selected for this study.

Gestational period was decided by USG and clinical examination and A detailed history was taken with emphasis on menstrual history, last menstrual period of gestation and obstetric history specially regarding first and last LSCS (history regarding any other surgery of uterus e.g. myomectomy All the relevant information of the mother such as age, duration of pregnancy, gravida, parity and other details were recorded in a pre-designed semi structured Performa

Follow ups of these women were done as follows:-

First visit (Day 1):

- After a careful history and examination and informed written consent is obtained.
- Tab. Mifepristone 200 mg is administered orally.
- Patient is instructed to maintain a menstrual diary and explained about the possibility of spotting which should be considered a sign of abortion and that she must return clinic after 48 hrs.

Second visit (Day 3):

- History of any bleeding or side effects were noted.
- Vaginal Misoprostol 600µgm is given. For vaginal use, Misoprostol tablet should be moistened with a few drops of water and the women must lie in bed for half an hour.
- The time of start of bleeding and expulsion of products is to be noted by the patient.
- Patients were observed for any passage of products of conception, excessive bleeding per vaginum, any sign of drug reaction, flushing, nausea, vomiting, diarrhea, cramps, fever and chills.
- If the abortion has not imminent after 4 hours of the vaginal Misoprostol 600µg. One repeat dose was given of 400 µg per vaginally and the patient was admitted to hospital for observation for next 24 hour.

Third visit (Day 4):

- Patient was advised trans-abdominal USG in order to
    - Check the integrity of previous uterine scar
    - Find out of the completeness of abortion and the presence of retained products of conception.
- A repeat dose of Misoprost 600µg per vaginally was inserted if
    - There was no bleeding PV even after 24 hours of 1st day.
    - The USG shows presence of gestational sac with presence of fetal cardiac activity.
    - The USG shows presence of RPOC's
- The patient is observed for 4 hours in the hospital. During this time hourly pulse, BP. and temperature charting was done.
- Patients were observed for passage of products of conception or excessive bleeding per vaginum.
- Patients were instructed to come on day 15.

Fourth visit (Day 14):

- A clinical history regarding postabortal fever, duration and amount of bleeding per vaginum, passage of products of conception, foul smelling discharge per vaginum, pain abdomen, symptoms of continuation of pregnancy and any other complication which the patient considers important.
- Necessary clinical and pelvic examination was done.
- USG was required if the history and examination do not confirm expulsions of product of conception and whose day 4 USG showed the presence of RPOC's or presence of gestational sac.
- Pre-prepared questionnaire was given to the patient to assess the subjects actual experience with the method, overall satisfaction with it, whether the woman would recommend it to a friend.
- If the women is still having irregular bleeding curettage may be required.

All the relevant data were collected and entered in Microsoft Excel 2010 spread sheet. Significance of difference in proportions were inferred by chi-square test and significance of difference in means were inferred by unpaired 't' test. For significance p value <0.05 was considered significant.

III. RESULTS

Mean age group of present study group I was 28.86 years and of group II was 28.13 years. Mean gestational age of the subjects in group I in the present study is 43.48 days and group II is 43.81 days. Mean haemoglobin concentration at entry point in Group I was 10.14 gm% and group II was 10.04%.

On comparison, in both the study and the control group the characteristics of the patients with regards to age, gravidity, parity, period of gestation, hemoglobin on day 1 were comparable. (Table 1).

Table 1
Comparison of Characteristics of Study and Control Groups

S. No.	Characteristics	Group I (N=75) (Previously Scarred)	Group II (N=75) (Non -Scarred)	P Value LS
1	Mean age (years)	28.86	28.13	>0.05 NS
2	Mean gestational age (days)	43.48	43.81	>0.05 NS
3	Gravidity	3.24	3.17	>0.05 NS
4	Parity	2.2	2.14	>0.05 NS
5	Haemoglobin on day 1 (gm%)	10.14	10.04	>0.05 NS
6	Haemoglobin on day 14 (gm%)	9.85	9.85	>0.05 NS

The gravidity range from 1-5 in each group. Mean gravidity in group I was 3.24 and in group II was 3.17. Both the groups were comparable in terms of gravidity (p>0.05). (Table 2)

Table 2
Comparison of Gravidity of Study and Control Groups

S. No.	*Type of Gravida	Group I (N=75) (Previously Scarred)		Group II (N=75) (Non -Scarred)	
		No.	%	No.	%
1	Second gravida	18	24	20	26.6
2	Third gravida	32	42.6	30	40
3	Fourth gravida	15	20	15	20
4	> Fourth gravida	10	13.3	10	13.3

Primigravida was not found in any of the group
Chi-square Test=0.173 at 3 DF P Value=0.999 Level of Significance= Not Significant

Efficacy: In the present study, there was no difference in time taken to achieve complete abortion after medication in both study and control group. (Table 3)

Table 3
Comparison of Time to achieve complete abortion after medication in Study and Control Groups

S. No.	Time to achieve complete abortion	Group I (N=75) (Previously Scarred)	Group II (N=75) (Non -Scarred)	Unpaired 't Test P Value LS
1	**Initial time after taking RU 486 in days**	2.68 ± 0.78	2.72 ± 0.90	-0.291 at 148 DF 0.772 NS
2	**Expulsion time of villi sac after taking Misoprostol in hours**	2.89 ± 2.29	2.61 ± 2.27	0.752 at 148 DF 0.453 NS

It was also revealed that the efficacy of the procedure was judged 88% in group I (study group with women with previously scarred uterus subjected to medical abortion) and the efficacy in group II (control group with women with previously non scarred uterus subjected to medical abortion) was 89.3%. (Table 4)

Table 4
Comparison of Efficacy of abortion procedure in Study and Control Groups

S. No.	Efficacy	Group I (N=75) (Previously Scarred)		Group II (N=75) (Non -Scarred)	
		No.	%	No.	%
1	**Complete Abortion**	66	88	67	89.3
2	**Incomplete Abortion**	7	9.33	6	8
3	**Failed Abortion**	2	2.67	2	2.67

Chi-square Test=0.001at 2 DF P Value=0.999 Level of Significance= Not Significant

IV. DISCUSSION

In present study, age group in group I was 28.86 years and of group II was 28.13 years which was slightly higher than to the mean age of 22.85 years of the subjects in the study done by Razia Iftikhar[7] (2011).

Mean gestational age of the subjects in group I in the present study is 43.48 days and group II is 43.81 days which favorably matches with the study done by Prem Singla et al[8] in Patiala in 2008 who while studying 50 women desirous of medical termination of pregnancy with amenorrhoea of ≤49 days in previously scarred uterus. They were given 200 mg of Mifepristone as single dose followed by 600 gm of oral Misoprostol 48 hours later. Their mean gestational age was 6 weeks (42 days).

Mean haemoglobin concentration at entry into the present study group. Group I was 10.14 gm% and group II was 10.04% which were both comparable and there was no statistically significant difference between the two.

In the present study, the efficacy of the procedure was judged 88% in group I (study group with women with previously scarred uterus subjected to medical abortion) and the efficacy in group II (control group with women with previously non scarred uterus subjected to medical abortion) was 89.3%.

This efficacy rate was slightly lower than that of 97.5% as reported by Ashok et al.[9] They reported in their study on the outcome of medical abortion in 2000 women with gestational age of ≤63 days, using 200 mg of oral Mifepristone, followed by 800 gm of vaginal Misoprostol. The slightly higher success rate in the authors study may have been due to the higher dose of Misoprostol of 800 gm as against 600 gm used in the present study.

Li (2015)[10] in their Randomized trial comparing Mifepristone doses for abortion, found 98.3% efficacy with Mifepristone 150mg followed by 200µg in patient with normal menstrual cycles, with ≤35 days of amenorrhea.

Ruby Bhatia et al.[11] in their study on women with previously scarred uterus with gestational age ≤49 days using 200 mg Mifepristone followed 48 hours later by 400 gm vaginal Misoprostol reported the efficacy of 98%.

V. CONCLUSION

By carefully observing the results of the present study, it can be concluded that medical abortion is effective, safe and acceptable procedure upto ≤ 49 days of gestational age for medical termination of pregnancy in previously scarred uterus and it can be offered as against the standard suction evacuation procedure that would require for an operative procedure, anaesthesia, a skilled surgeon and occupancy of a bed in hospital which significantly increases the cost of procedure as compared to the money spent

in medical abortion. Medical abortion is a revolutionary technique. It is safe, efficacious, highly acceptable to women in both developed and developing countries. The availability of this low cost medical treatment using agents which do not require special cold storage and transport facilities may make the provision of safe abortion feasible in developing country settings where medical facilities are limited. The only limitation of this procedure is that it can be effectively given in early weeks of pregnancy.

CONFLICT OF INTEREST

None declared till now.

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