

ORIGINAL RESEARCH

Determination of efficacy of Mifepristone in induction of first-trimester miscarriage

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ABSTRACT

Background: First-trimester miscarriage, which is defined as pregnancy failure up to 13 complete weeks. The present study determined efficacy of Mifepristone in induction of first-trimester miscarriage. **Materials & Methods:** 106 patients with first-trimester miscarriage prior to the 14th week of gestation were given repeatable doses of 800 mcg misoprostol vaginally. Parameters such as type of miscarriage, previous surgical interventions on uterus and time from previous delivery (years) were recorded. **Results:** Out of 106 patients, 86 had successful induction and 20 had unsuccessful induction. The difference was significant ($P < 0.05$). The number of miscarriages was 1 in 66 and 13 respectively, and >2 in 20 and 7 in successful and unsuccessful induction respectively. Missed abortion was seen in 54 and 12 and blighted ovum in 32 and 8 in successful and unsuccessful induction respectively. Previous surgical interventions on uterus was seen in 11 and 3 in successful and unsuccessful induction respectively. The time from previous delivery was 3.21 years and 3.82 years in successful and in unsuccessful induction respectively. The difference was significant ($P < 0.05$). **Conclusion:** Misoprostol pharmacological induction is a successful and safe treatment for first-trimester abortion.

Key words: First-trimester abortion, Misoprostol, induction

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INTRODUCTION

First-trimester miscarriage, which is defined as pregnancy failure up to 13 complete weeks, affects around 25% of women of reproductive age. The most common clinical manifestations of an unplanned miscarriage are spontaneous ejection of an embryo or fetus from the uterus and vaginal bleeding.^{1,2} When there is little to no bleeding, expectant care is adequate. However, after an incomplete, unavoidable, or missed abortion, fetal or placental tissues may sometimes remain in the uterus. In such cases, the choices include misoprostol-based pharmacological induction of abortion, dilatation and curettage (D&C), and expectant care.³

Mifepristone is expensive and not available everywhere. In 1988, China and France registered the first use of mifepristone, better known as RU486; this medication was intended to induce early first-trimester abortions. It is currently extensively authorized for usage in many nations, including a number of US and EU member states.⁴ Over three million women, including 620,000 in Europe, had taken mifepristone to end their pregnancies by the

year 2000. For women who are unable to obtain mifepristone, misoprostol alone—which is inexpensive and widely used for several obstetric and gastrointestinal purposes—can be a crucial substitute option.⁵ Through 63 days of gestation, medical abortion using 200 mg of mifepristone taken orally and 800 mcg of misoprostol applied vaginally or buccally is quite successful.⁶ The present study determined efficacy of Mifepristone in induction of first-trimester miscarriage.

MATERIALS & METHODS

The present study comprised of 106 patients with first-trimester miscarriage prior to the 14th week of gestation. All patients gave their written consent to participate in the study.

Data such as name, age etc. was recorded. All patients were given repeatable doses of 800 mcg misoprostol vaginally. Parameters such as type of miscarriage, previous surgical interventions on uterus and time from previous delivery (years) were recorded. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

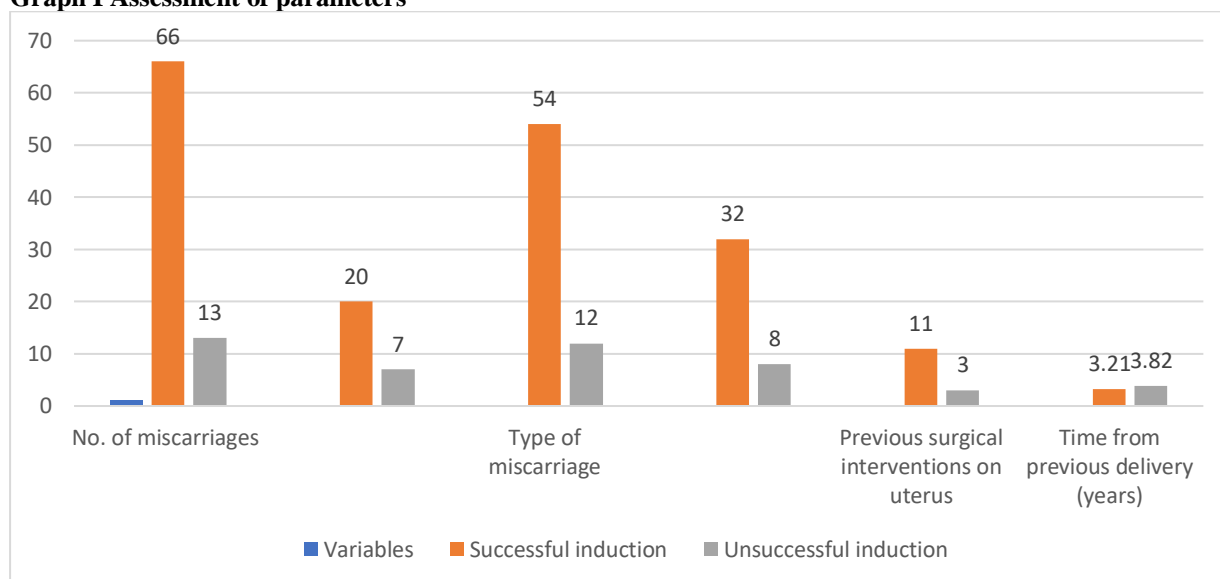
Induction	Number	P value
Successful induction	86	0.01
Unsuccessful induction	20	

Table I shows that out of 106 patients, 86 had successful induction and 20 had unsuccessful induction. The difference was significant ($P < 0.05$).

Table II Assessment of parameters

Parameters	Variables	Successful induction	Unsuccessful induction	P value
No. of miscarriages	1	66	13	0.05
	>2	20	7	
Type of miscarriage	Missed abortion	54	12	0.02
	Blighted ovum	32	8	
Previous surgical interventions on uterus		11	3	0.01
Time from previous delivery (years)		3.21	3.82	0.41

Table II, graph I shows that the number of miscarriages was 1 in 66 and 13 respectively, and >2 in 20 and 7 in successful and unsuccessful induction respectively. Missed abortion was seen in 54 and 12 and blighted ovum in 32 and 8 in successful and unsuccessful induction respectively. Previous surgical interventions on uterus was seen in 11 and 3 in successful and unsuccessful induction respectively. The time from previous delivery was 3.21 years and 3.82 years in successful and in unsuccessful induction respectively. The difference was significant ($P < 0.05$).

Graph I Assessment of parameters

DISCUSSION

An essential substitute for surgical abortion is provided by medical abortion. Misoprostol has been used extensively for termination of pregnancy (TOP) due to its affordability, efficacy, and medication stability at room temperature.⁷ Women in various nations utilize these drugs as outpatient treatments to end their pregnancies at home. Women find medical abortions to be just as safe, successful, and acceptable as in-clinic procedures.⁸ According to recent studies, the maximum gestational age for outpatient regimens involving buccal misoprostol and mifepristone may be increased to 70 days of gestation without a discernible decline in efficacy when compared to 57–63 days of gestation.⁹ A small number of sublingual misoprostol cases have been found to have similar efficacy.¹⁰ The

present study determined efficacy of Mifepristone's in induction of first-trimester miscarriage.

We found that out of 106 patients, 86 had successful induction and 20 had unsuccessful induction. Mukhopadhyay et al¹¹ in their study the patients are selected after careful examination and necessary investigations were divided into group A (n = 62) which received 400 µg of vaginal misoprostol followed by 200 µg vaginal misoprostol 4 hourly till expulsion of fetus or a maximum dose of 2000 µg and group B (n = 60) which received 200 mg of oral mifepristone followed 48 hours later by vaginal misoprostol as in group A. The present study showed that the both methods were effective in 2nd trimester MTP. Average blood loss was lesser in group B (131.66 ml) compared to group A (150 ml). Induction

abortion interval was shorter in group B (6.62 hours) than in group A (12.19 hours). Ninety percent of group B and 80.7% of group A had no complications. Success rate was higher in group B.

We observed that the number of miscarriages was 1 in 66 and 13 respectively, and >2 in 20 and 7 in successful and unsuccessful induction respectively. Missed abortion was seen in 54 and 12 and blighted ovum in 32 and 8 in successful and unsuccessful induction respectively. Previous surgical interventions on uterus was seen in 11 and 3 in successful and unsuccessful induction respectively. The time from previous delivery was 3.21 years and 3.82 years in successful and in unsuccessful induction respectively. Berghella et al¹² in their study seventeen studies were included for the review (n=at least 521): one prospective cohort study (n=53); six retrospective cohort studies (n=at least 311); five case series (n=150); and five case reports (n=5). Second trimester misoprostol termination was associated with: 0.43% uterine rupture rate (95% CI 0.08% to 1.67%; n=461) in women who had one prior low transverse caesarean delivery; 0% uterine rupture rate (95% CI 0.0% to 9.2%; n=46) in women who had two prior low transverse caesarean deliveries; and 0% uterine rupture rate in women who had three prior low transverse caesarean births (n=7). Two participants who underwent second trimester termination using misoprostol had prior classical caesarean delivery and one of those resulted in uterine rupture. All five case reports were of uterine rupture following second trimester misoprostol termination. None of the eight cases of uterine rupture resulted in maternal mortality or hysterectomy. Three required blood transfusion.

CONCLUSION

Authors found that misoprostol pharmacological induction is a successful and safe treatment for first-trimester abortion.

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