



Previous cesarean section and twin pregnancy are the risk factors for successful early medical abortion with intravaginal misoprostol monotherapy within 18 hours

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Objective

The objective of this study was to evaluate the predictive and the risk factors associated with the success of medical abortion by vaginal misoprostol monotherapy within 18 hours in the first trimester of pregnancy.

Materials and Methods

This study was a hospital-based retrospective cohort study. The study included women who were diagnosed with miscarriage at the first trimester of pregnancy in two university hospitals (Seoul St. Mary's hospital and Eunpyeong St. Mary's hospital) between January 2017 and May 2022. The records of 673 women with miscarriage up to 14 weeks of gestational age who underwent medical abortion by intravaginal misoprostol monotherapy were reviewed.

After counseling about surgical and medical abortion methods, patients seeking medical abortion were administrated either 600mcg or 800mcg doses of misoprostol vaginally (Cytotec)

If the expulsion of conceptus had not occurred within 6 hours, additional misoprostol (same as the initial dose) was inserted vaginally. A repeat additional dose of misoprostol was given after 12 hours and 18hours if the products of conception was not found. If patients changed their minds on treatment methods during the process, surgical curettage was performed immediately.

The successful abortion was defined as complete expulsion of the conceptus without the need for surgical intervention. Outcomes of interest were success of abortion within 18 hours following administration of misoprostol.

Results

Among 673 women who continued the process of medical abortion for 18 hours, 622 (92.4%) had a successfully completed abortion.

Table 1 shows the baseline data including maternal age, previous vaginal delivery, previous cesarean delivery, and previous abortion. Table 2 shows the laboratory and ultrasonographic factors associated with success of abortion

Table 1. Baseline characteristics of women with successful expulsion of gestational contents in 18 hours after using vaginal misoprostol.

Variable	Successful abortion (N=622)	Failed abortion (N=51)	P value
Maternal age (years)	34.9±4.4	34.7±5.1	0.811
Parity			1.000
Nulliparous	463 (92.4%)	38 (7.6%)	
1 or more	159 (92.4%)	13 (7.6%)	
Previous cesarean delivery			0.013*
No	564 (93.4%)	40 (6.6%)	
Yes	58 (84.1%)	11 (15.9%)	
Previous vaginal delivery			0.054
No	517 (91.5%)	48 (8.5%)	
Yes	98 (97.0%)	3 (3.0%)	
Previous curettage			0.729
No	478 (92.1%)	41 (7.9%)	
Yes	144 (93.5%)	10 (6.5%)	

Data are expressed as Number (%)

Table 2. Laboratory and ultrasonographic factors of successful expulsion of gestational contents in 18hours after using vaginal misoprostol.

Variable	Successful expulsion in 18 hours (N=622)	Failed expulsion in 18 hours (N=51)	P value
Twin			0.029
No	605 (93.2%)	44 (6.8%)	
Yes	19 (79.2%)	5 (20.8%)	
Type of pregnancy failure			0.877
Blighted ovum	220 (92.4%)	18 (7.6%)	
Fetal pole without heart beat	404 (92.9%)	31 (7.1%)	
Gestational sac diameter	2.48±1.12	2.38±0.99	0.528
Crown rump length	1.10±0.98	0.90±0.60	0.101
Uterine nodule			0.575
No	291 (59.8%)	196 (40.2%)	
Myoma	95 (56.5%)	73 (43.5%)	
Adenomyosis	9 (50.0%)	9 (50.0%)	
β-hCG	43,322±40,832	50,610±44,777	0.252

Data are expressed as median [Q1-Q3] or Number (%)

β-hCG β-human chorionic gonadotropin

Multivariate logistic regression showed that previous cesarean section is significantly associated with failed medical abortion within 18 hours (odds ratio, 2.354; 95% confidence interval (CI), 1.134-4.887; P = 0.022).

Twin pregnancy was also a risk factor for the failed medical abortion with 18 hours. (odds ratio, 3.193; 95% confidence interval (CI), 1.119-9.115; P = 0.030). Previous vaginal delivery seems to be associated with successful abortion within 18 hours on univariate analysis (P = 0.054), but the association was lost in multivariate analysis.

The most common side effects were abdominal pain, followed by fever. Mild nausea and diarrhea were also observed.

Table 3. Multivariate analysis of obstetric factors for successful expulsion of gestational contents in 18hours after using vaginal misoprostol.

Parameter	OR (95% CI)	P values
Previous vaginal delivery (No)	2.718 (0.824-8.970)	0.101
Previous cesarean section (Yes)	2.354 (1.134-4.887)	0.022
Twin (Yes)	3.193 (1.119-9.115)	0.030

OR odds ratio, CI confidence interval

Conclusion

Misoprostol monotherapy has a high success rate for first trimester abortion. Women with previous cesarean section history or women with twin pregnancy are less likely to achieve a successful abortion within 18 hours after intravaginal administration of misoprostol. These results can be used as a good basis for future study of abortion methods in women experiencing miscarriage.