

Comparative Evaluation of Vaginal Misoprostol and Intracervical Cerviprime Gel in Labour Induction

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Abstract:

Introduction: A common obstetric procedure used when carrying the pregnancy to term puts the mother or fetus at risk is induction of labor. Vaginal misoprostol and intracervical dinoprostone gel (Cerviprime) are two common pharmacological medications used for cervical softening and labor induction. The purpose of this prospective observational study was to evaluate the safety and effectiveness of intracervical cerviprime gel and vaginal misoprostol for inducing labor.

Methods: Two groups of 35 pregnant women each were selected for the trial, which had 70 women in total who needed labor induction. Group B received intracervical cerviprime gel, and Group A received vaginal misoprostol. Induction-to-delivery time, birth method, and maternal problems such as uterine hyperstimulation were among the outcomes assessed. The independent t-test and chi-square test were used for statistical analysis, and a p-value of less than 0.05 was deemed statistically significant.

Results: The misoprostol group had a substantially shorter mean induction-to-delivery interval (10.95 hours) than the cerviprime group (12.51 hours) ($p = 0.03$). While the difference was not statistically significant, 84% of women in the misoprostol group and 68% of women in the cerviprime group gave birth vaginally ($p = 0.32$). Two incidences of uterine hyperstimulation were noted in the misoprostol group, but none were noted in the cerviprime group ($p = 0.47$).

Conclusion: vaginal misoprostol is more successful than cerviprime gel at shortening the induction-to-delivery interval. Nonetheless, the safety profiles of the two drugs were similar. To further assess their relative safety and efficacy, larger randomized studies are advised.

Keywords: Vaginal Misoprostol, Drugs, Induction-to-Delivery, Cerviprime Gel, Hyperstimulation.

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Introduction

The process of artificially starting uterine contractions prior to the natural onset of labor in order to achieve vaginal delivery is known as induction of labor. Premature rupture of membranes, intrauterine growth restriction, postdated pregnancy, and pregnancy-induced hypertension are among the obstetric diseases for which it is recommended [1]. The Bishop score is frequently used to evaluate the cervix's condition, which is crucial to a successful induction. Pharmacological medications are utilized for cervical ripening when the cervix is not suitable [2].

Cervical ripening and the induction of labor are significantly influenced by prostaglandins. One popular intracervical prostaglandin E2 preparation is Dinoprostone gel (Cerviprime) [3]. The synthetic prostaglandin E1 analogue misoprostol has become

well-liked because of its affordability, convenience of use, and efficacy [4]. The relative efficacy and safety of these agents are still up for dispute despite their widespread use. Although misoprostol has been shown to lessen the length of labor, it may also cause hyperstimulation in the uterus. The purpose of this study was to examine the effects of intracervical cerviprime gel and vaginal misoprostol on labor induction [5].

Methods

Study Design: Prospective observational study.

Study Setting: ESIC medical college and hospital, Bihta.

Study Duration: 1 year.

Sample Size: 70 pregnant women requiring labour

induction.

Inclusion Criteria

- Singleton pregnancy
- Cephalic presentation
- Gestational age ≥ 37 weeks
- Bishop score ≤ 6

Exclusion Criteria

- Previous cesarean section
- Placenta previa
- Multiple pregnancy

- Fetal distress

Study Groups

Group A: Vaginal Misoprostol (35 patients)
Group B: Intracervical Cerviprime Gel (35 patients)

Statistical Analysis: Appropriate statistical techniques were used to analyze the data. The mean induction-delivery interval between groups was compared using the independent t-test, and categorical variables were subjected to the Chi-square test. Statistical significance was defined as a p-value of less than 0.05.

Results

Table 1: Induction to Delivery Interval

Group	Mean Interval (hours)	p-value
Misoprostol	10.95	
Cerviprime	12.51	0.03

Interpretation: Misoprostol significantly reduced induction-delivery interval.

Table 2: Mode of Delivery

Group	Vaginal Delivery	Cesarean Section	p-value
Misoprostol	26	9	
Cerviprime	22	13	0.32

Interpretation: Higher vaginal delivery rate with misoprostol but not statistically significant.

Table 3: Uterine Hyperstimulation

Group	Hyperstimulation	No Hyperstimulation	p-value
Misoprostol	2	33	
Cerviprime	0	35	0.47

Interpretation: Slightly higher hyperstimulation in misoprostol group.

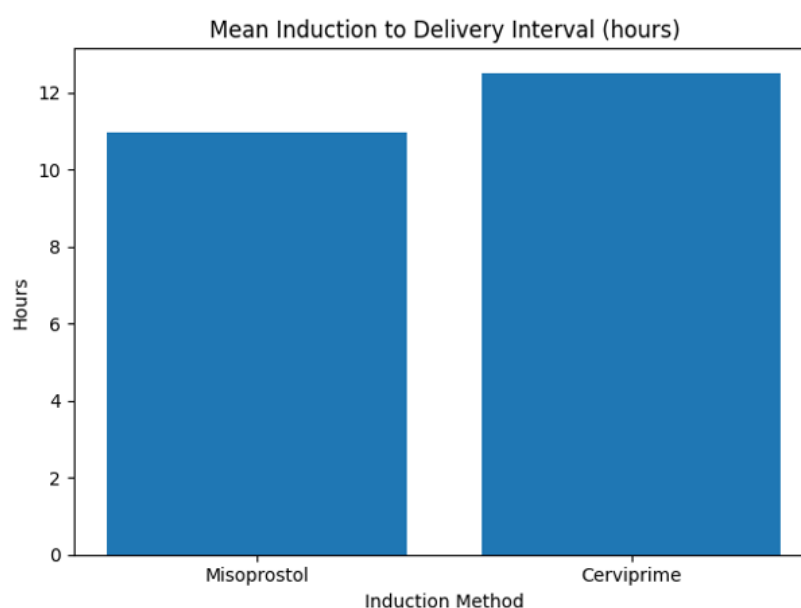


Figure 1: mean induction of delivery interval (hours)

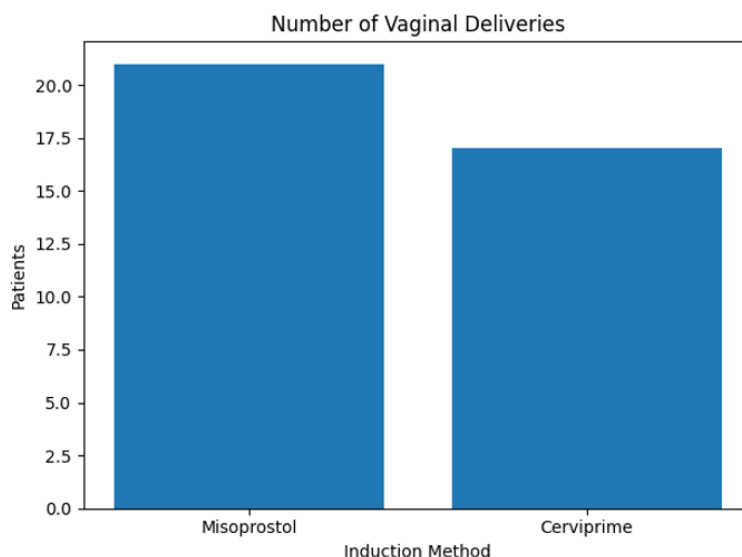


Figure 2: number of deliveries

Discussion

In order to induce labor, the current prospective observational study compared intracervical cerviprime gel and vaginal misoprostol. The results demonstrated that the misoprostol group had a considerably shorter mean induction-to-delivery interval [6]. This implies that misoprostol might work better to start labor and move it along to delivery.

The misoprostol group had a greater vaginal delivery rate (84%) than the cerviprime group (68%). The difference suggests a potential clinical benefit of misoprostol, even if it was not statistically significant [7,8].

Only the misoprostol group showed signs of uterine hyperstimulation. This result is consistent with other research that found misoprostol increased the risk of uterine tachysystole [9]. Similar findings from earlier research have demonstrated that misoprostol is superior to prostaglandin E2 preparations in terms of cervical ripening and labor induction [10].

Limitations

- Small sample size
- Single-center study
- Observational design
- Future randomized controlled trials with larger populations are recommended.

Conclusion

Both intracervical cerviprime gel and vaginal misoprostol work well for inducing labor. In contrast to cerviprime gel, vaginal misoprostol considerably shortens the induction-to-delivery period. Although misoprostol seems to work better, the possibility of uterine hyperstimulation necessitates close observation. To validate these results and direct

therapeutic practice, more extensive research is required.

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