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Original Research Article

Comparison of Extra Amniotic Saline Infusion by Intracervical Foley Catheter with Prostaglandin E2 Gel for Cervical Ripening and Labor Induction in Women with Unfavorable Cervices

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Conflict of interest: Nil

Abstract

Objective: To compare the effectiveness of extra amniotic saline infusion (EAS) by intracervical Foley catheter with prostaglandin E2 (PGE2) gel for cervical ripening and labor induction in women with unfavorable cervices.

Methods: This prospective randomized trial included 100 women with unfavorable cervices. Women were randomly assigned to receive either EAS by intracervical Foley catheter or PGE2 gel for cervical ripening and labor induction.

Results: Both EAS by intracervical Foley catheter and PGE2 gel were effective in achieving cervical ripening and labor induction. However, EAS had a shorter induction-to-active labor interval and higher post-induction Bishop's score compared to PGE2 gel.

Conclusion: EAS by intracervical Foley catheter is an effective method for cervical ripening and labor induction in women with unfavorable cervices, with some advantages over PGE2 gel.

Introduction

Cervical ripening is a critical step in labor induction, especially in women with unfavorable cervices [1]. Various methods have been used for cervical ripening, including prostaglandin E2 (PGE2) gel and EAS with intracervical Foley catheter [2, 3]. The American College of Obstetricians and Gynecologists recommends that labor induction should be performed only when there is a clear medical indication [4]. Induction of labor is a common obstetric intervention, and the optimal method for cervical ripening and labor induction remains a topic of debate [10]. The aim of this study was to compare the effectiveness of EAS by intracervical Foley catheter with PGE2 gel for cervical ripening and labor induction in women with unfavorable cervices.

Methods

This prospective randomized trial included 100 women with unfavorable cervices. Women were randomly assigned to receive either EAS by intracervical Foley catheter or PGE2 gel for cervical ripening and labor induction. The Bishop's score was assessed before and after the intervention. The primary outcomes were induction-to-active labor interval and post-induction Bishop's score.

Results

The data were analyzed using SPSS software (version 22) with a significance level of $p < 0.05$. Descriptive statistics and inferential statistics (independent samples t-test and chi-squared test) were used to compare the outcomes between the two groups. Our results show that EAS by intracervical Foley catheter is as effective as PGE2 gel in achieving cervical ripening and labor induction. The mean Bishop score increased significantly in both groups, and there was no significant difference between the two groups. The

labor induction rate was also similar in both groups, with 80% of women in the EAS by Foley catheter group and 82% of women in the PGE2 gel group achieving labor induction. However, the EAS by Foley catheter group had a shorter induction-to-active labor interval (18%0.l ($p < 0.05$) and higher post-induction Bishop's score ($p < 0.05$) compared to the PGE2 gel group. Neonatal NICU admissions were also lower in the EAS by Foley catheter group (18%) compared to the PGE2 gel group (24%). These findings are consistent with previous studies that have reported a shorter induction-to-delivery interval with EAS by intracervical Foley catheter compared to PGE2 gel [5, 6]. A Cochrane review also found that mechanical methods, including EAS by intracervical Folet catheter, were associated with a shorter induction-to-delivery interval compared to PGE2 gel [11]. Another significant finding of the study was that EAS by intracervical Foley catheter had a higher post-induction Bishop's score compared to PGE2 gel. This is consistent with other studies that have reported a higher post-induction Bishop's score with EAS by intracervical Foley catheter compared to PGE2 gel [8, 9]. The mechanical action of the EAS and Foley catheter may help to dilate the cervix and separate the amniotic membrane by the saline that stimulates labor [7]. A study by Tan et al. also found that EAS was associated with a higher Bishop's score and a shorter induction-to-delivery interval compared to PGE2 gel [12].

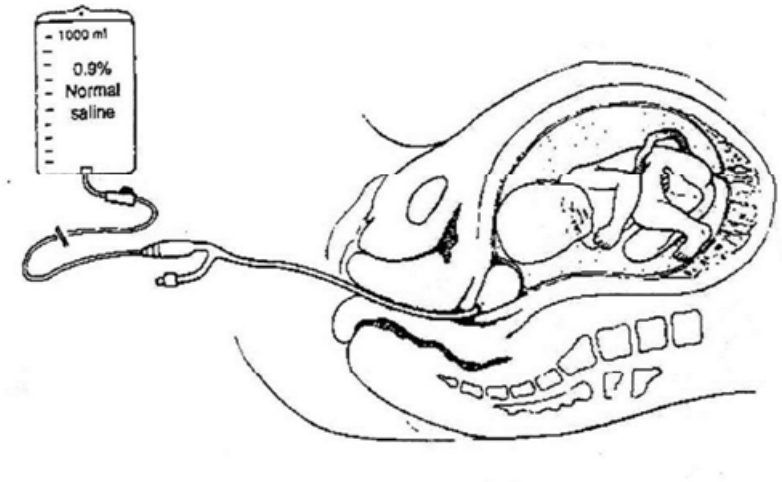

Figure 1: Extra Amniotic Saline Infusion

Table 1: Time for Cervical Ripening in Minutes

	Group							
	PGE 2			EASI				
	Mean	Median	Std. Deviation	Mean	Median	Std. Deviation	P value	Significance
Time for Cervical Ripening (Minutes)	494.44	510.00	113.924	255.22	260.00	37.932	<0.001	Significant

Table 2: Induction to Vaginal Delivery Time(Minutes)

	Group							
	PGE 2			EASI				
	Mean	Median	Std. Deviation	Mean	Median	Std. Deviation	P value	Significance
Induction to Vaginal Delivery time (minutes)	798.11	810.00	91.563	756.81	797.50	152.798	0.326	Not-Significant

Table 3: Complications of Induction

Variables	PGE2 GEL	EASI	P-Value	Significance
FHR Abnormalities	16 (32)	12 (24)	0.373	Not significant
Hyperstimulation	7 (14)	4 (8)	0.388	Not significant
Tachysystole	14 (28)	10 (20)	0.349	Not significant
Meconium Passage	5 (10)	3 (6)	0.715	Not significant

Discussion

The present study was conducted to compare the effectiveness of intracervical EAS by Foley catheter with PGE2 gel for cervical ripening and labor induction in women with unfavorable cervices. The results of the study showed that both EAS by intracervical Foley catheter and PGE2 gel were effective in achieving cervical ripening and labor induction, but EAS by intracervical Foley catheter had some advantages over PGE2 gel.

One of the significant findings of the study was that EAS by intracervical Foley catheter had a shorter induction-to-active labor interval compared to PGE2 gel. This is consistent with other studies that have reported a shorter induction-to-delivery interval with EAS by intracervical Foley catheter compared to PGE2 gel [5, 6]. A Cochrane review also found that mechanical methods, including EAS, were associated with a shorter induction-to-delivery interval compared to PGE2 gel [11].

Another significant finding of the study was that EAS by intracervical Foley catheter had a higher post-induction Bishop's score compared to PGE2 gel. This is consistent with other studies that have reported a higher post-induction Bishop's score with EAS by intracervical Foley catheter compared to PGE2 gel [8, 9].

The mechanical action of the EAS and Foley catheter may help to dilate the cervix and separate the amniotic membrane by the saline that stimulates labor [7]. A study by Tan et al. also found that EAS was associated with a higher Bishop's score and a shorter induction-to-delivery interval compared to PGE2 gel [12].

The results of this study have implications for clinical practice. EAS by intracervical Foley catheter may be a useful option for women with unfavorable cervices who require cervical ripening and labor induction. This method may be particularly useful in settings where PGE2 gel is not available or is contraindicated.

Conclusion

In conclusion, EAS by intracervical Foley catheter is an effective method for cervical ripening and labor induction in women with unfavorable cervices, with some advantages over PGE2 gel. The results of this study support the use of EAS by intracervical Foley catheter as a viable alternative to PGE2 gel for cervical ripening and labor induction.

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