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ORIGINAL ARTICLE

Analysis of Induction of Labor by Foley Extra-amniotic Saline Concurrent with Misoprostol (PGE1) versus Foley Extra-amniotic Saline Alone

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ABSTRACT

The success of induction of labor depends on the degree of ripening of the cervix.

This study compares the use of mechanical and a pharmacological method simultaneously to improve Bishop's Score.

Keywords: Cervical ripening, Extra-amniotic saline, Foley's catheter.

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INTRODUCTION

Induction of labor refers to artificial stimulation of uterine contractions before the true onset of spontaneous labor to achieve vaginal delivery by medical or surgical means. The benefits of early delivery to either mother or fetus should out way the risk of pregnancy continuation.

The Foley catheter with extra-amniotic saline (EAS) affects cervical ripening in two ways; gradual dilatation and separation of the deciduas from the amnion stimulating prostaglandin release and concurrent application of misoprostol (PGE1) will further help ripen the cervix.

AIMS AND OBJECTIVES

To compare efficacy and safety of Foley extra-amniotic salone (EAS) concurrent with 25 mg misoprostol (PGE1) up to three doses fourth hourly and Foley EAS alone for induction of labor.

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MATERIALS AND METHODS

It was a randomized prospective study from October 2015 to January 2016 conducted in the Department of Obstetrics and Gynaecology, Institute of Maternal and Child Health, Government Medical College, Kozhikode, Kerala. A hundred women with Bishop's score <3 who underwent induction of labor for various indications were randomly divided into two groups :

- *Group A*—Foley catheter with EAS and concurrent 25 µg of misoprostol 4th hourly for three doses in the posterior fornix
- *Group B*—Foley EAS alone.

Inclusion Criteria

Singleton pregnancy, longitudinal lie, beyond 37 weeks and Bishop score <3

Exclusion Criteria

Placenta praevia, fetal weight >4 kg

Labor outcome, side-effects, and complications were compared in both the groups. The statistical methods used were the Chi-square test and Fisher's exact. A '*p*' value less than 0.05 was considered statistically significant.

RESULTS

The two groups were comparable with respect to maternal age, parity, gestational age and indications for induction of labor (Table 1)

There was no significant difference in the mode of delivery between the two groups. Majority in both groups had normal labor. However, the foley expulsion was earlier in group A (mean 5 hours and 46 minutes) as compared to group B ($p = 0.0001$) which was statistically significant (Table 2). The induction delivery interval was also significantly reduced (mean reduction of 6 hours) in group A ($p = 0.0001$). 74% in group B required PGE2 induction. There was no significant difference in the birth weight in the two groups. All the babies in the study had an Apgar of 9 in one minute and there were no complications or hyperstimulation.

Table 1: Demographic characteristics

	Group A	Group B
Age (years)		
<20	15	7
20–30	25	35
>30	10	8
Parity		
Primi	35	43
Para 1	13	4
≥Para 2	2	3
Gestational age (weeks)		
<37	2	1
>37	48	49
Indications for induction		
Gest HT	11	11
GDM	4	6
Past date	25	24
IUGR	10	9

Table 2: Results

	Group A	Group B
Mode of delivery		
Normal	41	47
LSCS	8	2
Vacuum	1	1
Foley expulsion (hours) p = 0.0001 (cases)		
<8	84%	70%
8–18	16%	18%
>18	–	12%
Induction delivery interval (hours) p = 0.0001 (cases)		
<12	12%	4%
12–24	66%	24%
>12	22%	72%
Birth weight (kg) p = 0.056		
<2.5	–	96%
2.5–3.5	100%	3%
>3.5	–	1%

DISCUSSION

Fifteen to thirty percent of pregnancies need induction. Preinduction cervical ripening increases the chance of induction of labor.[1] The mechanical and pharmacological methods of preinduction cervical ripening include Foley catheter, misoprostol (PGE1) and prostaglandin gel, etc. Use of Foley catheter inflated at the internal cervical os with extra-amniotic saline (250 mL) instilled is an effective way of cervical ripening. The use of 25 µg of misoprostol concurrently 4th hourly hastens the process. Other studies suggest that oxytocin use for induction or augmentation of labor is more successful after ripening of cervix with use of Foley catheter as compared to spontaneous labor or cervical ripening with prostaglandins alone.[2] In 11 studies, catheter balloon ripening was compared with cervical ripening by other mechanical, or pharmacological (oxytocin or prostaglandins). Of these, eight were prospective and randomized-controlled, and three were case-controlled studies. It is suggested that cervical ripening efficacy by catheter balloon is similar, or better than other methods and there is no significant difference in the mode of delivery or perinatal outcome.[3] The incidence of infection or chorioamnionitis is also not increased with the use of aseptic measures during instillation of Foley and EAS.[2] No prophylactic antibiotics are needed until amniotomy.

CONCLUSION

Foley with EAS and concurrent misoprostol (25 µg) 4th hourly is a more effective, cheap and safe alternative for preinduction cervical ripening of cervix for mother and fetus. However, the study needs to be conducted for a larger sample for confirming its efficacy.

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