

International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614
ISSN (E): 2522-6622
© Gynaecology Journal
www.gynaecologyjournal.com
2021; 5(1): 13-15
Received: 03-11-2020
Accepted: 10-12-2020

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Comparison of catheter induction with PGE2 gel for labour induction

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DOI: <https://doi.org/10.33545/gynae.2021.v5.i1a.786>

Abstract

Introduction: Induction of labour can be defined as the artificial initiation of labour, before its spontaneous onset, for the purpose of delivery of the fetoplacental unit [1, 2]. It is a commonly performed procedure in obstetrics, with an incidence ranging from 5% to 30% of all pregnancies [3]. Cervical ripening has got a close relationship with the success rate of delivery [4].

Materials and Methods: Induction of labour can be defined as the artificial initiation of labour, before its spontaneous onset, for the purpose of delivery of the fetoplacental unit [1, 2]. It is a commonly performed procedure in obstetrics, with an incidence ranging from 5% to 30% of all pregnancies [3]. Cervical ripening has got a close relationship with the success rate of delivery [4].

Discussion: In our study, the mean gestational age in group a patients was 38.64 weeks and 38.29 weeks in group b patients. The p value was 0.147. Mode of delivery in group a patients was FTVD in 30% and LSCS in 20%. In group B patients, mode of delivery was FTVD in 29.3% and LSCS in 20.7% patients. P-value was 0.863.

Conclusion: Our study concluded with the fact that induction of labour can be equally achieved by both intra cervical foleys catheter and PGE2.

Keywords: Cervical ripening, bishop's score, foleys catheter, hypoxia, fetoplacental unit

Introduction

Induction of labour can be defined as the artificial initiation of labour, before its spontaneous onset, for the purpose of delivery of the fetoplacental unit [1, 2]. It is a commonly performed procedure in obstetrics, with an incidence ranging from 5% to 30% of all pregnancies [3]. Cervical ripening has got a close relationship with the success rate of delivery⁴. Cervical ripening refers to a process of preparing the cervix for induction of labour by promoting effacement and dilatation as measured by Bishop's score⁵. Induction of labour should be safe, simple and effective. The success of induction depends upon the consistency, compliance and configuration of cervix with low Bishops score, there may be increased rate of caesarean section delivery, maternal fever and fetal hypoxia [6, 7].

Ripening of cervix may be achieved by mechanical techniques such as introduction of trans-cervical Foleys catheter [8, 9]. It can cause mechanical dilatation of cervix and stimulates endogenous release of prostaglandins by stripping the fetal membranes and release of lysosomes from decidual cells [10, 11]. Use of catheter is associated with reduced induction delivery interval, decrease caesarean section rate, increase rate of spontaneous vaginal delivery [12]. Currently foleys catheter balloon is the most commonly used mechanical device for labour induction [8, 9]. Intra-cervical application of PGE2 gel is also found to be effective for ripening of cervix as it can have a combined contraction inducing and cervical ripening effect [13]. Local application of PGE2 causes direct softening of cervix by a number of different mechanisms. It can cause connective tissue softening, cervical effacement and uterine activity [14, 15].

Aims and Objectives

To compare the efficacy and safety of intra cervical foleys catheter with PGE2 Gel for labour induction.

Materials and Methods

This prospective observational study was conducted in Post graduate department of Obstetrics and Gynaecology GMC Srinagar for a period of 1 year from October 2019 to October 2020.70

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patients were included in group A who underwent foleys catheter induction and 70 patients were included in group B who underwent induction with PGE2 gel.

Inclusion criteria

- Primigravida
- Singleton pregnancy
- Cephalic presentation
- >37 weeks of gestation
- Intact membranes

Exclusion criteria

- Multiple pregnancy
- Malpresentation
- Preterm
- Antepartum haemorrhage
- Previous uterine scar
- Cephalopelvic disproportion

Procedure

Written informed consent was taken for the participation in the study. After fulfilling the inclusion criteria, vaginal and perabdominal examinations were done. Patients were divided into two groups. The foleys catheter was inserted in group A patients, inflated with 50ml normal saline and pulled back

against the internal os and taped with abdomen. The catheter was removed after 12 hours of insertion, unless it had been expelled spontaneously or removed after spontaneous rupture of membranes. PGE2 gel was inserted in group B patients and doses were repeated after every 6 hours. Vaginal examination to determine Bishop Score was done before repeating each dose. Induction was started with oxytocin in case of increasing Bishops. Partographs were maintained for each patient.

Statistical analysis

Descriptive statistical analysis was carried out in the present study. Continuous variables were expressed as Mean±SD and categorical variables were summarized as frequencies. The statistical significance of the difference between two groups were based on *P*-value. A *P*-value of <0.05 was considered to be statistically significant.

Observations and Results

In our study, the mean gestational age in group A patients was 38.64 weeks and 38.29 weeks in group B patients. Mode of delivery in group A was FTVD in 30% and LSCS in 20%. In group B patients, mode of delivery was FTVD in 29.3% and LSCS in 20.7% patients. *P*-value was 0.863. The mean induction delivery interval in group A patients was 17.67±5.537 hours and 13.91±4.532 hours in group B patients.

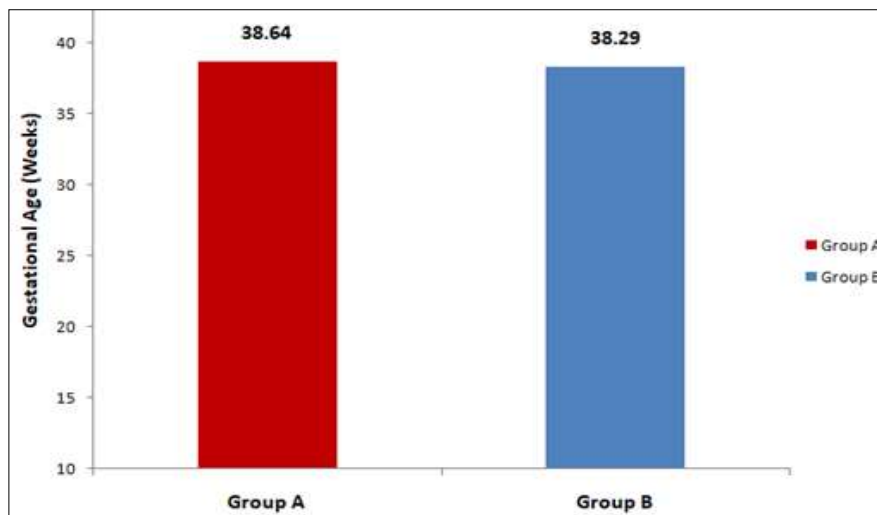


Fig 1: Shows Gestational Age (Weeks)

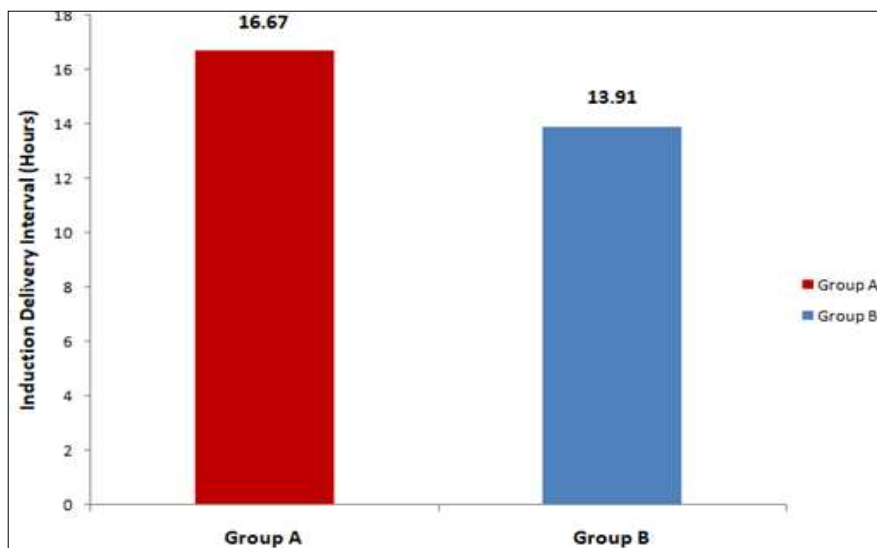


Fig 2: Shows Induction Delivery Interval (Hours)

Table 1: Comparison based on mode of delivery in two groups

Mode of delivery	Group A		Group B	
	No.	% age	No.	% age
FTVD	42	30	41	29.3
LSCS	28	20	29	20.7
Total	70	50	70	50

P-value = 0.863* (*P*-value by Chi-square test)

Discussion

In our study, the mean gestational age in group A patients was 38.64 weeks and 38.29 weeks in group B patients. The *p* value was 0.147. Mode of delivery in group A patients was FTVD in 30% and LSCS in 20%. In group B patients, mode of delivery was FTVD in 29.3% and LSCS in 20.7% patients. *P*-value was 0.863. The mean induction delivery interval in group A patients was 17.67±5.537 hours and 13.91±4.532 hours in group B patients. The *P*-value was less than 0.05 (statistically significant). The mean AOGAR score in group A babies was 6.83 at 1 minute and 7.34 at 5 minutes. However the mean APGAR score in group B babies was 6.99 at 1 minute and 7.17 at 5 minutes. The *P*-value was statistically insignificant.

Conclusion

Our study concluded with the fact that induction of labour can be equally achieved by both intra cervical foleys catheter and PGE2. However induction with foleys catheter leads to shorter induction delivery interval as compared to induction with PGE2. The rates of caesarean delivery and NVDs are almost same with both methods of induction. Neonatal APGAR scores are also same in both groups.

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