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To study the vide of installation of cerviprime gel as a method of induction of labour for patients in whom induction is indicated

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Abstract

Background: Labor is a process through which the foetus moves from the intrauterine to extra uterine environment. Induction of labor is defined as the initiation and perpetuation of uterine contractions with the goal of producing progressive cervical effacement and dilatation. Induction of labor is common in obstetric practice.

Aim& Objective: Study aimed to evaluate the efficacy of intracervical Prostaglandin E2 gel as a cervical ripening agent in unfavourable cervix for induction of labor.

Material and Methods: This study comprised of 100 women attended Obstetrics & Gynaecology Ward of Dr. V.R.K. Women's Medical College & Hospital who required labor induction Singleton pregnancy between 37- 41 weeks live intrauterine fetus.

Results: The most common indication for induction was past dates followed by pre-labor rupture of membranes and gestational hypertension. In our study, we have observed 64% of normal delivery and 36% of caesarean section. There was no perinatal morbidity and mortality. The rate of caesarean section was 61% in primigravida, whereas in 2nd & 3rd gravid normal delivery was 62%. Further there was no maternal morbidity and mortality. Maternal side effects were minimal and neonatal outcome was good.

Conclusion: The study showed that intracervical application of PGE2 is effective, safe and acceptable method for labor induction in women with unfavourable cervix. All these effects were achieved without increasing maternal and neonatal morbidity.

Keywords: Intracervical prostaglandin E2, Unfavourable cervix, Induction of labour.

Introduction

Induction of labour is indicated frequently in modern obstetrics. But labour induction when performed in patients with unripe cervix is associated with a higher incidence of prolonged labour, instrumental delivery and caesarean delivery. To minimize these complications, a number of agents have been used to ripen the cervix before labour induction; this includes laminaria tents, oxytocin, prostaglandin and nitric oxide etc [1, 2]. Labour induction with prostaglandins offers the advantage of promoting cervical ripening while stimulating myometrial contractility.

It means deliberate termination of pregnancy beyond 28 weeks by any method which aims at the initiation of labor and vaginal delivery [3]. The goal of modern obstetrics is to improve the safety of the mother and the fetus during the antenatal period as well as parturition. 4, 5 According to the most current studies, the induction rate varies from 9.5 to 33.7 percent of all pregnancies annually. The outcome of induced labor is highly dependent on the ripeness of cervix. In the absence of a ripe or favorable cervix, successful vaginal birth is less likely.

To date, no medications have been proved ideal for the induction of labor in a patient with an unripe cervix. The drugs commonly available for induction are oxytocin, dinoprostone gel and recently misoprostol [4]. Cervical ripening or preparedness for induction should be assessed before a regimen is selected. Assessment is accomplished by calculating a Bishop score. When the Bishop score is less than 6, it is recommended that a cervical ripening agent is used before labor induction. Nonpharmacologic approaches to cervical ripening and labor induction have included herbal compounds, castor oil, hot baths, enemas, sexual intercourse, breast stimulation, acupuncture, acupressure, transcutaneous nerve stimulation, mechanical and surgical modalities. Studies in vitro have revealed that prostaglandin E2 (PGE2) reduces cervical stiffness. Prostaglandin E2 placed intracervically is effective in improving unfavorable Bishop Scores.

Tightly woven bundles of collagen fibers in the human cervix are thought to split, separate and dissolve into more abundant ground substance after prostaglandin therapy. In some cases, an early uterine activity may start as well [5].

Study aimed to evaluate the efficacy of intracervical Prostaglandin E2 gel as a cervical ripening agent in unfavourable cervix for induction of labor.

Materials and Methods

Inclusion criteria

- Singleton pregnancy
- Cephalic presentation
- Gestational age >37 weeks

Exclusion criteria

- Gestational age <37 weeks
- Multiple pregnancy
- Previous uterine surgery
- Non-cephalic presentation

A study was done at our institute in 100 patients to assess the efficacy and safety of intracervical PGE2 gel in induction of labour. In this study the PGE2 gel commercially available Cervi prime (Astra IDL, Bangalore, India) containing 0.5 mg of PGE2 or dinoprostone was used for ripening of cervix. Labour was induced and whenever required augmented by oxytocin infusion in the form of a drip.

The patients who fulfilled the inclusion criteria were admitted and evaluated for maternal and fetal wellbeing. Obstetric ultrasound and non-stress test were carried out. The patients with reactive non-stress test were taken for the study. Written

informed consent was taken and Bishop score determined. Cervi prime gel was introduced intracervically with strict aseptic precautions.

The cervix was graded as a favourable cervix when the Bishop score was equal to or greater than six points. The patients who did not have a favourable cervix at the end of 24 hours required reinstallation. If ripening did not occur in spite of two instillation then the induction was termed as failed induction.

Results and Discussion

At term a series of complex biochemical, physiological and physical processes cascade, resulting in delivery. Several events are modulated by neuroendocrine pathways, humoral transmission, steroids and local hormones. During the transition to the onset of labour the cervix becomes soft, short and cervical resistance decreases. This process is called as "cervical ripening". The success of induction depends on the degree of pre-labour changes [6].

In the current study, we have used cerviprime, ARM & Mesoprostone for augmentation and progress of labor for outcome of delivery of the new born. Our findings similar to previous findings [6].

In our study, we have observed 64% of normal delivery and 36% of caesarean section. There was no perinatal morbidity and mortality.

The rate of cesarian section was 61% in primigravida, whereas in 2nd & 3rd gravid normal delivery was 62%. Further there was no maternal morbidity and mortality.

Installation is a very safe or good method of induction of labor for patients in whom the induction is indicated near term and post-dated.

Table 1: Labor induction in different cases

No of cases	Primi	Gravida G1-G3	Normal delivery	Caesarean Delivery
0-30	13	17	21	12
31-50	8	12	7	7
51-80	11	19	25	8
81-100	8	12	11	9

In the present findings, majority of the cases showed normal delivery after installation of Cervi prime gel. By using this methods we can also reduce the caesarean sections also. In all cases like primi, Gravida G1-3 after administration of Cervi prime gel it induce the safe labor without any morbidity and mortality. Now a days Cervi prime installation is safe induction and alternative method for labor.

In the non-pregnant state, the cervix consists of around 80% water and it increases to around 86% in late pregnancy. Glycosaminoglycans are highly hydrophilic and increase tissue hydration. They thus destabilise the collagen fibrils and promote ripening. The most abundant glycosaminoglycans in the cervix are chondroitin sulphate and its epimer dermatin sulphate [6, 7]

Endocervical application of prostaglandin E2 gel has become increasingly popular following studies in Sweden [6]. After these studies the use of PGE2 in the dose of 0.5 mg has become standard.

In this study, we have shown the beneficial effects of intracervical PGE2 gel in improving induction of labour was found to be directly proportional to the Bishop score at instillation.

The present study thus shows that a single application of intracervical PGE2 gel caused favourable changes in the cervix by shortened the induction de-livery interval with minimal side

effects.

Conclusion

To conclude intracervical PGE2 gel application is safe and acceptable method for induction of labour in patients with unfavourable cervix. With the better methods for induction of labour and better techniques of evaluation of foetal well-being the rate of induction of labour has further increased. An ongoing search for the better and safer methods for induction will continue in future.

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Conflict of Interest

None

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