ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

"COMPARISION OF INTRA CERVICAL PGE2 GEL AND TRANSCERVICAL FOLEY'S CATHETER FOR PRE-INDUCTION CERVICAL RIPENING"

KEY WORDS:

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INTRODUCTION:

Artificial initiation of labour prior to its spontaneous onset for the purpose of delivery of feto-placental unit is known as induction of labour (IOL). Successful IOL depends on the adequate level of pre induction cervical ripening, the process of preparing the cervix by cervical effacement and dilatation. [1]

Cervical ripening refers to a process of preparing the cervix for induction of labor by promoting effacement and dilatation as measured by modified bishop's score. [2]

Pharmacological and mechanical methods commonly used are prostaglandin preparations (PGE1 and PGE2) and various intracervical catheters (single or double balloon), respectively. Ripening of cervix may be achieved by mechanical techniques such as introduction of trans-cervical Foleys catheter. 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. [3]

AIM AND OBJECTIVE:

To compare the efficacy of trans cervical Foley's catheter and intra cervical PGE2 gel in cervical ripening for the successful induction of labour.

METHODOLOGY:

The study was conducted in P.E.S Institute of Medical Sciences and Research, Kuppam for a period of 3 months from Jan 2022 to March 2022. All the cases fulfilling the inclusion and exclusion criteria and willingness to participate in the study were included and they were divided into two groups. There were total 100 cases. Inclusion criteria: Primigravida ≥ 37 weeks of gestation, Single ton pregnancy, Cephalic presentation, Bishop's score ≤ 3, intact membranes, cases where conditions were fulfilled for vaginal delivery. Exclusion criteria: Multiple pregnancy, Malpresentation, Absent membranes Antepartum haemorrhage, previous uterine scar.

Group A (Foley's catheter): An 18 size Foley's catheter was introduced through cervix to extra-amniotic space using a sterile technique with the cusco's speculum and sponge holding forceps and 30 ml distilled water was instilled into the balloon. Then balloon is pulled up to the internalos. Catheter was tapped with thigh. Prophylactic antibiotic was given. Group B (Prostaglandin gel): PGE2 gel is available in the name of cerviprime gel as a sterile preparation containing 0.5 mg of dinoprostone per 3 gm (2.5 ml) of gel in a prefilled syringe with a catheter for endocervical application. After exposing the cervix by speculum 0.5 mg of PGE2 was inserted intra-cervically from a loaded syringe and the patients were kept in lying down position at least 30 minutes for absorption of drugs.

RESULTS:

The study included 100 antenatal women attending in P.E.S Institute of Medical Sciences and Research, Kuppam. In Foley's catheter group, the mean interval between treatment initiation and delivery was 17 hrs. In PGE2 group, mean interval between treatment initiation and delivery was 16 hrs. Difference of mean interval between treatment initiation & delivery between the two groups was not statistically significant.

The indications were similar in the two groups, According to indication of induction, maximum number of patients 17(34.0%) were post-dated in both Foley's catheter and PGE2 group. Association of indication of induction vs group was not statistically significant. Only four patients in Group A and seven patients in Group B developed some complications. Out of these, two patients in Group A and four patients in group B had PPH. One patient in Group A and no patient in Group B developed puerperal sepsis. One patient in Group A and no patient in Group B developed intrapartum pyrexia. No patient in Group A and 3 patients in Group B developed tachysystole. Out of all these complications, only tachysystole achieved statistically significant difference. In Group A, 47(94.0%) patients had no fetal adverse effects. In Group B, 41(82.0%) had no fetal adverse effects. In group A, 2 patients had abnormal fetal heart rate whereas 5 patients in Group B had abnormal fetal heart rate. 1 patient in Group A had meconium passage whereas no patient in group B had meconium passage. Presence of both MSL and abnormal fetal heart rate was present in 4 patients in Group B. which was significantly higher compared to group B which had no patients with both MSL and abnormal FHR. In Group A, 39 patients had normal vaginal delivery, 4 patients were delivered by ventouse. In Group B, 36 patients had normal vaginal delivery, 6 were delivered by ventouse. Rate of LSCS was 14% in Group A and 16% in Group B, The difference was not statistically significant.

DISCUSSION:

In a study by Gunawardenaa [1] with group A (Prostaglandin) and group B (Foley's), mothers in group A had 30.5% spontaneous onset of labour, only 24.6% mothers went into spontaneous onset of labour (p=0.78) in group B. Vaginal delivery rates were 77% and 72% in group A and B respectively (p=0.78). Respective Caesarean section rates of group A and group B were 22.8% and 27% (p=0.64).

In a study by Deshmukh [2], both the groups showed significant change in the Bishop's score, 5.56 ± 1.89 and 5.49 ± 1.82 for Foley's catheter and PGE2 gel, respectively, P<0.001; however there was no significant difference between the two groups. There was no significant difference in the side effects. Twenty eight cesarean sections (14%) were performed in Group A and 37 (18.5%) were performed in Group B (not significant). The induction to delivery interval was 15.32 ± 5.24 hour in Group A and 14.2 ± 5.14 hour in Group B (P = 0.291). Apgar scores, birth weights and NICU admissions showed no difference between the two groups.

In a study by Sangram Singh B[3], findings show that using misoprostol orally is much better than using it vaginally. Foley catheter proved to be the least effective induction technique, despite the fact that it offers the lowest risk.

In a study by Alam A [4], the groups were comparable with respect to maternal age, gestation age, indication of induction and initial Bishop's score. Both the groups showed significant change in the Bishop's score, 5.10±1.55 and 5.14±1.60 for Foley's catheter and PGE2 gel, respectively, P<0.001; However there was no significant difference between the two groups. There was no significant difference in the side effects and caesarean section rate in both groups. The induction to delivery interval was 16.01±5.50 h in group F and 16.85±3.81 h in group P (p = 0.073). Apgar scores, birth weights and NICU admissions showed no significant difference between the two groups.

CONCLUSION:

It can be concluded from the present study that Foley's catheter (mechanical) and prostaglandin E2 gel [pharmacological] both are effective agents for pre-induction cervical ripening which substantially improve the Bishop's score and increase the chances of successful labour induction. There is no significant difference in their efficacy, mode of delivery and perinatal outcome. The mean change in bishop's score at 6 hours was comparable in both groups. At 12 hours improvement in bishops score was significantly more in the Foley's catheter group. Induction of delivery interval was comparable in the two groups. Foleys catheter did not decrease the rate of caesarean section significantly but number of caesarean section done for fetal distress was less than the prostaglandin group but it was not statistically significant. Foleys catheter has fewer side effects, so very strict monitoring of uterine contractions is not required during the ripening phase. In developing countries where cost is an important limiting factor and very stringent conditions for storage of prostaglandin may not be available, Foley's catheter is a safe effective and relatively in expensive means of performing pre-induction cervical ripening.

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