

# Experience Of Using A Foley Catheter And Dinoprostone To Prepare The Cervix For Labor

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**Abstract:** This article analyzes cases of using a Foley catheter and dinoprostone for cervical preparation for labor and compares their effectiveness. According to the study results, induction of labor with a Foley catheter was more effective than dinoprostone in accelerating cervical ripening and the onset and duration of labor. In addition, the Foley catheter group had a lower complication rate, and the condition of the mother and child was more stable. These results demonstrate the efficacy, safety, and cost-effectiveness of Foley catheter induction of labor in clinical practice.

**Keywords:** induction of labor, methods and indications for induction, prognosis, cervix, Foley catheter, Bishop score.

**Introduction.** Induction of labor (programmed labor) is the artificial induction of labor before its spontaneous onset, as directed by the mother or fetus. Today, induction of labor is a generally accepted obstetric procedure used to improve perinatal outcomes, helping to prepare the cervix for labor, reduce complications associated with uterine contractility during labor, and improve the rate of maternal trauma and perinatal complications. However, like other medical interventions, induction of labor is associated with certain risks, such as an increase in the number of operative vaginal deliveries, cesarean sections, fetal distress, and miscarriage. One of the complications of special concern is hyperstimulation - excessive uterine contractions (hypertonic uterine contractions lasting more than 120 seconds) or tachysystole (uterine contractions more than 5 times in 10 minutes).

**Justification.** In labor induction, the condition of the mother and fetus, the condition of the cervix, and the gestational age should be taken into account. Indications for labor induction:

- Chorioamnionitis;
- Intrauterine fetal demise;
- Gestational hypertension;
- Preeclampsia, eclampsia;
- Preterm rupture of the membranes;
- Postpartum pregnancy;
- Extragenital diseases (diabetes mellitus, chronic lung and kidney diseases, chronic arterial hypertension);
- Fetal growth restriction syndrome.

Contraindications for induction of labor:

- Placental abruption, umbilical cord blood vessels;
- Transverse fetal position;
- Prolapse of the umbilical cord;
- Active genital herpes infection;
- Clinically narrow pelvis.

Depending on the clinical situation, there are different methods of labor induction. Methods of labor induction:

1. Pharmacological: Prostaglandin E1 (Misoprostol - oral, vaginal, rectal, sublingual, buccal tablets); Prostaglandin E2 (Dinoprostone) in various forms (intracervical, oral, vaginal); Oxytocin; Progesterone antagonist (mifepristone).

2. Mechanical and physical methods:

- Manual rupture of the membranes;
- Amniotomy;
- Foley catheter.

The method of labor induction is influenced by a number of factors: gestational age, fetal condition, cervical “ripeness”, integrity of the membranous membrane, uterine scar. Cervical ripening is determined by the following processes; dynamic and physiological changes controlled by hormonal background, inflammatory and vascular reactions, and other biological processes. Bishop’s score reflects the degree of cervical ripening and predicts the success of programmed labor. Bishop’s score  $<6$  corresponds to an immature cervix: 3 points – very immature, 4-5 – immature, 6-7 – moderately immature, 8 – mature cervix.

**Research objective.** Comparative evaluation of the effectiveness of cervical dilation using a Foley catheter and Dinoprostone.

**Materials and methods.** A comparative method of cervical dilatation was performed in 62 pregnant women. Group 1 consisted of 32 (51.6%) pregnant women with the Foley catheter method of cervical dilatation. Group 2 consisted of 30 (48.4%) pregnant women with the Dinoprostone preparation method. All patients underwent general examination, external obstetric examination, and fetal heart rate assessment. Cervical dilatation was assessed using the Bishop scale. Pregnant women in group 1 were placed intracervical Foley catheter (40-50 ml of saline), and those in group 2 were placed intracervically with Dinoprostone (Primigin gel 0.5 mg). All pregnancies were monitored for the onset of labor, the course of labor, the postpartum period, and the condition of the baby during labor and the early neonatal period.

**Results.** The age of the patients was 19-39 years, the mean age was  $27.6 \pm 2.5$  years. In group 1, there were 22 (68.75%) primiparous women, 10 (31.25%) re-parous women, 25 (83.3%) and 5 (16.7%) in group 2, respectively. The indications for preparing the cervix for childbirth were as follows: late pregnancy (41 weeks and above), cervical immaturity, impaired uteroplacental blood circulation 1B, 2nd degree. In group 1, the cervix was assessed as “immature” (0-1 points) and averaged  $1.5 \pm 0.2$  points. As a result of the insertion of a Foley catheter, cervical dilatation was “mature” (7 points and above) in 18 out of 32 pregnant women (56.25%). In group 2, cervical dilatation was 1-2 points, with an average of  $1.7 \pm 0.2$  points, and after dinoprostone administration, a dilated (7 points or higher) cervix was detected in 12 (40%) fetuses. When using a Foley catheter with a minimum initial value of cervical dilatation, the dynamics of cervical dilatation was higher in 25 (78.1%) fetuses compared to 12 (40%) patients who used dinaprostone. The effectiveness of the use of a Foley catheter was characterized by cervical dilatation and the onset of spontaneous labor in 18 (56.25%) fetuses. The possibility of performing amniotomy was 10 (31.3%) in group 1 and 5 (16.7%) in group 2. Pregnancy was delivered naturally in 27 (84.4%) women in group 1, by cesarean section in 5 (15.6%), and in group 2 in 20 (66.7%) and 10 (33.3%), respectively. No cases of uterine hyperstimulation were observed in women in group 1, and in group 2 in 1 (3.3%). The postpartum period was uneventful in women in both groups. Perinatal losses were not observed. Mild asphyxia (6-7 points on the Apgar scale) was observed in 10.4% of infants in group 1, and in group 2 in 19.4%.

**Conclusion.** The mechanical method of preparing the cervix for labor (using a Foley catheter) is considered highly effective and safe, with cervical dilatation observed in 78.1% of pregnancies and spontaneous labor in 56.25% of pregnancies. It was found that the use of a Foley catheter significantly reduces the need for cesarean section.

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