

Pre-induction of labor is a frequently used procedure in obstetrics, and the choice of the appropriate method can be important for the course of delivery. Pre-induction is essential to prepare the cervix for labor induction.

The aim of the doctoral dissertation was to compare the mechanical method of pre-induction - the Foley catheter and the pharmacological method - the Misodel vaginal system. The following were analyzed in the doctoral dissertation:

1. Assessment of obstetric conditions and indications for pre-induction.
2. Evaluation of the course of pre-induction of labor and delivery after the use of selected methods of pre-induction.
3. Analysis of indications for caesarean section.
4. Intrapartum CTG analysis.
5. Evaluation of the newborn's condition and its birth weight.

The study was conducted by retrospectively evaluating the medical records of 116 patients staying at the Department of Obstetrics, Gynecology and Oncological Gynecology at the Department of Pregnancy Pathology at J. Biziel University Hospital No. 2. in Bydgoszcz in 2018-2020, who underwent pre-induction of labor. Fifty-six patients underwent pre-induction using a Foley catheter, and 60 patients received the Misodel vaginal system.

The mean pre-induction time was longer in the Foley catheter group than in the Misodel group. Also, the mean time from Foley catheter insertion to delivery was longer in this group. After using Misodel, 15 women gave birth within 12 hours, and only three women gave birth after 48 hours from application. When analyzing the complications of both methods, it was shown that tachysystoles were reported in six women in total. In the group after the use of Misodel - 4 people (6.7%), while in the group with the Foley catheter - 2 people (3.6%). Hyperstimulation was less common than tachysystoles and was reported in two women in the Misodel group (3.3%) and in one woman in the Foley catheter group (1.8%). The umbilical cord blood pH  $\leq 7.19$  was found in a total of 11 newborns (9.9%): 10 newborns (16.9%) in the group after the use of Misodel and 1 newborn (1.9%) in the group after the use of the Foley catheter. Venous cord blood pH  $< 7.15$  was reported in four neonates - all in the Misodel group.

Misodel is a method of pre-induction that leads to labor faster than the Foley catheter and shortens the duration of pre-induction. Misodel does not significantly increase the risk of complications during pre-induction and labor induction. The use of Misodel may be associated with a slightly increased risk of delivering a neonate with a lower umbilical cord pH compared