Summary

Childbirth is an extraordinary moment in every woman's life, which is unfortunately often regarded as a painful, physically and emotionally demanding experience. Labor pain is considered a physiological response to the natural process of childbirth. Current perinatal care standards suggest that, in the absence of medical contraindications, the mother's request should be a sufficient indication for the use of labor analgesia.

Although pharmacological methods of labor analgesia are currently the gold standard, they are still associated with the risk of side effects for both the mother and her child. Therefore, non-pharmacological pain relief techniques present a promising alternative or complement to pharmacological methods.

One of the non-pharmacological methods for reducing labor pain is the use of transcutaneous electrical nerve stimulation (TENS). It is a non-invasive, non-addictive, and inexpensive method used in many medical conditions to relieve pain. The mechanism of TENS involves the use of electrical energy delivered through electrodes placed on the patient's skin.

The aim of this study was to analyze the impact of transcutaneous electrical nerve stimulation (TENS) on the course of labor and on labor pain relief.

The study sought to answer whether the use of transcutaneous electrical nerve stimulation affects:

1. the reduction of pain intensity during labor
2. the duration of labor
3. the mode of delivery completion
4. uterine contraction weakening and the frequency of oxytocin administration
5. the frequency of operative delivery using forceps or vacuum extraction
6. the frequency of episiothomy and perineum rupture
7. the incidence of postpartum hemorrhages and the need for instrumental uterine cavity inspection after childbirth
8. the condition of the newborn after birth

The study was prospective in nature. The study group consisted of 153 patients who were admitted to the Obstetrics Clinic for childbirth and opted for non-pharmacological pain relief in the form of transcutaneous electrical nerve stimulation (TENS). The control group consisted of 118 patients admitted for childbirth who did not choose non-pharmacological pain relief via TENS.

The TENS Perfect Mama+ device, designed to alleviate labor pain, was used in the study. The NRS (Numerical Rating Scale), which includes 11 levels of pain intensity ranging from 0 to 10, was used to assess labor pain. A score of 0 indicates no pain, while 10 represents the worst imaginable pain. Additionally, after childbirth, the patients were asked to complete a questionnaire, and data were collected from medical records regarding the patient's medical history, labor progress, and the newborn's condition.

Based on the study, after statistical analysis of the obtained results, the following conclusions were drawn:

1. The use of TENS significantly reduces pain intensity at the beginning of the active phase of the first stage of labor.
2. The use of TENS slightly reduces pain intensity during the second stage of labor.
3. The use of TENS prolongs the duration of the first and third stages of labor, with no effect on the duration of the second stage.
4. The most common reasons for discontinuing TENS therapy were the need for an emergency cesarean section, followed by patient discomfort, spontaneous electrode detachment, and lack of perceived effectiveness.
5. The use of TENS does not affect the weakening of uterine contractions, the frequency of cesarean or operative deliveries, the frequency of instrumental uterine cavity inspections, postpartum hemorrhages, episiothomy or perineum rupture.
6. The use of TENS does not negatively affect the newborn's condition, as assessed by the APGAR score and arterial cord blood pH.