CHOISE OF OPTIMAL ANESTHESIOLOGICAL TACTICS IN LABOR ANALGESIA

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Key words: spinal analgesia, obstetric sleep, labor.

Resume: *The comparison of spinal analgesia and obstetric sleep and their effect on delivery process and the baby.*

Relevance: The problem of pain relief in labor is not only medical but also social. Often after painful labor woman acquires fear of further childbearing, which negatively affects the country's demographics. Besides, the risk of postnatal depression increases [1]. Therefore, ensuring a comfortable childbirth should be a priority task for obstetric and anesthetic services.Stress reactions of maternal body can also be successfully corrected or even eliminated with adequate analgesia [2].It is also necessary to pay attention to how labor anesthesia may affect the fetus. According to studies, neuraxial blockade does not increase the duration of labor and does not affect the fetus, which is important to improve the level of public health [3; 4]. Currently in the US, this method is used in more than 60% of labors. In Belarus its using is less than 20% of cases [5]. Obsteric sleep continues to be applied in our country which generates controversy between anesthesiologists and obstetricians because the feasibility of the method is considered doubtful among anesthesiologists.

Goal: identification of optimal tactics anesthesia during labor analgesia.

Issues:1.Compare the effects of spinal analgesia and obstetric mothers sleep on hemodynamics;

2.Analyze the duration of labor analgesia with different methods; 3.Investigate the indicators of fetuses and newborns; 4.Study the possible complications of anesthesia.

Data and methods of research: We examined 45 patients of 6th and 5th Minsk City Clinical Hospital. The study included mothers who agreed to participate in age from 20 to 35 years, gestational age from 255 to 285 days, delivered per viasnaturales and who had no comorbidity.

New mothers were divided into 3 equal groups of 15 people. Group 1 (control) consisted of patients who gave birth without anesthesia. Group 2 included 15 women who gave birth with spinal analgesia (SA). Blockade was performed at the level L_{III-IV} with MarkainSpinalHevi (hyperbaric bupivacaine solution) in a dose of 1.5 mg. Group 3 included women with obstetric sleep (MS) with using of Hydroxybutyric acid (GHB) in a dose of 50 mg / kg, which lasted 1.5 hours ± 18,25 min.

Results: Duration of delivery by group is shown in Table 1 and averaged 7 hours ± 20 min 2 hours. No statistically significant differences were detected between the

groups. Thus, the choice of anesthetic tactics did not have a significant effect on the duration of labor.

Table 1. Duration of labor

	Group 1	Group 2	Group 3
Duration, minute	420,33 [330; 510]	467 [380; 460]	475,33 [400; 550]

Hemodynamics of mothers during all periods of childbirth was assessed by arterial pressure and heart rate, but the difference between both groups and within groups was not statistically significant.

Severity of pain was assessed using a visual analogue scale (VAS) [6] and numeral rating scale (NRS) [7]. VAS is a straight line length of 10 cm. The patient was asked to make a mark on the line corresponding to the intensity of his pain. Starting point line represents no pain - 0, then there is a weak, moderate, strong and unbearable pain - 10. Digital rating scale consists of 11 items 0 "no pain" and 10 "unbearable pain".

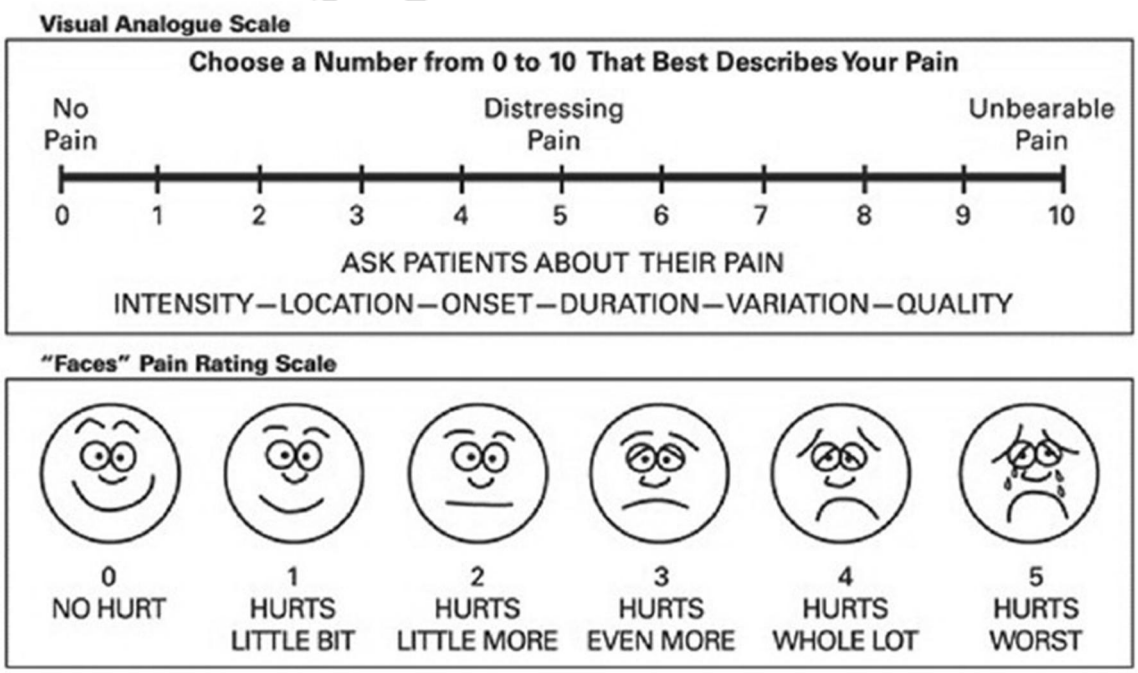

Figure 1 - VAS and NRS

Patients of the groups 1 and 3 suffered from severe pain, while a patient from Group 2, which was held spinal analgesia, observed more comfortable labor, estimating maximum pain at 6 points out of 10 in the second period. The difference between the two groups, calculated by the Mann-Whitney test, was statistically significant in the first and second stage of labor ($p < 0,05$), and the index difference inside the groups in all periods ($p < 0,05$ Student's criterion). The results are presented graphically in figure 2.

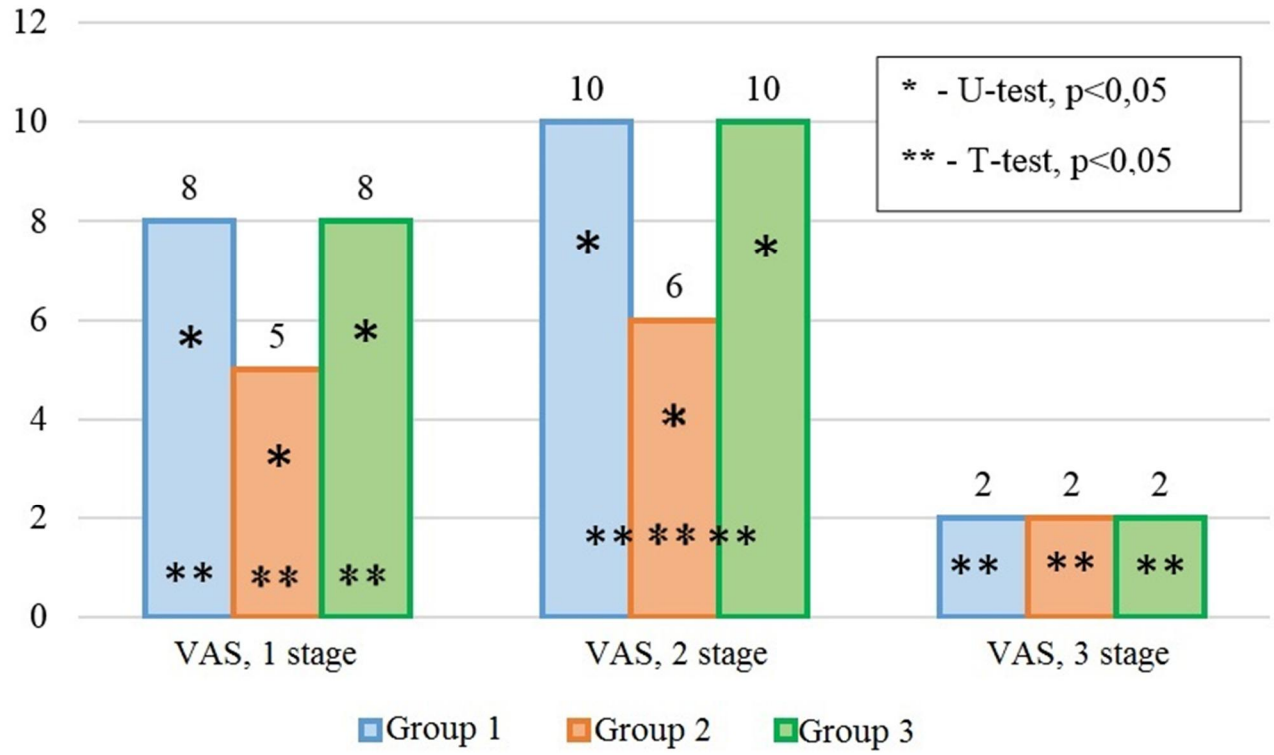

Figure 2 – Severity of pain

Fetal status was assessed according to the CTG, has been based upon the basal heart rate and STV-rhythm (ShortTermVariations) as indicators of fetal hypoxia. However significant differences between the groups haven't been identified, from which it can be concluded that the anesthetic did not have a pronounced effect on the fetus. In assessing newborns on Apgar score at 1 and 5 minutes of life the difference between groups 1 and 2 was not significant, but the group 3 figures were significantly lower ($p < 0,05$; $U \geq 2$).

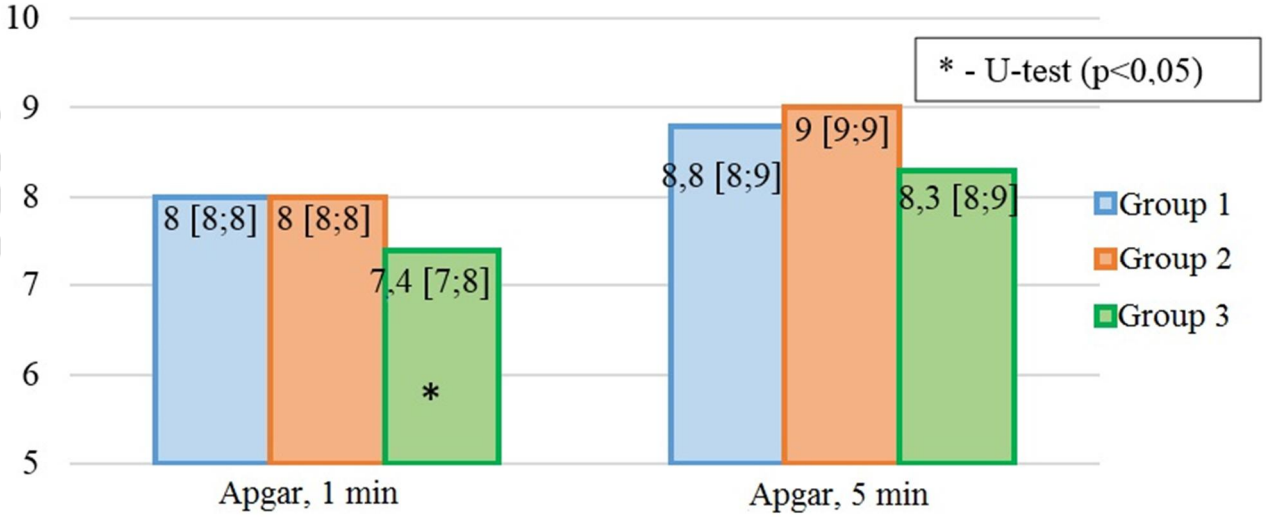

Figure 3 – Newborns' indicators

Also in Group 3 in 5 cases labors resulted in caesarean section; were revealed a weakening of labor (n = 4), signs of fetal hypoxia (n = 3); fetal depression (n = 1).

Summary: we can make following conclusions. First, spinal anesthesia with low doses of bupivacaine promotes comfortable labor without providing negative impact on woman and fetus and don't increase risk of complications. Second, use of obstetric sleep may cause the weakening of labor and fetal depression.

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