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## THE EFFECT OF ANESTHESIOLOGICAL AID ON THE CONDITION OF THE NEWBORNS EXTRACTED BY CESAREAN SECTION IN MOTHERS WITH MARKED MITRAL STENOSIS (MS)

A comparative assessment of the condition of newborns extracted by caesarean section from mothers with severe MS against the background of traditional HMA and combined anesthesia based on BE due to low concentrations of local anesthetics was carried out.

**Keywords:** condition, of newborns caesarean section severe mitral stenosis general anesthesia.

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## ВЛИЯНИЕ АНЕСТЕЗИОЛОГИЧЕСКОЙ ПОМОЩИ НА СОСТОЯНИЕ НОВОРОЖДЕННЫХ, ИЗВЛЕЧЕННЫХ ПУТЕМ КЕСАРЕВА СЕЧЕНИЯ У МАТЕРЕЙ С ВЫРАЖЕННЫМ МИТРАЛЬНЫМ СТЕНОЗОМ

### АННОТАЦИЯ

Проведена сравнительная оценка состояния новорожденных, извлеченных путем кесарева сечения, у матерей с выраженным РС на фоне традиционной ГМА и комбинированной анестезии на основе БЭ за счет пониженных концентраций местных анестетиков.

**Ключевые слова:** состояние, кесарево сечение, новорожденные, тяжелый митральный стеноз, общая анестезия

**The aim of the research:** Comparative assessment of the condition of newborns extracted by cesarean section in mothers with marked MS on the background of traditional GMA and combined anesthesia on EB base by decreased concentrations of local anesthetics.

**Materials and methods of the research.** For the comparative analysis of the early adaptation period, 38 histories of the development of the newborns extracted

by CS in mother with marked MS (1.9-1.1 cm<sup>2</sup>), have been analyzed, Depending on the type of anesthesia, all newborns were divided into 2 groups. 19 children extracted under the conditions of combined anesthesia (CA) on the background of epidural blockade by means of decreased concentrations of local anesthetics were included into the 1st group and the same number of children extracted under GMA conditions with AVL were included into the 2nd group. We have also analyzed 38



anestheological maps and histories of deliveries by means of CS in maternity complex of Samarkand Medical Institute clinic №.1 (Samarkand), AC RSSPMCOY A and G (Tashkent).

Both groups of mothers were identical according to gestation terms (33-35 weeks), character of operative intervention, degree of MS evidence (1.9-1.1 cm<sup>2</sup>), physical status of parturient women, frequency and evidence of extragenital diseases, starting level of uterine fetoplacental blood flow. The condition of premature newborns at birth was estimated by means of Apgar score during the 1st and 5th minutes of life [12], NACS score [3] and the V.A. Bushtyrev's in score an hour and 24 hours after birth [3]. The course of early postnatal adaptation of newborns was estimated by mathematical analysis of cardiac rhythm by means of cardiointervalography, along with this the index of tension (TI) was determined in 5 minutes and 24 hours after birth [1,11], concentration of total cortisol (CS) was determined in umbilical cord blood by means of immunochemiluminescent analysis (IChLA) (analyzer MAGLUMI600 ShibeCoL-TD China) in 5 minutes after birth. Efficiency of self-breathing was evaluated according to saturation of oxygen SpO<sub>2</sub> (monitor Triton-Russia), in 2 and 24 hours after birth. Statistic processing of the obtained results was carried out by means of

variation statistics with definition of the criteria of reliability distinction according to Student by means of Microsoft Excel program.

**Results and their discussion.** As it can be seen from the table, all newborns had the weight of the body less than 2000 gr, at birth that corresponded to gestational terms in delivery and criteria of prematurity. Assessment according to Apgar score made 5.9±0.4 during the 1<sup>st</sup>-minute in the first group of the newborns and in the second 5.4±0.1. In 5 minutes after birth arithmetical mean data of Apgar scale reliably increased in both studied groups and made 7.2 ± 0.2 score and 6.7±2 scores accordingly. Reliably higher score in the group of children extracted in conditions of GKA with AVL (table), is of particular attention. In analysis of the results of psychoneurological picture of newborns adaptation according to NACS scale in 2 hours after birth the best results were registered in the first group of children born under the conditions of CA on the basis of epidural block, their average score made 30.2 ± 0.3, while in the second group of the newborns it only made 28.6 ± 0.2 scores that had statistically reliable difference. 24 hours later absolute arithmetic mean values data relative to previous stage of study in both groups reliably increased. Along with this Reliable intergroup differences were not registered.

**Some indices characterizing the newborns condition in early adaptive period (M ± m)**

Studied indicators	Anesthesia method	
	GCA with IVL	GMA with mechanical ventilation
Gestation period, weeks	33,2 ± 0,4	33,4 ± 0,6
Weight at birth, gramess	1905,6 ± 30,6	1894,8 ± 32,8
Scale according to Apgar assessment (scores)		
1 minute	5,9 ± 0,1 *	5,4 ± 0,1 *
5 minutes later	7,2 ± 0,2 *	6,7 ± 0,2 * Δ
NACS scale (scores)		
2 hours after birth	30,20 ± 0,3 *	28,6 ± 0,2 *
24 hours after birth	35,7 ± 0,5 Δ	35,4 ± 0,3Δ
Stress index (conv.units)		
2 hours after birth	1432,6 ± 50,4 *	1935,6 ± 80,4 *
24 hours after birth	730,8 ± 22,8 Δ	796,8 ± 20,2 Δ
Total cortisol, nmol / l		
5 minutes after birth	591,8 ± 35,6 *	338,6 ± 22,4 *
Oxygen saturation,%		
2 hours after birth	92,9 ± 0,1 *	91,2 ± 0,1 *
24 hours after birth	96,3 ± 0,2 Δ	96,4 ± 0,3 Δ

**Note:** Δ - statistically significant differences (p <0.05) relative to the previous stage of the study; \* - intergroup statistically significant differences.

As can be seen from the table: ID at the 5th minute after birth significantly exceeded the upper limits of the "stress norm", while making up 1432.6 ± 50.4 conventional units in the 1st group of children, and 1935.6 ± 80.4 units, in the second group reflecting the extreme degree of tension of the sympathetic division of the ANS and regulatory systems of the heart rhythm, which significantly less marked in newborns extracted under SA conditions on the basis of EB 24 hours after birth, IN in both studied groups significantly decreased, amounting to 731.8 ± 22.8 conv units.in the 1st group of newborns, respectively, and in the second 796.8 ± 20.2 conventional

units, which testifies to the persistence of quite marked disturbances of the regulatory systems of the heart rhythm and sympathoadrenal mechanisms of its regulation. The concentration of CC in the umbilical cord blood at the 5th minute after birth in children of the 1st group was significantly higher (591.8 ± 35.6 nmol / L) in comparison with the 2nd group of newborns (338.6 ± 22.4 nmol / l), which indicates a more intact and more active physiological response of the hypothalamic-pituitary-adrenal system to the birth process in newborns extracted under conditions with CA based on EB. A lower concentration of SC in the group of children extracted

under GMA with AVL (group 2) indicates inhibition of the functional state of the hypothalamic-pituitary-adrenal system, which is a consequence of the stress response of the mother's body to general anesthesia and drug load. In 2 hours after birth, SpO<sub>2</sub> in newborns of the 1st group was  $92.9 \pm 0.05\%$ , and in the 2nd group -  $91.2 \pm 0.1\%$ , which characterizes a marked depression of the respiratory function, which had to be corrected by oxygen therapy. In 24 hours after birth, in the process of carrying out post-syndromic intensive therapeutic measures, SpO<sub>2</sub> in both studied groups significantly increased to  $96.3 \pm 0.2\%$  and  $96.4 \pm 0.3\%$ , respectively.

**Conclusions** The studies which carried out made it possible to state a less marked negative effect of YCA

with mechanical ventilation on the basis of epidural blockade with reduced concentrations of local anesthetics on newborns. Under the conditions based on the use of epidural blockade, the adaptive capabilities of the organism of newborns are preserved to a greater extent during the period of early adaptation to extrauterine conditions, despite the extremely unfavorable initial background prematurity, DBC and a marked decrease in the coronary reserves of the mother, associated with severe stenosis of the atrioventricular opening ( $1.9-1.0 \text{ cm}^2$ ). The results obtained make it possible to recommend CA based on epidural block with the use of reduced concentrations of local anesthetics for delivery by cesarean section in pregnant with severe mitral stenosis.

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