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Changes in Psychomotor Development in Children with Perinatal Brain Hypoxia

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Introduction

In the structure of children's disability, perinatal lesions of the nervous system (PPNS) account for about 50%, and pathologies of the nervous system – 70% of cases, perinatal factors caused disability in children [1; 3]. Brain damage associated with cerebral hypoxia occurs in 48% of newborns. In fetal and newborn asphyxia, the frequency of brain damage is 20-40%, and in children born with low body weight, it reaches 60-70 % [2; 4].

Damage to the developing brain is the most common pathology of the central nervous system in children, which mainly determines the development of such serious conditions as resistant epilepsy, behavioral disorders, problems of school adaptation [4].

High perinatal mortality is caused by perinatal pathology: 75% of intrauterine deaths are associated with gross malformations of the central nervous system, and among children who die in the first year of life, 40 % have at least one brain malformation.

The aim is to trace the dynamics of psychomotor development of newborns with perinatal damage to the nervous system.

Materials and methods

The study was based on a clinical and laboratory examination of 161 newborns with hypoxic PPNS. Base of the study: Department of neurology and neurosurgery of the Samarkand state medical Institute, Department of pediatric neurology and the maternity unit of the 1st clinic of Sammi, the Department of resuscitation and intensive therapy of the 2nd Sammi clinic,

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Samarkand regional branch of the Republican center for social adaptation of children. 300 children with PPNS of various symptoms and clinical manifestations were examined, 127 children with PPNS of hypoxic origin were selected. The obtained data were subjected to statistical processing using a standard application software package using built-in statistical processing functions. During statistical processing, the initial array of clinical data was necessarily checked for compliance with the law of normal distribution, the standard error of the mean (m), relative values (frequency, %), and the statistical significance of the measurements obtained during comparison. Average values were determined by student's criterion (t) by calculating the probability of error (p) when checking the normality of the distribution (the criterion exceedances) and total equality of variance (F – Fisher test). In addition to the initial data, we used methods of variational parametric and nonparametric statistics with the calculation of the arithmetic mean of the studied indicator (M), standard deviation. For a more accurate assessment of the mental state and motor disorders in children in the groups, they were evaluated on the DDST scale in dynamics 4 times a year during the follow-up period. The test allows you to identify early signs of a child's developmental disorder, as well as accurately determine the degree of its severity (severe or moderate), evaluate the effectiveness of rehabilitation measures and determine the dynamics of the formation of CPD indicators.

The study of motor skills begins with the assessment of general movements. According to our DDST scale, general motor skills are evaluated from the first days of life. In the patients we examined, general movements were studied from the age of 3 months. It turned out that they were most unsatisfactorily formed in comparison with other indicators of the NPR after 3 months.

Discussion of the results. Only 44.6% of children at 3 months had normal development of large motor skills. Also, after 6 months, a low level of general movements was noted. After 6 months and up to a year, there was a stable improvement in the formation of large motor skills. According to the results of this test, gross motor skills were assessed as " normal "in 14.8% and" suspicious " in 72.8% of patients with central nervous system PN at birth, by 3 months. the impairment decreased to 19.8%. Compared to the baseline level (at 1 month), the age periods from 6 months to a year were productive in the formation of large motor skills, when there was a significant increase in the value of large motor skills products. By year 1, 91% of patients had a normal level of development of general movements (Table 1).

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Table 1. Dynamics of the assessment of the development of mental and motor development on the DDST scale at birth

		At birth			
Stage		1	2	3	4
mild disease (81)	A	59 (72,8)	-	-	-
	B	12 (14,8)	-	-	-
	C	12 (12,4)	-	-	-
moderate disease (65)	A	50 (76,9)	-	-	-
	B	10 (15,4)	-	-	-
	C	5 (7,7)	-	-	-
severe degree (15)	A	12 (80,0)	-	-	-
	B	1 (6,7)	-	-	-
	C	2 (13,3)	-	-	-

Note: 1 – large motor skills; 2-small motor skills; 3-social adaptation; 4-speech development; test results: A - "suspicious"; B – "normal"; C - "untested".

Fine motor skills on this scale, we evaluated 3 months of age and at 6 months of age were identified skills such as hand movements and actions with objects in 9 - and 12-month age – actions with objects, play and action items necessary to determine the skills of dynamic observation. At 3 months of age, fine motor skills were better developed than coarse motor skills, so in 61.0% of patients, fine motor skills corresponded to age norms. Only at the age of 6 to 9 months, there was a significant increase in this level of development of fine motor skills. By the year of life, the indicator of the development of hand movements improved.

Table 2. Dynamics of the assessment of the development of mental and motor development on the DDST scale after 3 months

		3 months			
Stage		1	2	3	4
mild disease (81)	A	16 (19,8)	18 (22,2)	27(33,3)	17(21,0)
	B	56 (69,1)	54 (66,7)	45(55,6)	55(67,9)
	C	9 (11,1)	9 (11,1)	9 (11,1)	9 (11,1)
moderate disease (65)	A	40 (61,5)	27 (41,5)	46(70,7)	53(81,5)
	B	21 (32,3)	34 (52,3)	15(23,1)	8 (12,3)
	C	4 (6,2)	4 (6,2)	4 (6,2)	4 (6,2)

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severe degree (15)	A	11 (73,3)	9 (60,0)	11(73,3)	9 (60,0)
	B	3 (20,0)	5 (33,3)	3 (20,0)	5 (33,3)
	C	1 (6,7)	1 (6,7)	1 (6,7)	1 (6,7)

Note: 1 – large motor skills; 2-small motor skills; 3-social adaptation; 4-speech development; test results: A - "suspicious"; B – "normal"; C - "untested".

Psychoverbal sphere on a scale of DDST is evaluated using metrics such as "speech understanding" and "active voice." The assessment of speech perception and comprehension was carried out on a scale from 4 months to 1 year. The study of active speech on this scale began at the age of 6 months. In the examined patients at the age of 6 months, active speech met the age requirements in 82.0 % of cases. Speech comprehension and active speech indicators are closely related. In the patients we examined, it was noted that the formation of active speech did not depend on the formation of understood speech. The lack of speech comprehension in the subjects probably affected the development of certain skills, such as sensory development, constructiveness, visual activity, and social adaptation.

For a full assessment of the NPR, it is necessary to study the indicator of the child's "social behavior". 73.1 % of the studied patients with MG, according to their parents, according to the teacher's assessment, did not experience difficulties in "social behavior".

Thus, in children who underwent central nervous system PP, significant disorders were observed in the PPD, especially taking into account their total number (91.5 %). In 41 of 45 (91.1 %) children, the level of development of general movements met the requirements of the scale.

In the dynamics after standard therapy and continuous complex rehabilitation in the FTSADF, and in particular reflex locomotion according to Voit, the DDST index by 12 months of age in patients with OG had a positive trend, in large motor skills the results were "normal". Speech development and small motorised activity – 85.2% and 87.7 % of the norm. But in 11.1% of patients, the tests were unsuccessful, and the result was "unconfirmed". In patients with grade II PN of the central nervous system by 12 months. the results were somewhat different: when assessing the development of large motor skills in 7.7% of cases, they remained "suspicious", when assessing the development of speech – in 4.6% of cases, and small motor skills – in 9.2%. Positive results were observed in patients with severe central nervous system PP by the age of 12 months after prolonged rehabilitation tactics.

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CONCLUSION

Based on the above, therapeutic measures carried out for newborns during treatment and their management at the stages of rehabilitation should be individualized depending on the degree of brain damage during the recovery period. By the age of one year, adult children with the appearance of verticalization and speech functions were sent to social and psychological rehabilitation. In children with residual organic phenomena, the most serious and severe outcomes were cerebral palsy and epilepsy, which require long and careful monitoring not only by neurologists, but also by psychologists, sociologists and teachers for their adaptation. to a life in rehabilitation.

LITERATURE

1. Isanova S., Abdullayeva N., Djurabekova A. CHARACTERISTIC OF NEUROLOGICAL CHANGES IN OVERWEIGHT ADOLESCENTS //InterConf. – 2020.
2. Niyazov S. T. Djurabekova A. T., Igamova S. S. Morphological study of rat brain in the experiment with chronic encephalitis under the action of ozonized neuroprotectors //European Science Review. – 2018. – №. 3-4. – P. 179-185.
3. Saodat I. D. Aziza Aziza B. Changes in Psychomotor Development in Children with Perinatal Brain Hypoxia //International Journal of Human Computing Studies. – 2020. – T. 2. no. 5. – P. 11-14.
4. Suratovna S. I., Taxirovna A.D. CHANGES OF PSYCHOMOTOR DEVELOPMENT IN CHILDREN WITH PERINATAL BRAIN HYPOXIA / / Journal of Neurology and Neurosurgical Research. - 2020. - Vol. 3. - no. 1.
5. Azizova R. B., Abdullayeva N. N., Usmonaliev I. I. Changes in higher cognitive functions in patients with epilepsy //Questions of science and education. – 2019. – №. 28 (77).
6. Kim O., Jurabekova A. COMPARATIVE ASPECT OF ETIOPATHOGENESIS OF ISCHEMIC STROKE AT A YOUNG AGE / / InterConf. – 2020.
7. Niezov Sh. T. et al. Features of the course and complications of secondary meningoencephalitis in children / / Re-health journal. – 2020. – №. 2-3 (6).
8. Shojalilov I. Sh. et al. COGNITIVE AND MOTOR DISORDERS IN PATIENTS WITH A CONSEQUENCE OF CRANIOCEREBRAL TRAUMA //Achievements of science and education. – 2019. – №. 13 (54).
9. Yuldasheva D. S. K. et al. Therapeutic effect on the cognitive functions of patients in the early period of ischemic stroke //Achievements of science and education. – 2020. – №. 3 (57).
10. Yusupov A.M., Dzhurabekova A. T., Gaibiev A. A. DIAGNOSTIC CRITERIA OF ACUTE POLYNEUROPATHY IN CHILDREN //Achievements of science and education. – 2019. – №. 13 (54).