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THE NATURE OF THE RELATIONSHIP BETWEEN SOME HEALTH INDICATORS IN INFANTS

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Abstract:

Rehabilitation measures in such children are carried out according to standard schemes; there is no data on the prenosological diagnosis of changes, on the peculiarities of the course of nosological forms and their correction. This approach leads to an aggravation of the morbidity of these children and to the disability of adults, determining the social and economic costs. The aim of the study was to assess the relationship between health indicators in infants born with mild intrauterine hypo plastic type development delay, compared with infants born without ASD, and with practically healthy infants from practically healthy mothers.

Keywords: infants, socio-psychological adaptation, relaxation ability

The diagnosis of "fetal growth retardation" was initially made by gynecologists, and subsequently the diagnosis of "intrauterine growth retardation" was confirmed by neonatologists. All children born with mild hypoplastic type IHD had a body weight and body length below the P3 percentile (less than the 2nd standard deviation) compared with those due for gestational age (the gestation period at which the child was born). The inclusion of infants in the observation groups occurred in parallel from the moment of birth.

3 groups of children were under observation from the moment of birth in the dynamics of the first year of life:

Group 1 — children from mothers with a burdened somatic and obstetric-gynecological history, including those with mild hypoplastic fetal growth retardation;

Group 2 — children from mothers with a burdened somatic and obstetric-gynecological history, but without fetal growth retardation;

Group 3 — practically healthy children born from practically healthy mothers in the outcome of physiologically occurring pregnancies.

In this age period of growth and development of the organism in children of the 1st and 2nd groups, a correlation was proved only between body length in centimeters and atrioventricular conduction (width of the interval PQ, s) (Tables 3-5). In children of the 1st and 3rd groups, a correlation was proved only between sympathetic activity (mode amplitude, conl. units) and electrical systole (width QT interval, c), stress index and intraventricular conduction (width of the QRS complex, c), atrial conduction (width of the P wave, c) and atrioventricular conduction (width of the PQ interval, c). In other cases, other correlations between the analyzed health indicators were proved in children of the 2nd and 3rd groups.

Such children are subject to school maladaptation, hyperactivity, increased levels of anxiety and fears. At the same time, there is no compensation for maladaptive disorders with age, which aggravates the process of socio-psychological adaptation, affects the psychological health of the individual [1]. The change in the somatic and psychological health of an individual is closely related to the quality of life. Researchers have proved that adolescents born with ASD have a decrease in physical, mental and social functioning, which increases the risk of developing disorders of socio-psychological adaptation, neurotic disorders, and addictive behavior. These children have significantly reduced levels of physical activity and daily life, mental health and social adaptation. Undoubtedly, changes in somatic and mental health affect the quality of life and, in general, the overall health of the individual's body.

The diagnosis of fetal growth retardation was initially made by gynecologists, and subsequently the diagnosis of intrauterine growth retardation (IVD) was confirmed by neonatologists, which is documented. All newborns with diagnosed ASD had body mass indices below the percentile P (less than the 2nd standard deviation) compared with the one due for gestational age (that is, the gestation period at which the child was born). All newborns with mild hypotrophic type IHD had a body weight in the range of P10-P3 percentiles (1.5-2 standard deviations) with normal or moderately reduced body length relative to the gestation period. All newborns with mild hypoplastic type IHD had a body weight and length below the P3

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percentile (less than the 2nd standard deviation) relative to the gestation period.

There was no shift in time intervals during the study. No medical interventions were planned. Participation in the study was terminated at the voluntary request of legal representatives and at the end of the planned observation period. There are no specific factors that can affect the external generalizability of the study's conclusions.

The delay in intrauterine development, even of mild severity of hypoplastic and hypotrophic types, determines changes in body length and the dynamics of its growth in infants, which should be taken into account by doctors when carrying out dispensary monitoring for timely detection of possible violations in the long-term period in order to resolve the issue of the expediency of corrective measures.

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A randomized controlled comparative prospective cohort study was conducted. The inclusion of infants in groups occurred in parallel, from birth. The criteria for inclusion of study participants in the compared groups were the presence of a physiologically occurring pregnancy and complicated pregnancy, including with and without fetal growth retardation, as well as the presence of voluntary informed consent. The criterion for non-inclusion of study participants was fetal growth retardation due to hereditary and infectious factors. The criterion for excluding the study participants was the voluntary refusal of legal representatives.

A change in the ratio of the phases of filling of the left ventricle indicates a violation of the relaxation ability of the myocardium. Changes in intracardiac hemodynamics have a negative effect on systemic blood flow, contributing to a decrease in blood supply to organs and tissues, causing an aggravation of hypoxic changes. It should be noted that a violation of the relaxation ability of the myocardium in combination with a change in intracardiac blood flow can lead to deterioration in the blood supply to the myocardium.

Defects of the interventricular septum were not detected in any of the children. This is possible, since in the early neonatal period of life they were detected mainly in the muscular part of the interventricular septum. One child with atrial and interventricular septum defects was successfully operated on. The frequency of functioning atrial communication in dynamics decreased to 15.39%.

Birth weight has a significant impact on the frequency of complications of the early neonatal period. Thus, newborns with OCD are more often diagnosed with asphyxia at birth, meconial aspiration, hypothermia, symptomatic hypoglycemia, neurological status disorders (general lethargy of the newborn, sleep disorders, decreased or absence of sucking, less often swallowing reflexes, decreased appetite, persistent regurgitation, decreased muscle tone and unconditional congenital reflexes). Hypoxic-ischemic damage of the central nervous system in the form of a long-lasting syndrome of cerebral depression, increased neuro-reflex excitability, and hypertension syndrome is significantly more common in newborns with STD [2].

Newborns with prenatal hypotrophy are born with pronounced metabolic disorders (hypoproteinemia, hypoglycemia, lipidemia, hypocalcemia), reduced function of enzyme systems, impaired water and bilirubin metabolism, changes in the acid-base state of the blood, the function of the pituitary-thyroid system, more often in the form of transient hypothyroidism. In the studies of L. A. Bakhmutova (2009) found that prolonged production of antenatal types of hemoglobin — fetal and embryonic - is characteristic of full-term newborns with OCD and reflects the severity of chronic hypoxemia. This is due to a compensatory increase in the concentration of fetal hemoglobin, a slow rate of replacement of fetal hemoglobin with adult hemoglobin.

In children with OCD, smaller values of the diastolic diameter of the right ventricular cavity, the left atrium cavity and the thickness of the interventricular septum are observed. In addition, in such children in the early neonatal period, there is a strain of compensatory and supportive mechanisms of cardiovascular adaptation, which is manifested by arterial hypertension, lability of blood pressure, high peripheral vascular resistance, insufficiently adequate reaction of the precapillary bed to the value of the minute volume of blood flow. The study of hemodynamics revealed that half of the children with OCD had a hypokinetic type of hemodynamics, whereas the majority of healthy children had a normokinetic type. An increase in specific peripheral resistance, a decrease in shock volume due to a decrease in the final diastolic and final systolic volumes was noted in newborns with ZRP. Along with this, there was a decrease in the contractility of the left ventricle. There was a tendency to increase the activity of the cardiac fraction of creatine kinase in children with OCD. Comparison of hemodynamic parameters with the results of the enzyme activity study showed that its activity correlated with a decrease in the

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contractility of the left ventricular myocardium, which may be due to cardiomyocyte damage.

It has been revealed that the safety margin and resistance to the effects of ante- and intranatal pathological factors inherent in the central nervous system of the fetus and newborn child, which determines the search for optimal solutions to ensure the vital activity and stability of homeostatic processes, sharply decreases with ZRP. Observation of children with ZPR during the year showed that 83% of them were registered with a neurologist. The predominant clinical manifestations were the syndrome of pyramidal insufficiency, motor disorders, neuro-reflex excitability, hypertension and astheno-neurotic syndromes.

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