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DIAGNOSIS OF CARDIOVASCULAR SYSTEM DISORDERS IN PERINATAL LESION OF THE CENTRAL NERVOUS SYSTEM IN A NEWBORN

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Abstract: Identification of cardiovascular system disorders due to damage to the central nervous system in newborns. This article contains more information!

Key words: newborn, central nervous system, identification of disorders of the cardiovascular system, diagnosis.

Features of the structure of the nervous system of a newborn.

A baby differs from an adult not only in appearance, but also in the structure of his body, since not all systems and organs are fully formed. During the formation of the child's brain, unconditioned reflexes are expressed. Immediately after birth, the level of substances that regulate the activity of hormones in the digestive system. However, all receptors are already well developed.

Causes of pathology of the central nervous system

The causes and consequences of central nervous system damage in newborns can be very different. The main factors that lead to dysfunction of the nervous system:

lack of oxygen or hypoxia;

birth injury;

disruption of normal metabolism;

infectious diseases of a pregnant mother suffered during pregnancy.

Lack of oxygen or hypoxia occurs when a pregnant woman works in hazardous industries, with infectious diseases, smoking, or previous abortions. All this disrupts general blood circulation, as well as oxygen saturation of the blood, and the fetus receives oxygen along with the mother's blood.

Birth injuries are one of the factors leading to damage to the nervous system, since any injury can lead to disruption of the maturity and subsequent development of the central nervous system.

Disturbances in normal metabolism occur for the same reasons as shortness of breath. Drug addiction and alcoholism of the expectant mother also lead to dysmetabolic diseases. In addition, the use of potent drugs can affect the nervous system.

Infectious diseases, which can be very serious for the fetus, are the suffering of a pregnant mother during pregnancy. Among such infections, herpes and rubella should be highlighted. In addition, absolutely any pathogenic microbes and bacteria can provoke irreversible negative processes in the child's body. Most nervous system problems occur in premature babies.

Periods of CNS pathologies

Damage to the nervous system and depression syndrome combine several pathological conditions that occur during fetal development, during labor, and also in the first hours of a child's life. Despite the presence of many predisposing factors, there are only 3 stages of the disease, namely:

bitter;

restorative;

the result of the disease.

CNS lesions in newborns have different clinical manifestations in each period. In addition, children may experience a combination of several different syndromes. The severity of each occurring syndrome makes it possible to determine the degree of damage to the nervous system.

Materials and methods of research: 120 newborns were examined, divided into Group III: Group I 50 newborns with functional changes in the cardiovascular system (CVS), moderate perinatal lesions of the central nervous system (CNS), Group II included. 40 newborns with severe perinatal damage to the central nervous system with functional changes in the cardiovascular system. The control group consisted of 30 healthy newborns. Electrocardiographic (ECG), echocardiographic (EchoCG) and neurosonographic (NSG) studies were performed. Statistical processing of the results was carried out by

calculating the arithmetic mean (M), error of the arithmetic mean (m), Student's t-test (t). A P value of <0.05 was taken as the statistically significant limit.

Cardiovascular disorders in newborns.

if during pregnancy the woman is over 35 years old and the father is over 45 years old;

abuse of alcohol or drugs by the mother, exposure to toxins on the body of a pregnant woman;

collapse of normal metabolism of female substances or diabetes mellitus;

medications that can cause these complications and should not be taken during pregnancy.

What pathologies of the cardiovascular system are congenital?

If the artery is completely open, there are abnormalities in the formation of the precordial or interventricular septum. Such anomalies should be classified as a group of white defects that can occur in newborns.

There is a large displacement of blood vessels or several deviations from the norm in the structure of the heart: stenosis of the right ventricle, displacement of the aorta, there are obvious defects in the septum between the ventricles. These pathologies are classified in the blue group.

Aortic stenosis occurs and causes problems with the pulmonary artery and complete blood flow, in which the pathology is shunted.

The big plus is that the presence of heart pathologies can be detected both during pregnancy and before the birth of the child, so the first attempts to treat the problem can be made. However, if a blue heart occurs, surgery cannot be ruled out.

Results and its discussion. A comparative analysis of ECG data from the study showed that a significant difference compared with groups I and II was 6.0±4.0% for sinus tachycardia in group I and 20.0±6.3% in group II (R<0.05), observed at the level of cases of sinus tachycardia. right ventricular overload was 8.0 ± 3.8% and 22.5 ± 6.6% (P < 0.05). However, sinus bradycardia was 4.0±2.8% in group I and 12.5±5.2% (P>0.5) in group II, extrasystole 2.0±2.0% and 5.0±3 respectively. %. (P>0.5), slowing of intraventricular permeability 6.0±3.4% and 17.5±6.0% (P>0.1), non-blockade 20.0±5.7% and 35.0± 7.5% (P>0.1)), left ventricle 6.0±, respectively 3.4% and 17. Overload at the level of 5±6.0% (P>0.1). Analysis of echocardiography studies showed that according to end-systolic measurements in the control group - 1.30±0.2 cm and in group II - 0.85±0.11 cm (P<0.05) and between ejection fractions. 71.44 ± 6.84% and 65.16 ± 4.21% (P < 0.05) of patients, respectively. However, the final systolic size was 1.30±0.2 cm and 0.93±0.04 cm (P>0.1), and the ejection fraction was 71.44±6.84% and 67.72±6, respectively. 12% (P>0.5) showed no significance. . between the control and group I patients, respectively. Last systolic volume was 4.02 ± 0.26 ml in the control group, 3.24 ± 0.34 ml (P < 0.05) in the first group and 3.14 ± 0.23 ml (P <) in the second group (0, 01), which was the end-diastolic volume. 1.93+0.14 cm in the control group, 1.50+0.21 cm in the first group (P>0.1) and 1.48+0.33 cm (P>0.5) in the second group, end-diastolic volume in the control group was 11.9±0.46 ml. . , 7.63 ± 1.26 ml (P < 0.05) in the first group and 6.58 ± 1.47 ml (P < 0.01) in the second group and 7.89 ± 1.03 ml in the

control group , in the first group 5.14 ± 0.68 ml (P) <0.05) and in the second group 5.09 ± 0.74 ml (P <0.05), the minute volume of controlled blood was 1.06 ± 0 .05 l/min, in the first group 0.86 ± 0.06 l/min (P < 0.05) and 0.77 ± 0.09 l. /min (R<0.05) The rate of decrease in the second group was 38.60±5.12% in the control group, 37.94±4.21% (R>0.5) in the first group and 36.23± 3.87% (P>0.5). second group.

Results. End-systolic, end-diastolic indicators, stroke and minute blood volumes, indicators of end-systolic volume and blood ejection fraction significantly differ in patients with perinatal CNS damage depending on the severity of the disease, which allows them to be recommended for diagnosis of cardiovascular diseases. do. determine the severity of disorders and diseases.

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