

# STATE OF NEUROLOGICAL SYMPTOMS IN NEWBORNS WITH HEMORRHAGIC DISEASE

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**Abstract.** The aim of the study was to study the significance of risk factors for the formation of hemorrhagic disease of the newborn and the course of the disease to improve the organization of disease prevention.

Case histories and results of clinical and anamnestic examinations were studied in 38 newborns with hemorrhagic disease, hospitalized in the neonatology department during the last three years. Diagnosis of the disease was carried out on the basis of a detailed study of the anamnesis and clinical, laboratory and instrumental parameters (platelet count, coagulogram, ultrasound and neurosonography).

It was revealed that vitamin K deficiency leads to the development of hemorrhagic disease of the newborn due to the influence of adverse factors from the mother (preeclampsia, medication during pregnancy, operative delivery), and the child (prematurity), which requires enhanced dispensary monitoring of a pregnant woman, early identification of risk factors to a newborn.

**Key words.** newborn, hemorrhagic disease of the newborn (HRD), neurological symptoms.

**Introduction.** The development of hemorrhagic syndrome in newborns is associated with severe complications, serious health disorders and a decrease in survival rates [2]. The problem of bleeding, especially latent forms, remains an urgent issue in pediatrics, since blood coagulation disorders in children are now quite common, which is associated with the peculiarities of the hemostasis system in children [4]. Normative values of hemostasis indicators in newborns and children of the first months of life differ from the values of adults and are subject to significant changes immediately after birth. In almost all healthy full-term newborns in the first 5 days of life, there is a decrease in the level of procoagulants, physiological anticoagulants and plasminogen [1.3]. In newborns and premature infants, the hypocoagulation orientation of the plasma-coagulation link of hemostasis is determined against the background of an increase in intravascular coagulation and fibrinolysis activity [5.6]. For the hemorrhagic syndrome newborn, the elongation of the prothrombin time is characterized against the background of a normal level of platelets and fibrinogen [7].

Recently, there has been an increase in cases of hemorrhagic syndrome in children, which often proceeds according to the type of hemorrhagic disease of newborns [1] and is manifested by various clinical symptoms. In this regard, for the diagnosis of intracranial hemorrhages in hemorrhagic disease, we studied the data of obstetric history, information about the course of childbirth, analyzed the data of neurological and special examination methods. One of the features of the examination of the newborn is the absence of such a reference moment as complaints. With the joint stay of the mother and the newborn, it was possible to look at the child through the eyes of the mother and assess from her position the changes taking place in the condition and behavior of the newborn. Disadvantage of information on the dynamics of the state of the newborn compensation special combination nurses, which, providing continuity in monitoring and mother-firm, register in the dynamics of the parameters that are interested in-neonatologist.

**Methods.** We studied the history of the disease and the results of the survey 38 newborn with intracranial hemorrhages, due hemorrhagic disease, who were the department of neonatology and the resuscitation of the newborn in the period from 2021 to 2023.

To achieve this goal, we have developed a special map for nurses to monitor the condition of the newborn, which is based on the history of the development of the newborn.

Diagnosis was carried out on the basis of data from a detailed study of anamnesis, clinical, laboratory and instrumental indicators (platelet count, coagulogram, ultrasound,

KT and neurosonography).

All cases accompanied by impaired consciousness and / or convulsions in a newborn were regarded by us as cerebral circulation disorders. The main indicator for assessing the severity of the child's condition, we considered the level of consciousness at admission.

The state of hemostasis was studied by the duration of bleeding, prothrombin time and prothrombin index.

Ultrasound diagnosis of brain lesions was carried out by a one-dimensional method of echolocation sequentially on both sides, before which, during the examination, asymmetries and deformations of the skull, defects of the cranial bones were detected (excluded), the condition of sutures and fontanelles, the presence of cephalohematomas and generic tumors were determined.

To detect, localize and volume of intracranial hemorrhages, all children used the computer tomography of the brain and neurosonography.

When performing KT scans of the brain, the size and volume of the intracerebral hematoma, the transverse dislocation of the median structures of the brain were measured. The deformation and filling with blood of the basal and enveloping cisterns, the subarachnoid space, the magnitude of the lateral displacement of the IV ventricle were evaluated. The presence of foci of increased density in the ventricles of the brain was determined to assess the degree of their filling with blood clots, the severity of internal hydrocephalus by the degree of expansion of the ventricles in comparison with normal gestational indicators.

Results. Neurological disorders were determined by the following etiological groups: hypoxic, traumatic, toxico-metabolic, infectious and combined.

Analysis of studies showed that all newborn patients were from rural areas: 13-34.2% of patients - residents of Kashkadarya region, 10-26.3% of newborns - from Kushrabad district, 7-18.4% from Samarkand region, 8-21.1% of children - from other regions.

Newborn girls (26-68.4%) were hospitalized in the hospital 2.2 times more often than boys (12-31.6%). In the spring season (from March to May), patients with hemorrhagic disease of newborns received almost twice (1.9 times) more than in the winter months (respectively 25-65.8% and 13-34.2%), which may have been due to poor nutrition of the mother in the cold season.

Clinical and anamnestic characteristics of the perinatal period of newborns with hemorrhagic disease are presented in Table 1.

**Table-1**

**General characteristics of perinatal period (n= 38)**

Indicator	The frequency of	
	N	%
Reception of the antique carrier	4	10,5
Preeclampsia	7	18,4
Mother's Disciose	13	34,2
Cesarean section	5	13,2
Prematurity	4	10,5
Asphyxia in the genus	5	13,2
Sko-hemorrhagic syndrome	5	13,2
Gastrointestinal bleeding:	10	26,3
Croving vomiting	4	10,5
Melun	6	15,8
Generic injury	3	7,9
Cephalohematoma	3	7,9
Intracranial hemorrhage	3	7,9
Hemorrhagic shock	1	2,6

A complex of neurological symptoms indicating the immaturity of the central nervous system was detected in the newborns examined by us in the presence of indications of an unfavorable course of pregnancy, as well as if the newborn had a decrease in spontaneous motor activity, muscle hypotension and hyporeflexia, small and inconstant tremor of the limbs and chin, mild athetosis, mild and inconstant strabismus, small and inconstant horizontal nystagmus. These diffuse neurological disorders persisted until 2-3 weeks of age in 20-52.6% of the newborns examined, and in the rest - more than the specified period.

Among the neurological disorders that occurred in newborns with intracranial hemorrhages caused by hemorrhagic disease, the following were found:

- motor disorders: delayed motor development (11-28.9%), disorders of the musculoskeletal system (8-21.1%), hemiparesis (7-18.4%);
- convulsions (18-47.4%): convulsive seizures of the subcortical type (5-13.2%) and attacks of automatism (4-10.2%);

Visual impairment (22-57.9%): convergent strabismus (18-47.4%), vertical nystagmus (19-50.0%), the symptom of the «setting sun» (11-28.9%), horizontal nystagmus and exophthalmos.

Increased general excitability in combination with muscular hypertension and hyperreflexia was noted in 9-23.6% of newborns. The frequency of detection of neurological symptoms in children with hemorrhagic disease is presented in Table 2.

**Table-2**

**Neurological symptoms in children with hemorrhagic disease (n= 38)**

Indicator	The frequency of	
	N	%
Sharp decrease in spontaneous motor activity (before Adynamia)	14	36,8
Muscular hypotension (before tuning)	12	31,6
Muscular hypertension with the plugs of the pose	22	57,9
Areflexia	8	21,0
Hyperreflexia	11	28,9
Reflection of reflexes of congenital automation	16	42,1
Cramps	18	47,4
Large brandenders	22	57,9
Rough attetosis	17	44,7
Spontaneous vertical Nistagm	19	50,0
Rough and permanent converging strawbaz	18	47,4
Symptom of the "Tuning Sun"	11	28,9
Hypertension syndrome	10	26,4

On the EEG, changes in the bioelectrical activity of the brain were noted in the form of a decrease in amplitude (13-34.2%), dysrhythmia (15-39.5%), irregularity of delta waves (10-26.3%).

**Conclusions.** Thus, the impact adverse factors by the mother (maternal disobiosis, preeclampsia, reception anticoagulants during pregnancy, operational premise) and child (premise), contributes to development of hemorrhagic disease in newborns and the neurological disorders caused by it (movement disorders, visual impairment, convulsions), which requires early detection of risk factors and increased dispensary observation of a pregnant woman.

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