

# IMPROVING THE PRINCIPLES OF REHABILITATION FOR POST-VACCINATION COMPLICATIONS

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## **Annotation.**

The problem of post-vaccination complications in young children remains relevant not only in terms of timely diagnosis and treatment, but also in matters of subsequent medical rehabilitation. Even with a favorable course of the disease, some children have long-term functional disorders of the central nervous system, manifested by increased neuro-reflex excitability, sleep disorders, delayed psychomotor development, muscular dystonia and convulsive readiness. The aim of the study was to improve the principles of rehabilitation of children with post-vaccination complications, depending on the age and duration of the disease. 132 young children with post-vaccination complications and 40 practically healthy children of the control group were examined. Clinical and neurological, laboratory and instrumental research methods were carried out. It was found that the most common complications were hyperthermic syndrome, seizures, encephalic reactions and allergic manifestations.

**Key words:** Post-vaccination complications, young children, neurological disorders, diagnosis, treatment, convulsive syndrome, encephalopathy.

## **Introduction.**

In early childhood, the nervous system has high plasticity, which creates favorable conditions for the restoration of impaired functions with timely rehabilitation measures[4]. However, the effectiveness of rehabilitation largely depends on the individual selection of treatment and rehabilitation programs based on the clinical and neurological features of the disease and the age-related functional capabilities of the child's body[6].

Treatment of neurological complications includes anticonvulsants, dehydration therapy, neuroprotectors, drugs to improve cerebral hemodynamics and metabolic support of nervous tissue. In autoimmune demyelinating processes, glucocorticosteroids, intravenous immunoglobulins, and plasmapheresis are used [7, 10].

Early rehabilitation of children with neurological disorders is of particular importance. The complex of rehabilitation measures includes physical therapy, physiotherapy, massage, neuropsychological correction and speech therapy. Long-term dynamic monitoring allows timely detection of residual neurological disorders and correction of therapeutic tactics[5,8].

**The aim of the study** was to improve the principles of rehabilitation of children with post-vaccination complications, depending on the age and duration of the disease.

**Materials and research methods** In accordance with the goals and objectives of the study, 132 young children who received the vaccine and had complications after vaccination were examined. The control group consisted of 40 practically healthy young children who received vaccination without developing pathological reactions and complications.

The study was conducted on the basis of pediatric and neurological departments. The age of the examined children ranged from 2 months to 3 years. All children were divided into groups depending on the nature of the clinical manifestations of post-vaccination complications.

The comprehensive examination included a clinical and neurological assessment of the children's condition, analysis of motor activity, psychomotor development, muscle tone, reflex sphere, and emotional and behavioral reactions. Electroencephalography, neurosonography, and consultations with related specialists were used to assess the functional state of the central nervous system.

Rehabilitation measures included drug correction, physical therapy, massage, physiotherapy, sensory stimulation, elements of neuropsychological correction and dynamic observation. The volume and duration of rehabilitation measures were determined individually, depending on the age of the child and the severity of neurological disorders.

Statistical processing of the results was carried out using methods of variation statistics to determine the reliability of differences between the studied groups.

**Results.**

The analysis of clinical data showed that the nature and severity of residual neurological disorders depended both on the age of the child and on the duration of the disease. In children of the first year of life, signs of increased neuro-reflex excitability, sleep disorders and muscular dystonia were more often observed, while in older children motor and behavioral disorders prevailed.

It was found that the long-term course of the disease was accompanied by more pronounced functional disorders of the central nervous system and an increase in the frequency of delayed psychomotor development (Table 1).

Table 1.

The nature of neurological disorders depends on the duration of the disease

<b>Clinical manifestations</b>	<b>Up to 1 month (n=39)</b>	<b>1-3 months (n=54)</b>	<b>More than 3 months (n=39)</b>
Muscular dystonia	11 (28,2%)	24 (44,4%)	25 (64,1%)
Sleep disorders	14 (35,9%)	27 (50,0%)	25 (64,1%)
Delayed psychomotor development	4 (10,3%)	11 (20,4%)	18 (46,2%)
Convulsive readiness	8 (20,5%)	15 (27,8%)	15 (38,5%)

The analysis of the effectiveness of rehabilitation measures showed that the most pronounced positive dynamics was observed in children whose rehabilitation therapy was initiated in the early stages of the disease. In this category of patients, there was an improvement in muscle tone, normalization of sleep, a decrease in the level of neuro-reflex excitability and an improvement in psychomotor development (Table 2).

Table 2.

The effectiveness of rehabilitation measures in the examined children

<b>Performance indicators</b>	<b>Before the start of rehabilitation</b>	<b>After rehabilitation</b>
Increased neuro-reflex excitability	76 (57,6%)	29 (22,0%)
Sleep disorders	66 (50,0%)	24 (18,2%)
Muscular dystonia	60 (45,5%)	21 (15,9%)
Convulsive readiness	38 (28,8%)	14 (10,6%)
Delayed psychomotor development	33 (25,0%)	17 (12,9%)

In children of the first year of life, sensory stimulation methods, massage and physical therapy proved to be the most effective, while in older children, good results were observed with a combination of physiotherapy, neuropsychological correction and drug support.

The results obtained indicate that the course of the recovery period in post-vaccination complications in young children has pronounced age-related features. Functional disorders of the nervous system associated with immaturity of neurotransmitter and autonomic regulatory mechanisms prevail in children of the first year of life. Cognitive and behavioral disorders that require long-term correction become more significant in older children.

It has been established that the duration of the disease has a significant effect on the severity of residual neurological disorders. With a prolonged course of the pathological process, the risk of delayed psychomotor development and the formation of persistent functional disorders of the central nervous system increases.

Early initiation of comprehensive rehabilitation promotes faster recovery of impaired functions and prevents the development of persistent neurological deficits. A differentiated approach to rehabilitation, taking into account the age of the child and the duration of the disease, makes it possible to increase the effectiveness of treatment and rehabilitation measures and improve the quality of life of patients.

**Conclusion.** Improving the principles of rehabilitation of children with post-vaccination complications should be based on an individual assessment of the child's age, duration of the disease, and severity of neurological disorders. In young children, the most significant residual manifestations are increased neuro-reflex excitability, sleep disorders, muscular dystonia, and delayed psychomotor development.

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