COMBINED USE OF SPEECH THERAPY MASSAGE, CRYOTHERAPY AND GLYCINE IN THE TREATMENT OF CHILDREN WITH DYZARTHRIA

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The peculiarities of treatment of children with speech disorders resulting from hypoxical-ischemic lesion of the central nervous system are discussed. Data on combined use of Glycine, speech therapy massage and artificial local hypothermia are presented.

Keywords: neurology, speech disorders, cryotherapy, Glycine.

The most frequent speech disorder due to impaired cerebral circulation and hypoxia during the perinatal period is dyzarthria. It should be noted that if the child has a hearing, intelligence is not impaired, but there are significant speech disorders, there are possible problems in the formation of the psyche [1, 5]. Since speech is a complex organized mental function, deviation from the norm in its development is a sign of major changes in the state of the central nervous system, i.e., suffering from not only speech, but also all higher mental functions in general. Children with speech pathology often see bogreater or less learning difficulties [2, 4, 10].

According to world statistics, the frequency of speech disorders in children is increasing; about 25% of kindergarten students need the help of a speech therapist, the urgency of this problem is global. Such children have a fragility of attention and memory, a low level of understanding of verbal instructions, a lack of regulatory function of speech, a low level of control of their own activities, impairment of cognitive activity, low mental performance. The mental state of these children is unstable, so their performance changes dramatically [4, 7].

Relevance of issues of correction of dyzarthria is due to the prevalence of this disease, the duration of not always effective treatment, difficulties of rehabilitation and social adaptation of patients.

The pathogenesis of the underlying disease and the presence of neurological disorders dictate the need for the use of metabolic drugs that improve metabolic processes in the nervous tissue.

In the analysis of the literature [3] it is established that the effectiveness of drug therapy of children with speech disorders nootropic drugs is very questionable, there is no conclusive scientific evidence of their efficiency and security. However, it should be noted that the action of a number of nootropic agents is mediated through neurotransmitter systems of the brain, one of which is glutamatergic (amino acid glycine effects via NMDA receptors).

The drug of choice in the treatment of children with speech disorders due to hypoxic chemic encephalopathy, from our point of view, is Glycine, which contributes to the improvement of adaptive capabilities of the brain , cognitive functions, arousal harmonization and inhibition in the brain. Glycine receptors are present in many areas of the brain and spinal cord. By binding to receptors (encoded by *GLRA1*, *GLRA2*, *GLRA3*, and *GLRB* genes), Glycine has an inhibiting effect on neurons, reduces the release from them" excitatory" amino acids, such as glutamate, and increases the release of gamma aminobutyric acid.

When choosing a drug for the treatment of children, it is important to take into account the requirements of nootropic drugs: minimal side effects, pronounced therapeutic effect, possibility of use in complex with other preparations, convenience of use, good taste.

Convenient dosage form, sublingual application, pleasant taste quality, affordable price allow to prescribe Glycine to patients of any age.

We studied the effectiveness of complex effects in children with dyzarthria of speech therapy massage, cryotherapy and the drug Glycine (sublingual tablets 100 mg, OOO "MNPK "BIOTIKI"). The study was carried out in the Municipal Budgetary Preschool Educational Institution "Kindergarten №322 compensating species" (Krasnoyarsk). Copying data from the

card of individual development of the child preschooler and the electronic version of the outpatient card (software “Ariadna”) was performed.

The effectiveness of treatment of 60 children with dyzarthria between the ages of 3 and 7 years was analyzed. Patients were distributed by age as follows: 3 years — 15%, 4 years — 18%, 5 years — 46%, 6 years — 15%, 7 years — 6%.

Before treatment, patients were necessarily examined jointly by neurologist and speech therapist [8], and determined:

• pronunciation characteristic: voice, tempo, rhythm, intonation, sound pronunciation;
• Functionality of muscles (spontaneous speech and speech during articulatory gymnastics);
• nature of pronunciation of sounds;
• degree of severity of hyperkinesis, synkinesias;
• presence of vegetative reactions during speech.

In 67% of cases delayed speech development, in 90% of children - spasticity of the tongue muscles; in 54% - hypersalivation, which objectively made it difficult to carry out speech therapy massage. Practically selected optimal method of exposure based on local hypothermia method.

Method description: 30—40 minutes before speech therapy massage, the child receives Glycine sublingually:

• 25 mg (1/4 tablets) — aged 3-4 years;
• 33 mg (1/3 tablets) — aged 4-5 years;
• 50 mg (1/2 tablet) — aged 5—7 years.

When using the drug at the specified doses, the optimal effect was achieved. In all children with hypersalivation after Glycine intake, decreased salvation was observed.

Adverse actions of Glycine have not been identified. Despite the fact that the instructions for its use contain information about the possibility of hypersensitivity reactions in the form of rash and urticaria, we have not observed such reactions.

The best results of treatment of dyzarthria were obtained in children aged 3—5 years. After the 1st course of treatment, tongue mobility and strength of articulation muscles improves, salivation and muscle fatigue decreases, a more pronounced and persistent effect; speech can be adjusted completely to completely pure pronunciation (in this study — in 60% of children).

Children whose treatment begins at the age of 5—6 years of age require repeated courses of treatment in 60% of cases. Persistent effect is observed after 4—5 courses.

Worse are children 6—7 years old, when an articulatory base has already formed. Regular classes allow for better diction, but the sound structure of speech often changes after treatment is stopped. Very often, the condition deteriorates after the start of school, with the need to resume treatment, which may be due to the adaptive load in the new team and the transition to the new stage education. In this case it is advisable to consider the use of the drug Glycine in larger dosages, course doses selected individually.