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Preventive Methods of Dental Diseases in Patients with Cerebral Palsy in Children

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Abstract: About 500 factors are known that explain the causes of the appearance of the pediatric cerebral palsy clinic. Since the development of medical science and research methods does not stand still, over time, many more factors are found, and predictions for the rehabilitation of children with cerebral palsy become more pessimistic. Such a paradoxical conclusion does not satisfy doctors and parents of children with cerebral palsy [1,7,11,14]

In such children, the muscular system of the face-jaw is not isolated from myofunctional disorders, which cause dysgarmonia in the formation of the tooth-jaw apparatus and are considered an integral part of the syndromes of cerebral palsy in children [2,5,9,13].

Studies of the dental status of children with cerebral palsy indicate a high prevalence of dental-jaw facial anomalies (88-93%), the causes are mimic and masticatory muscle dysfunction, which are manifested by stereotyped typical reactions [3,5,12,17].

It is known that in 70% of children with cerebral palsy, oral breathing is observed. In such children, breathing through the mouth deepens the mimic muscles, the circular muscle of the mouth and the violation of language activity, which is accelerated by the development of dental-jaw disorders with the appearance of more recent clinical manifestations of these anomalies. A violation of the myodynamic balance between the muscles of the lunge, chewing, chakka and under the tongue is characteristic. Myodynamic equilibrium can be disturbed between the muscles of the round muscle of the mouth, the chin and the bottom of the oral cavity. If the respiratory function is impaired, the activity of the round muscle of the mouth increases several times in relation to the norm, and its endurance is significantly reduced.

The complexity of conducting treatment-prophylactic and rehabilitation measures in children with cerebral palsy is due to the presence of various syndromes of mat's injury. Early dysontogenetic damage to the motion analyzer at an early age is accompanied by generalised spasticity [7,8,16,17]. The formation of movement functions in children with cerebral palsy, the Coordination of fine, differentiated movements is impaired, so the care of the oral cavity for such children is complex [2,9,12]. A correlation was found between the pathology of the tooth-jaw joint and the delay in the psychoneurological development of the child.

Thus, the organization of joint work of specialists of different profiles in order to increase the level of multidisciplinary treatment-prevention and rehabilitation assistance for this category of patients becomes an urgent task.

In children with speech disorders and spastic forms of cerebral palsy in children with, there is a mutually aggravating syndrome. As a result of complex clinical-instrumental and functional studies of dental and neurological conditions, data on the frequency, structure, speech disorders of speech

disorders in children with various clinical variants of spastic forms of cerebral palsy were obtained. These data should be used in practical health care when planning treatment-prevention work in rehabilitation centers.

Magzhanov R.V. According to [2011] in the Republic of Bashkortostan of the RF, the incidence of pediatric cerebral palsy fell to 2.5 cases per 1,000 children in 2011, with 50.0% of cases dominated by the depligic form, the average age of children was between 7 and 14 years, with 70.0% of cases experiencing disability. Studies have shown that children with impaired movement are characterized by athetosis, which is characterized by slow, worm-like, artistic movements. In this regard, children with this pathology cannot independently perform manipulative actions [5,7,15].

Also, in children with cerebral palsy, the muscles that perform chewing and speech functions are always damaged, so some patients have difficulty talking. There are problems with saliva control, so the pieces of food stick between the teeth, which often cause caries and other diseases of the oral cavity. The condition of the oral cavity in children is often unsatisfactory [13,14].

Ogonyan V. to study the hygienic condition of the oral cavity in children with cerebral palsy.R. (2003) used the Fedorov-Volodkina method, the Schiller-Pisarev method, and the dental index of the RMA. The study found: high prevalence of systemic hypoplasia of enamel (19.04%), carious tooth damage (93-100%). In his work, the researcher also noted the high prevalence of TJA, speech disorders (95.4%), respiratory dysfunction (95.4%), inflammatory diseases of the lips (80.5%).

Slusky D.M. According to a study from [2005], 100% of studied BMF li patient children were diagnosed with malignancies during the milk bite (suction), 94.0% during the alternating bite, and 78.0% during the permanent bite.

With his research de Guare R.O. [2004] confirms poor oral hygiene in children suffering from cerebral palsy, which is significantly higher than in children without this pathology.

Erzina S.V. According to [2005], children aged 7-18 years have a prevalence of periodont disease in children and adolescents with cerebral palsy of 94.4%, with most cases occurring in the form of chronic catarrhal gingivitis.

Oleynik E.A. [2008] studies have found the following increased rates of dental status for children with mat diseases: the prevalence of caries is 98.0% while the prevalence of periodont diseases is 80.0%, in addition, the remineralizing function of saliva has decreased in 84.0% of cases. High levels of gram-positive cocci - Streptococcus mutans 85.0% and 92.0% of children-have been found to have lactobacillus spp, a representative of the normative microflora, in the saliva of patients examined.

Children living in Serbia had a high percentage of removed teeth (10.6%) among children aged 15-18 with cerebral palsy, and 70.6% of TJA. In a number of other studies, the presence of an increase in the tactile sensation of the oral cavity, salivation, tongue changes: the presence of filamentous suckers of the dorsal and finial part, size enlargement, swelling, flattening of the collar hypertrophy [1,4,8,12,17] has been noted.

Research objective. To study the bioelectric activity of the chewing, Chakra and circular muscles of the mouth in children with cerebral palsy with diplegic manifestations.

The preservation of an increased tone in children at the stage of relative physiological peace of the lower jaw during a permanent bite indicates the absence or insufficient improvement of the function of muscle relaxation during the formation of the tooth-jaw system.

A significant increase in the tone of the muscles contracted in the hyperkinetic form of BMF was also detected at 6 years of age - 91.6 m, and at 12 years of age-104 M. In addition, children of this group had significantly higher contracted muscle tone ($r<0.01$) than other groups.

In patients with an atonic-astatic form of the disease, unlike those examined, there was a decrease in the tone of the chewy muscles in both the relative physiological calm phase (6 years old - 54.6±5.1 m and 12 years old-51.2±2.0 M) and the contraction phase (62.1±4.9 m and 59.6±1.9 m). At the same time, the tone of relaxed and contracted muscles in 12-year-olds was lower in comparison with

the data obtained in 6-year-olds of this group, which is explained by a violation of blood supply and the development of muscle atrophy in this form of the disease.

Thus, all those examined are characteristic of a significant decrease in the difference in the tone of the contracted and relaxed muscles and, accordingly, the coefficient of contractility, which indicates a decrease in the excitability and permeability capacity of the neuromuscular apparatus, and children are the result of damage to the motor areas of the bark in cerebral palsy. In 6-year-olds, the difference in muscle contractile and plastic tone was higher than in 12-year-olds, indicating a decrease in the contractile ability of chewing muscles with age.

At the next stage of the study, the effectiveness of the effect of myofunctional preortodontic trainers from Myofunctional ResearchCo (MRC, Australia) on the condition of chewing muscles in children with BMF li was studied.

The examined children were divided into 2 groups:

first group control group (n=26), BMF li children who do not wear MRC company elastoprotes;

the second group is the main group (n=30), children with cerebral palsy who wear elastoprotes from MRC for 6 months.

The bioelectric potential (activity) of chewing muscles of children studied by BMF li was measured on the first day of the study, 3 and 6 months later.

Bioelectric activity was studied in the above-mentioned muscles in a state of physiological calm and with a four-channel electromyograph from the firm "Medikor" at speeds of 50 and 100 mm/s. The duration, sensitivity, as well as the frequency and amplitude of the sensitivity of the above muscle excitation nerve were studied on both sides (right and left).

A study of the tone of the chewing muscles showed that at the stage of relative physiological peace of the lower jaw, the tone of the chewing muscles of the first (control) group has always increased, which indicates their excessive and constant tension. The preservation of an increased tone in children at the stage of relative physiological peace of the lower jaw during constant bite of the teeth indicates the absence or insufficient improvement of the function of muscle relaxation during the formation of the tooth-jaw joint. In the second group, the tone of the chewing muscles is much lower than in the first group, especially in those who wear elastoprotesis for 6 months.

After 3 months of treatment using" myobreys " elastoprotesis, a significant improvement in occlusion occurred due to passive dilation of the upper and lower tooth rows in 50% of children with dense tooth rows. After 6 months, there was an expansion of the upper and lower tooth rows, breathing through the nose was normalized, and the act of swallowing was improved.

Thus, it has been proven that the use of" Myobreys " elastoprotesis has a positive effect on the tone of the chewy muscles, thereby increasing the agitation bladder. The use of such electroprotezes reduces the asymmetry of the tone of the chewing muscles. A decrease in the tone of the chewing muscles leads to an expansion of the tooth rows. This leads to an improvement in breathing through the nose.

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