

Dental Morbidity in Children with Pathologies of the Musculoskeletal System

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Abstract This article is devoted to the study of the organization and evaluation of the effectiveness of professional activities aimed at preventing dental diseases in children with pathologies of the musculoskeletal system.

Keywords Caries, Diseases of the musculoskeletal system in children

Currently, ways to improve dental care for children are being considered in foreign countries and in Uzbekistan. One of the priority areas of pediatric dentistry has been and remains the implementation of programs for the prevention of dental diseases, especially for disabled children.

Over the past decades, domestic and foreign sources of information have widely discussed the organization and evaluation of the effectiveness of professional activities aimed at preventing dental diseases [1,2,6,10].

At the same time, there is very little information in the literature about scientifically based methods of preventive dental care for this category of children in organized groups, and the role of local protective factors in the formation of dental health has not been sufficiently studied.

The most important and weak link in the prevention of major dental diseases is the hygienic education of the population, dental educational work and training in the rules of oral hygiene [9,13].

Important problems of children c diseases of the musculoskeletal system (MS) remain limited due to problems with self-care, movement, communication with others, psychological problems, ability to learn and work, social and legal security, low quality of medical care, problems with the provision of medicines, rehabilitation support, as evidenced by the studies of a number of authors [4,5,7,8] The listed factors make the problem of creating comprehensive prevention programs even more relevant for children with diseases of the musculoskeletal system.

A significant number of studies indicate that dental morbidity in children with diseases of the musculoskeletal system is higher than in somatically healthy children, which may be due to a complex of factors operating at different stages of development of the child's body [12,13,14,16,17].

A high level of dental morbidity in children with diseases of the musculoskeletal system may be associated with difficulties in perception, impaired behavioral reactions and,

as a consequence, inadequate compliance with the necessary hygiene rules by children with diseases of the musculoskeletal system. At the same time, establishing psychological and emotional contact between the doctor and the patients of this contingent presents certain difficulties. In this situation, the work of a doctor with people who are not capable of self-care, and, often, of independent movement, is associated with significant difficulties, and in some cases with the impossibility of performing the necessary dental procedures.

Therefore, the problem of optimizing dental care for children with diseases of the musculoskeletal system is one of the important tasks of pediatric dentistry. To solve this problem, it is necessary to develop and test programs for medical examination and treatment of this group of children, aimed mainly at primary and secondary prevention of major oral diseases. A number of studies conducted in this direction [2,5] show that dental health indicators in children with diseases of the musculoskeletal system remain at a fairly low level [4,5,8]. This requires a new approach to caries prevention, which will improve the dental status of this group of children and maintain their health.

The duration of use of psychotropic therapy leads to the absence of complaints in this contingent (pain syndrome), which contributes to an increase in the intensity and prevalence of dental pathology [13,14,18]. Analyzing the causes influencing the development of periodontal diseases and the condition of the oral mucosa in patients with diseases of the musculoskeletal system, many authors, without taking into account the effects of medications, continue to consider the main etiological factors to be lack of oral care, rather than the severity and duration of the underlying disease [8,9].

It is known that children with diseases of the musculoskeletal system have characteristic health characteristics, in particular, they have impaired motor development, which is caused by abnormal distribution of muscle tone and impaired coordination. 30-50% of disabled children with this diagnosis experience convulsions and contractures of joints and coordination of

movements [7,8]. All this is reflected in the dental status of the patient.

Many chronic diseases have been found in children with diseases of the musculoskeletal system, and their presence causes the intensive development of dental diseases - dental caries, pathology of periodontal tissues, dental anomalies and deformities, and various functional disorders - chewing, swallowing, speech.

Studying the dental status among children with diseases of the musculoskeletal system, many researchers point to the high prevalence and intensity of carious and non-carious lesions of the hard tissues of teeth and periodontium [2,3,10]. The authors attribute this fact to the poor hygienic condition of the oral cavity, which is formed due to imperfect manual skills, and due to the insufficient process of self-cleaning of the oral cavity against the background of frequently occurring dental anomalies and dysfunction of the salivary glands, masticatory muscles, and tongue [7]. According to experts, the above-mentioned features of the dental status of disabled children determine the appearance and development of the carious process and periodontal diseases [3].

According to V.M. Elizarova and co-authors (2012), the activity of the carious process in children with diseases of the musculoskeletal system is due to a combination of disorders of histoorganogenesis and mineralization of teeth. Based on this, V.M. Elizarova and N.V. Bashirova (2012) recommend that from birth children should be included in the risk group for developing major dental diseases if they have a history of pre-, intra- and postnatal factors for the development of central nervous system pathology.

S.V. Erzina et al. (2010) indicates that the prevalence of periodontal diseases in disabled children is 94.4%. In the vast majority of cases (up to 99.4%), inflammatory periodontal diseases occur in the form of chronic catarrhal gingivitis. According to the author's data, in the examined children, the intensity of the disease reached peak values at the age of 12 and was characterized by a PMA index of $50.1 \pm 4.06\%$, and at the age of 15 it was $45.4 \pm 3.19\%$. The described changes closely correlate with the low level of hygiene - a good and satisfactory level of hygiene was detected in half of the examined children, and in 8.7% of cases a poor level of hygiene was noted.

High rates of dental morbidity are noted by R.R. Galeeva and S.V. Chuikin (2014). The KPU index for this category of children reaches 6.0, and the PMA index had values in the range of 0.23-0.43. In addition, 100% of those examined had various orthodontic disorders. These figures are confirmed by research by M.A. Danilova et al. (2012), who indicate that in children with spastic forms of cerebral palsy, dental anomalies were diagnosed in 73.33% of cases. Moreover, there is a dominance of anomalies of occlusion and combined forms of pathology, which accounted for 40.0-80.0% depending on age (a significant percentage was occupied by distal, deep incisal occlusion and disocclusion). In addition, in 35.0% of cases there were anomalies of individual teeth.

Yu.V. Skripnik (2014) assessed the incidence of caries in children with mental retardation. The study showed that the

prevalence of caries was 66.7%, the average value of the intensity index KP(y) was 4.37, the index KP(p) was 7.74. The structure of activity was dominated by the subcompensated form (59.2%), and the "k" indicator exceeded the "p" indicator. The level of oral hygiene in these children corresponded to "poor hygiene" and had a value of 2.92.

A number of authors analyzed dental morbidity in children with cerebral palsy. EM. Kuzmina, A. C. _ Molchanov, A.I. Ismailov (2008) also note the high prevalence of dental caries (up to 100%). The value of the intensity index in persons with a mild decline in intelligence was 5.9 ± 0.3 , while in those with a moderate decline it was 9.1 ± 0.51 , and in those with a severe decline it was 10.60 ± 0.46 . The prevalence of periodontal diseases among the surveyed individuals was, on average, 33.8%. However, there are publications in which the authors indicate that the prevalence of periodontal diseases reaches 54.3% [S.E. Osmanov, 2010]. BUT. Savichuk et al. (2011) noted that the prevalence of caries was 89.8 ± 3.94 ; intensity (KPU + kp (y)) - 4.54 ± 0.39 . In the structure of activity, the compensated form of caries was diagnosed in $57.6 \pm 6.43\%$, subcompensated - in $30.5 \pm 5.99\%$, decompensated - in $11.8 \pm 4.2\%$, respectively.

N.V. Tarasova, V.V. Alyamovsky, V.G. Galonsky (2014) indicate that the highest frequency of caries during the survey was observed in the age groups of 8 and 14 years old - 85.8 and 91.7%, respectively. Complications of caries were identified in 38% of the total number of carious teeth. The intensity of dental caries in the examined children was on average 3.1, the maximum values of the KPU index were recorded at 7 and 8 years old - 4.4 and 4.0, respectively. Guseinova M.Kh. et al. (2013), when examining 236 children with diseases of the musculoskeletal system, found that the frequency of caries in different age groups was 97.9-100%, and the average CP index in children was $5.08 \pm 0.47 - 6.53 \pm 0.59$, which is comparable with the previously indicated data.

The author believes that due to the high prevalence of dental caries and periodontal lesions, this group of children needs effective timely treatment and preventive measures.

T.F. Kosyrev et al. (2010), believe that the high prevalence of CFA and periodontal diseases are associated with the fact that many children do not know how to fully chew food and receive it in pureed form, as a result of which the self-cleaning of teeth is impaired, as well as Children do not have oral care skills. The authors believe that to improve the comprehensive rehabilitation of this group of children, it is advisable to increase attention to teaching oral hygiene.

In India, an assessment was made of oral hygiene and the condition of periodontal tissues in adolescents with special needs (visually impaired, hearing impaired, with diseases of the musculoskeletal system, with somatic pathology). The study showed that children with diseases of the musculoskeletal system had worse oral hygiene and periodontal disease was more common than in the group of adolescents with visual and hearing impairments. The authors suggest that among adolescents with special needs, poor oral hygiene and a high prevalence of periodontal disease are associated with poor

coordination, poor comprehension, or muscle limitations. According to the authors, improvement of oral hygiene in these adolescents can be achieved through the use of additional hygiene products, as well as through hygiene education for people caring for this group of adolescents [4,6].

As a result of the study, it was shown that children with various forms of cerebral palsy have a higher prevalence and intensity of caries of teeth and surfaces, and a higher level of caries intensity compared to practically healthy children. In sick children, oral hygiene and the condition of marginal periodontium are significantly worse, enamel resistance is reduced, and the level of dental care is insufficient.

The works of many scientists prove the influence of general somatic pathology on the occurrence and course of oral diseases, in particular chronic catarrhal gingivitis. In recent years, there has been an increase in the number of inflammatory periodontal diseases in children with an increase in the proportion of diseases with a severe course and early generalization of the pathological process, which may be associated with the presence of concomitant general somatic pathology [15]. It is the presence of concomitant pathology that explains the ineffectiveness of treatment for inflammatory diseases of the oral cavity.

Among diseases of the oral mucosa in children with diseases of the musculoskeletal system, gingivitis and erosive and ulcerative forms of lesions predominate, which are mutually aggravating factors. Therefore, before starting complex etiopathogenetic treatment, professional oral hygiene should be carried out, in the absence of which all therapeutic measures are ineffective. Of great importance is the training of children with diseases of the musculoskeletal system in rational hygiene of the oral cavity and tongue, which should be considered as a necessary condition for the effectiveness of treatment measures [9].

Subsequent work on this topic indicated the poor hygienic condition of the oral cavity, formed due to imperfect manual skills, and due to an insufficient process of self-cleaning of the oral cavity against the background of frequently occurring dentofacial anomalies and dysfunction of the salivary glands, masticatory muscles, and tongue in disabled children [7]. Conducted research in this direction to timely identify risk factors makes it possible to prevent diseases of the teeth and dental system, and thereby improve oral health. The difficulty of carrying out therapeutic and corrective manipulations in the oral cavity in such children is due to the presence of symptoms of damage to the central nervous system: hyperkinesia of articulatory and masticatory muscles, convulsions, sensory disturbances, sialorrhea, joint contractures. Many chronic diseases have been found in disabled children, and their presence causes the intensive development of dental diseases - dental caries, pathology of periodontal tissues, dental anomalies and deformations, and various functional disorders - chewing, swallowing, speech.

Thus, many authors study the dental status of children with diseases of the musculoskeletal system, including those

living in organized children's groups. The data they obtained regarding the prevalence and intensity of caries is contradictory, but the data of all authors agree that children with diseases of the musculoskeletal system have poor oral hygiene, a high prevalence of periodontal pathology and dentofacial anomalies. Analysis of literature data indicates a high prevalence of caries and its complications in preschool children and the need to choose the effectiveness of prevention methods.

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