

МЕДИЦИНА И СТОМАТОЛОГИЯ

DENTAL STATUS OF CHILDREN WITH AUTISM RESIDING IN THE REGION WITH ECOTOXICANTS

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Annotation. According to the results of the questionnaire and dental examination, it can be judged that autistic children living in the region with ecotoxics have not yet developed a habit of oral hygiene, there is a high prevalence of dental caries, poor oral hygiene, and insufficient dental care. The study of the dental status of children with autism showed the need for the active participation of a dentist in the formation of children's proper oral care skills, which is the key to dental health and improve the quality of life of children with this pathology.

Keywords: autism, children, dental status

Introduction. Autism (from Latin autus, meaning 'self', 'immersion in oneself') is both a specific diagnosis and a general term that refers to all specific emotional disorders [1, 2]. This disease is characterized by a violation of mental and emotional development, causing problems in communication, relationships with others and learning [3, 4]. Autism occurs as a result of a variety of biological, genetic and environmental causes [5–7]. Children with this pathology usually have a low level of development of self-care skills, this is due to their behavior, attention deficit, and reduced learning ability [8]. There are also sensory problems, for example, hypersensitivity to toothbrush bristles and the taste of toothpaste or tooth powder, which forces children to avoid brushing their teeth [9]. In addition, autistic children often have a pronounced food dependence on sweets. All this leads to a violation of the dental health of children with somatic disease [10–14]. In such regions as the Republic of Bashkortostan, a high concentration of various industrial sectors (oil and gas production and transportation, petrochemicals, oil refining, chemistry, instrumentation and machine building, ferrous and non-ferrous metallurgy, mining, and highly developed agro-industrial complex) poses a potential danger to human health [15, 16]. Ecotoxics have a wide range of toxic effects, causing the occurrence of biochemical changes in the body, neurotoxic, gonadotoxic, genotoxic, embryotoxic and teratogenic effects, negatively affecting the growth and development of the body, including the dentition. In this regard, the assessment of dental status among children with autism is of particular importance [17–19]. Given the characteristics of autistic children, without disturbing their psyche, it is necessary to gradually develop habits of oral hygiene [1–5].

The aim of the study was to study the dental status of children with autism, living in the region with ecotoxics.

Materials and methods. The study was carried out on the basis of the Ufa Special Correctional Boarding School No. 92 for students with disabilities, the Children's Dental Clinic No. 7 of Ufa and the

Department of Pediatric Dentistry and Orthodontics with a course of IDPO of Bashkir State Medical University. At the time of the survey, 159 children with disabilities were enrolled in the boarding school, 47 of them with autism, of which 16 were at home. A dental examination was performed on 31 children with autism from 6 to 18 years old. Before each examination, a conversation was held with each child in a playful manner about the importance of teeth in a person's life, possible diseases, the importance of oral hygiene, and the need for regular dental examinations. In connection with the peculiarities of the course of the underlying disease, a dental examination of children was carried out together with teachers, medical staff of the boarding school. Examination of the oral cavity was carried out using a standard dental tool kit. To assess the intensity and prevalence of the carious process, the KPU dental index was used. The structure of this index was revealed, while indicators K (caries), P (fillings), and U (extracted teeth) were separately calculated. The level of dental care (USP) was determined. To assess the hygienic condition of the oral cavity of the examined children, the PHR oral hygiene efficiency index was used (Podshadley A.G., Haley P., 1968). Also, to study the level of oral hygiene of the examined children, questionnaires were drawn up in the form of a special conversation questionnaire (analysis of the level of oral hygiene) at the Department of Pediatric Dentistry and Orthodontics with a course of IDPO BSMU, consisting of 15 questions. Using the questionnaire, it was established how much children and parents are aware of the purpose of the teeth, good nutrition, attitude to the dentist, and whether oral hygiene is adequately implemented. In addition to the questionnaire for studying the level of oral hygiene, a questionnaire was compiled to analyze the anamnestic information obtained as a result of a survey of parents. This analysis served as the basis for obtaining objective data on the individual characteristics of the child, the overall picture of the etiopathogenesis of violations of the basic functions of the dentofacial system, and dental status in general.

The results of the study. In the study of the history of children's lives, it was noted that children with autism were born from 1-3 pregnancies and childbirth. In this case, the course of the pregnancy of their mothers was complicated mainly by infectious diseases. In most cases, premature birth, weak labor and rhodostimulation were used. The birth weight of children ranged from 1486 to 4100 grams. Most of the children were breast-fed (64.51%), some were breastfed (35.48%). Of the concomitant pathology, against the background of the underlying disease in children with autism, posture disorders (curvature of the spine, 51.61%), feet (22.58%), myopia (25.80%), astigmatism (16.12%), angiopathy were noted retina (9.67%), delayed psycho-speech development (35.48%), mental retardation (25.80%), speech impairment (29.03%), adenoids (9.67%), gastritis (9.67%), endemic goiter (3.22%), neurogenic bladder (3.22%), gallbladder dyskinesia (6.45%), pyelonephritis (3.22%). On external examination, most children with autism revealed such bad habits as thumb sucking (12.90%), lower lip bite (22.58%), tongue between teeth (51.61%), nail biting habit (12.90%), pull all objects into the mouth (3.22%), as well as dento-jaw system dysfunctions: respiratory failure (oral - 58.06, mixed - 32.25%), swallowing (infantile type - 74.19%), sluggish, too long chewing (51.61%), speech (expressive speech, echolalia, tachylalia, bradylalia). During an examination of the oral cavity during swallowing, a tongue was laid between the teeth, hypertonicity of the muscles surrounding the oral fissure (buccal, chewing, circular, temporal, lateral wing-shaped), which led to spastic tension of the lips, and after examination it was observed at rest weakness of the circular muscle of the mouth (61.29%). The muscles of children on the one hand are excessively contracted, and on the other hand are hypotonic. This is due to the imbalance between the processes of excitation and inhibition. At the same time, they have a certain specificity in muscle tension: it is quickly replaced by relaxation and again turns into tension. Anomalies were observed in the structure and attachment of the frenum of the lips and tongue (22.58%), bite (cross, distal, deep, open, straight) and teeth (vestibular and oral position, tortoanomaly, transposition, microdentia, hyperodontia), most often combined in all children examined. The level of oral hygiene by the pH index was unsatisfactory (2.1). The intensity of the carious process in the KPU index was 5.3, the prevalence was 80%. In the structure of the index, the component "K" accounted for 81.25, "P" - 10, "U" - 8.75%. The level of dental care in the USP index was insufficient - 10%. A survey (analysis of the level of oral hygiene) revealed: most children do not brush their teeth twice a day and do not devote adequate time to brushing their teeth (54.83%); almost no one uses additional oral hygiene products and does not cleanse the surface of the tongue from plaque; 19.35% of children have bleeding gums when brushing their teeth; almost all children visit the dentist as necessary, only a small part refuses to go to the doctor (12.90%).

Conclusions Based on the results of the questionnaire and dental examination, it can be judged that autistic

children living in the region with ecotoxigants have not yet developed a habit of oral hygiene, there is a high prevalence of dental caries, poor oral hygiene, and insufficient dental care. The study of the dental status of children with autism showed the need for the active participation of a dentist in the formation of children's proper oral care skills, which is the key to dental health and improve the quality of life of children with this pathology.

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RISK FACTORS FOR CONGENITAL MALFORMATIONS OF THE MAXILLOFACIAL REGION

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Annotation. The article provides a review of the literature on the study of the causes of congenital malformations and dentofacial anomalies, the identification of which is a prerequisite for substantiating and conducting an integrated system for the prevention of this pathology in children and adolescents.

Key words: congenital malformations; neural tube defects; crevices of the upper lip and palate, dentition.

Congenital malformations (CHD) occupy a leading position in the structure of childhood morbidity, disability and mortality and represent an important medical and social problem. [1-10]

The causes of congenital malformations can be varied: the effects of teratogens, maternal diseases, chromosomal aberrations, mutations of certain genes, and others. However, in a significant part of cases, the nature of VLD remains unknown. It seems most likely that the etiology of congenital malformations is multifactorial; in other words, both the genotype of the mother and the fetus, as well as the influence of environmental factors, affect the risk of congenital malformations. In the 60s of the last century, the first evidence appeared in the world literature that impaired folate metabolism and folic acid deficiency in pregnant women can affect the risk of spontaneous abortion and neural tube defects in the fetus. [5-15] This discovery aroused keen interest: in numerous studies of the 80-90s it was shown that the consumption of multivitamins with a high content of folic acid or folate-rich foods before conception and in early pregnancy reduces the

frequency of neural tube defects - as in mothers who already have a baby with such a pathology, and in women without a history of fetal neural tube defects. Many of these works were performed on small samples, and it remained unclear whether folate itself or other multivitamin components had a protective effect.

To date, several dozen studies have been carried out to study the association of polymorphic variants of folate metabolism genes with the risk of congenital malformations. Most of the work was performed on samples of 200-300 people in the experimental and control groups and focused on several of the most studied single nucleotide polymorphisms (SNPs), such as MTHFR C677T (rs1801133), RFC1 A80G (rs1051266), MTR A2756G (rs1805087), MTHFD1 G1958A (rs2236225).

In recent years, large works have begun to appear that analyze the associations of certain nucleotide substitutions with different types of CDF. However, associations with specific SNPs identified in some studies are not always reproduced in other studies. With confidence, only the association of the MTHFR 677TT