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Improving the Effectiveness of Research, Treatment and Prevention of Caries in Children with Type 1 Diabetes

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ABSTRACT

The problem of diabetes mellitus is currently still relevant throughout the world. Over the past 50 years, this disease has reached a pandemic level. According to the information given by the World Health Organization in 2012, the number of patients with diabetes in the countries of the world is 280 million, of which 480,000 are children. If we take the data of 2010 in Russia alone, 3 million 200 thousand patients with this disease were registered.

Relevance of the topic: 97% of them were type 2 diabetes (Petrov V.I., Rogova N.V., Mikhaylova D.O.// Bulletin of the Volgograd State Medical University. - 2010. - ed. 1. - S. 28-32). It was estimated that 11.25% of those examined had type 2 diabetes in the screening questionnaire on the risk of diabetes produced by the Volgograd Medical Prevention Center in 2009 [Sabanov V. I., Dyachenko T. S., Berdnik E. Yu. // Bulletin Roszdravnadzor. - 2012. - No. 2. - S. 49-53.].

As a result of diabetes mellitus, the structural structure of the salivary glands changes, which in turn leads to saliva secretion and biochemical composition of saliva. As a result, it causes the development of xerostomia and numerous caries, candidiasis, halitosis [Carda C., Mosquera-Lloreda N., Salom L., et al. // Med. Oral. Patol. Oral. Cir. Bucal. - 2006. - Vol. 11 (4).–R. 309–314.]

Diabetes mellitus remains an urgent problem for the field of health system worldwide. This is one of the main causes of early disability and high mortality among children. Despite the adoption of national programs to combat diabetes in most countries of the world, its prevalence is increasing not only among adults, but also among children. (1 17 13 5)

This disease, known as diabetes mellitus or insulin-dependent diabetes, is the most common type of diabetes in children and adolescents. Diabetes significantly affects the condition of the oral cavity. Therefore, children's dentists should know about the complications and specific features of this disease in the oral cavity [Nirmala SVSG, Saikrishna D., 2016].

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The worldwide prevalence of diabetes in all age groups was 2.8% in 2000 and is expected to increase to 4.4% by 2030 [World Health Organization, 2018]. Diabetes mellitus is a multifactorial disease characterized by chronic elevation of blood glucose or hyperglycemia and impaired insulin secretion, as well as insulin dysfunction. Calling diabetes a silent epidemic, this disease is the main problem of the health organization and it accounts for 9% of all deaths in the world [NazirMA, AlGhamdiL, AlKadiM, AlBeajanN, AlRashoudiL, AlHussanM., 2018].

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According to the World Health Organization (WHO), health education is the best and most effective way to provide medical care to people. Medical education is the cornerstone of diabetes management. Research in this field shows that medical education is effective in the control and treatment of this disease, and the correct selection and planning of the treatment of the disease can reduce the complications of diabetes by 80% [RochaRB, SilvaCS, CardosoVS., 2019, MalekmahmoodiM, ShamsiM, RoozbahaniN, MoradzadehR., 2020].

In the care of children with diabetes, it is necessary to take into account the dental indication of the oral cavity. The oral dental care of patients with this disease can have a significant impact on their overall health and the progression of the disease. Periodontal disease and dental caries are the most common chronic diseases in diabetic patients.

Inflammatory processes in periodontitis are not only limited to the oral cavity, but can also cause systemic consequences. Patients with type 1 and type 2 diabetes (QD 1, QD 2) have more gingivitis and periodontal disease (PC) than other dental diseases. As a result, the periodontal condition worsens.

There is general agreement that periodontal inflammation adversely affects glycemic control and other diabetes-related complications, and that treatment of periodontitis may have a positive effect on this adverse effect. In addition, pediatric caries (CA) is a multifactorial dental disease that is common in obese and diabetic patients, but studies do not have clear data on its prevalence.

There is no sharp difference in the course of gingivitis, periodontitis and caries, for example, the origin of these diseases is caused by non-compliance with oral hygiene and proper nutrition. Not brushing your teeth regularly and eating too much sugary food can have an even more harmful effect on your oral health. Maintaining good oral health can help prevent chronic dental disease and mitigate the effects of chronic inflammation. Thus, caring for patients with obesity and diabetes requires a multidisciplinary team of health care professionals [LifshitzF, CasavallePL, BordoniN, RodriguezPN, FriedmanSM., 2016].

This disease, called diabetes or insulin-dependent diabetes, is the most common type of diabetes in children and adolescents [NirmalaSVSG, SaikrishnaD.,2016, BabuSR, EisenbarthGS., 2012, HongYHJ, HassanN, CheahYK, JalaludinMY, KasimZM., 2017]. The worldwide prevalence of diabetes in all age groups was 2.8% in 2000 and is expected to increase to 4.4% by 2030. Compliance with the priorities of the republic's science and technology development. This dissertation research was carried out in accordance with the priority direction of the development of science and technology in the republic VI "Medicine and pharmacology".

Level of knowledge of the problem. Low production of insulin and resulting hyperglycemia leads to destruction of β-cells or complete loss of pseudoatrophic coasts: a) complete destruction

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of insulin-producing β-cells; b) functioning of coasts with partially preserved β-cells. [WorldHealthOrganization, 2018, MaahsDM, WestNA, LawrenceJM, Mayer-DavisEJ., 2010, Lancet, 2000, ZungA. BlumenfeldO, ShehadehN, DallyGottfriedO, TenenbaumRakoverY, HershkovitzE, GillisD, Pinhas-HmielO, HanukogluA, RachmielM, ShalitinS, 2020].

Diabetes significantly affects the condition of the oral cavity. Therefore, it is necessary for pediatric dentists to pay attention to the changes in the oral cavity and its specific aspects [Nirmala SVSG, Saikrishna D, 2016, Babu SR, Eisenbarth GS., 2012]. The origin of diabetes mellitus is characterized by a chronic increase in the amount of glucose in the blood due to many reasons, or it is also called hyperglycemia, and it is characterized by a sharp violation of insulin production. Diabetes is also known as a silent epidemic and is one of the most pressing public health problems, accounting for 9% of all deaths worldwide. [NazirMA, AlGhamdiL, AlKadiM, AlBeajanN, AlRashoudiL, AlHussanM., 2018].

The purpose of the study: to study the occurrence of caries in children with type 1 diabetes, increase the effectiveness of treatment and prevention.

Objectives of the study: to identify and evaluate various risk factors that can cause dental diseases in children with type 1 diabetes; study of caries in children with type 1 diabetes; Conduct dental clinical examinations in children with type 1 diabetes; Evaluating caries prevention and effectiveness in children with type 1 diabetes;

Research object: 131 patients with type 1 diabetes treated in stationary conditions at the endocrinology medical center of Bukhara region were selected. Examination methods: clinical-stomatological, laboratory. Clinical examination methods are primary and secondary: objective and subjective data were collected on the primary examination methods.

Subjective examination data were obtained mainly from the patient himself or from his parents or relatives, which related to the history of the disease..

As for the objective examination, we used the patient's appearance, examination of the face-jaw area and oral cavity, palpation of the soft tissues of the face and jaws, as well as instrumental examination of the organs of the oral cavity, such as percussion and similar examination methods.

Methods of laboratory examination: general analysis of blood, biochemical analysis Research methods. general clinical, dental and statistical research methods were used.

Scientific novelty of the study: risk factors for the development of dental diseases in children with type 1 diabetes were determined; The occurrence of caries in children with type 1 diabetes was studied; Caries prevention and effectiveness were evaluated in children with type 1 diabetes;

Scientific and practical significance of the research results: The scientific significance of the research is that it opens up new promising opportunities for dental diseases in children with type 1 diabetes. The practical importance of the study is that, based on the results, the risk factors that cause the main dental diseases in children with type 1 diabetes were determined.Accordingly, endocrinologists, dentists, pediatricians, and general practitioners are advised to determine the tactics of treatment when teeth are affected by caries, to choose the optimal method of treatment, and to improve the quality of the effectiveness of the prevention of dental diseases in patients of this category, as well as dental diseases in children with type 1 diabetes. based on maintaining the principle of continuity in their management, if any.

All this helps to reduce complications and economic costs, as well as to improve the quality of life of sick children in this contingent. Implementation of research results. Preventive measures aimed at preventing the main dental diseases and mainly caries in children with diabetes are based on the scientific results obtained on the measures and their results. The results obtained

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from practical work will help to increase the accuracy and speed of diagnosis, as well as to prevent caries in children with type 1 diabetes, which will allow to reduce direct and indirect costs for the diagnosis and treatment of sick children, dental caries in children of this category through timely treatment, it serves to prevent a number of diseases in children of this category. Usually, several teeth are affected at the same time with caries in children. Therefore, timely treatment and prevention of dental caries in children with type 1 diabetes and prevention of dental diseases in the practice of dentists is appropriate if preventive measures are taken.

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