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ANALYSIS OF WATER FACTORS IN THERISK OF SPREADING DENTAL DISEASES

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Annotation:

The article studies the main indicators of the chemical composition of drinking water, which negatively affect the health of the population, and assesses the compliance with the hygienic standards of the central water supply. The role of water factors in the risk of the spread of diseases of the dentoalveolar system among adults and children (caries, fluorosis and stone diseases) is noted. In this regard, there is an improvement in the organization of dental care by improving the quality of the composition of drinking water and informing the population about the impact of the physical and chemical properties of drinking water on human health.

Keywords: dental diseases, factors, water supply, chemical properties, analysis.

Relevance: research on dental diseases continues to be one of the most common topics due to the large spread of dental diseases in the world, despite the improvement of preventive activities in dentistry [3]. Including caries - the most common disease of childhood. Numerous domestic and foreign studies indicate that the occurrence and spread of dental caries is determined by a wide range of risk factors, environmental determinants. Epidemiological studies of numerous external factors have shown that the incidence of caries is associated with drinking water and, specifically, with the content of fluoride in it. There were significant differences in the types of diseases in the district territories. These factors proved to be, characteristically, quite complex. Registration of dental diseases, especially caries, was observed with a decrease in fluorine in water of 0.8-1.0 mg/l. With lower levels of fluoride, the incidence of caries among the population increased significantly in proportion to the increase in the amount of fluoride. Exceeding the concentration of fluoride in drinking water above 1.5-1.7 mg/l led to an increase in another damage to the teeth - fluorosis [1], expressed in the appearance of dark spots on the teeth, and at a higher concentration - led to blackening of the teeth, defects in their shape and structure. It is important that the number of drinking water sources with an optimal fluoride content does not exceed 10-20% of all drinking water sources, up to 3-4% of water supply sources in Uzbekistan are with an increased fluoride content. In cities,

the amount of fluoride in drinking water is 0.4-0.5 mg/l. Characteristically, the fluoride deficiency can be partially compensated for by increased water consumption. Therefore, for countries with a hot climate, the content of fluorine in water of 0.7-0.9 mg/l fully satisfies the body's needs for fluorine due to increased water consumption. Some additional aspects of the role of fluoride in the prevention of dental caries are important. If a pregnant woman, when drinking water with a maximum concentration of fluoride, is normal or by fluoridation and mineralization with complexes of minerals, pastes, etc., then enamel with a normal fluoride content in the form of hydroxyfluorapatite is laid in the rudiments of the teeth of the fetus. Taking into account the extreme low-speed enamel exchange in the fetus (about 300 days), the laying actually guarantees such enamel that the baby will receive teeth with increased resistance to acid and caries, which persists for a number of years after their eruption. The protective ability of fluorides entering the body of pregnant women plays an important role in this. [5,6]. However, in pediatric dentistry, the artificial addition of fluorides to the diet of pregnant women is often recommended, but later this leads to premature overgrowth of fontanelles in the fetus, which contributes to the disruption of the labor activity of the woman in labor. [7]. Air pollution, increased fluorine content in drinking water leads to fluorosis of bones and teeth in the population of these regions, also seriously impairs the health of the population, leads to the emergence of infectious and non- infectious diseases of varying degrees affecting the oral cavity. So, for example, in chronic lung diseases, hormone treatment is accompanied by a decrease in salivation, a decrease in salivation, the appearance of bleeding gums, and an increase in dental caries [8]. In people with chronic diseases of parenchymal organs, the intensity of pathologies of the oral mucosa, stomatitis, and periodontitis increases [9]. In diseases of the gastrointestinal tract and the nervous system among children, the registration and intensity of dental caries increase. The content of macroelements above the norm in drinking water contributes to the deposition of salts in the body, which lead to kidney stones [11,18].

Aim of research was to study the importance of macro and microelements in the composition of drinking water in the spread of dental diseases among children living in the regions. Based on the data studied, it is necessary to develop preventive measures, recommended methodological manuals to reduce the prevalence of dental diseases (caries, fluorosis, periodontitis) among adults and children in Uzbekistan.

Materials and methods of the study: The object of the study was the sources of drinking water of the central water supply of the Bukhara region of the Romitan and Peshkun districts. The work was carried out in the laboratory of the sanitary and epidemiological service of the region. The analysis was carried out with the

instruments of water analyzers: "Atomic-emission spectrometer", "Spectrophotometer " also for analysis and indicator papers and reagents diphenylamine, nitric acid, Gross were used. To assess the quality of water supply sources for the population, the chemical composition and contamination of drinking water were studied. The main source of experimental information for determining the background concentrations of macro and microelements in the sources of the district was the data of stationary posts in the observation zone of the district territory, which passed the quality control of tap water in accordance with the requirements GOST No. 950:2011. [2,13,]. A comparative analysis of the spread of pathologies was carried out in the polyclinics of the district on the basis of a dental examination card. Caries diseases among children of different ages were studied.

Results and discussions of the study: The results of the study of centralized drinking water supply of districts showed that out of 815 samples, 13 samples did not meet hygienic standards, including the content of fluorine and iron below the norm. from 0.15 to 0.23 mg/l, which gives us the opportunity to analyze and evaluate the spread of dental pathologies in these areas. Some macronutrients showed a slight overestimation of the MPC in drinking water). Analysis of organoleptic indicators of water supply of drinking water in areas within the normal range. Smell - 1.8 points , turbidity - 2.6 mg / dm3, taste - 1 point, color - 15 degrees pH - 6.0, dry residue - 20220.0 mg / dm3. The content of chemical elements is shown in the table.

The results of the analysis of water samples of the districts.

Parameters	Unit of measurement	Results of the Romitan region	Results Peshkunsky district	Requirement №0318 15
RN	Unit	7	6-9	6-9
Turbidity	EMF	23	24	26
Chroma	Ggrad	18	19-20	20-25
Iron	mg/l	0.2	0.3-0.4	0.3-0.4
Calcium _ _	mg/l	4.3	--	-
Fluorine	mg/l	0.2	0.4	0.7
Rigidity	Mg-l / eq	6.8	7-10	7-10
Chlorides 450	mg/l	200	300	300
sulfates	mg/l	600	500	500
Nitrates	mg/l	36	40	40
Nitrites	mg/l	0.03	0.2-0.4	0.2-0.4

The polyclinic data showed the following statistics of dental examinations of children in two districts (Peshkunsky and Romitansky). Registration of the incidence of children with dental caries more at an early age from 1 to 3 years had a pathology with caries, which ranged from 12% to 45%. From 4 to 7 years old, these figures showed from 38 to 72%, from 7 to 12 years old from 72 to 94%, from 13-16 years old it was 88-81%. years (bite.)

The value of the incidence of dental caries among children and adolescents in districts

Age	The prevalence of caries Romitansky district in%	Prevalence of caries Peshkunsky district in%
1-2	7.90± 3.2 - 8.40± 3.2	5.56 ± 2.2 --4.90 ± 3.2
3-4	11.84 ± 3.2 - 13.84 ± 3.2	8.61 ± 4.1 -10.84 ± 3.2
4-6	381 ± 4.7 - 39.84 ± 3.4	28.55 ± 4.6 -29.84 ± 3.2
7-8	56.96±4.9 - 57.84±2.2-	44.02 ± 4.8 -46.34 ± 1.2

9-12	88.35 ± 3.7 – 88.93 ± 3.1	73.65 ± 3.9 - 75.84 ± 3.2
13-14	94.04 ± 2.5 - 96.84 ± 2.2	82.77 ± 3.3 - 65.56 ± 2.2
15-16	88.61% ± 2.5 - 81.76 ± 3.2	85.61% ± 2.5 - 85.76 ± 3.2

A comparative analysis allows us to obtain information about the state of the prevalence of dental diseases of a territorial nature. having a direct relationship with the concentration of fluoride contained in drinking water. As can be seen from the table, the intensity of dental pathologies Romitansky district is 1.5 times more in comparison with the incidence than in children of the Peshkunsky district. The dry, hot climate with high solar rays is not very favorable for the people. The area is located on a plain, almost the entire territory is covered with steppe sand. Steppe water from open and underground sources is rich in macro and trace elements . In drinking water sources, the fluorine content is from 0.38 to 0.43 mg/l. There are some mountainous areas (hills) in the Romitan region. Its climate also differs from the current region. Laboratory studies of the soil and water of open reservoirs revealed fluorine from trace amounts up to 0.18 to 0.23 mg/l. .[10]

The above trends in the change in the magnitude of the prevalence and intensity of dental caries, depending on age and area of residence, are clearly identified in a comparative analysis of these indicators of all ages [15,18,19]

Conclusion: in the course of the study, it turned out that the relationship between the concentration of fluoride in drinking water and the spread of dental diseases (in the territorial aspect) determines and suggests the need for a widespread introduction of a comprehensive prevention system. Development of guidelines, planning activities to reduce the spread of dental pathologies among the population of Uzbekistan.

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