Modern etiological and pathological aspects of dental caries

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Abstract. The subject of this article is the survey of evolution and factor mechanisms effecting formation of firm dental tissue pathological process of demineralized character. There is a description of clinical and epidemiological features of dental caries and also its connection with organs and systems of the whole organism. Different factors of this pathology from the medical point of view are given here in details.

Keywords: spreading, clinical impression, epidemiology, pathogenesis, dental caries etiology.

At present, the frequency of dental caries among the different age groups reaches to high levels [18, 20, 25]. It should be noted that one of the main causes of tooth loss are the complications of tooth decay. Besides, carious teeth can be a source of focal-related diseases of the musculoskeletal system, internal and other organs [5, 28]. Dental caries is the most common in the structure of pathological processes, which is why the studying from theoretical and practical point of view is very important. [29]. However, many studies have found multifactoral origin of pathological processes of dental hard tissues with their demineralization [2, 13].

According to I. Ushnitsky with co-authors [29], on conditions that biogeochemical lack of fluoride the level of dental caries in preschool and school-age children is much higher in the North compared with regions with normal content of these elements in the main sources of drinking water [29]. The people of South climatic zones have lower prevalence to caries.

When there is demineralization of dental hard tissues the manifestation of defense mechanisms of the pulp has observed in the form of mineral deposit crystals, as in the lumen of the dentinal tubules and intertubular dentin [4]. It should be noted that when the tooth spot is white it can restore the enamel structure spontaneously or in the process of remineralizing therapy, but the pigmented tooth spot, especially dark one, does not provide restoring of enamel structure in the process of remineralizing therapy [37]. However, this author argues that if the source of demineralization pigmented spots sums up to 4 mm I the dynamic monitoring is possible, and if the damaged area is 4 mm I or more, especially in extensive lesions, the preparation and sealing are necessary.

Age-related changes in the body affect the rate of occurrence, location, nature of the current decay, which exactly determines the tactics of prevention and treatment materials. According to researchers of different countries, the problem of the prevention and treatment of dental caries in primary teeth of young children from 1 to 3 years is the most acute and almost unresolved [47].

The certain health condition of organism affects the level of dental caries. Thus, there is a high level of susceptibility of hard tissue teeth caries and its complications among children with cerebral palsy [12]. Epidemiological studies show that 2-2.5 people per 1000 population suffer from cerebral palsy in industrialized countries [3]. Among adults with cardiovascular disease and systemic osteoporosis, kidney disease one can observe unfavorable clinical and epidemiological situation of basic dental disease [34]. According to M. Simonova with co-authors [35], the dental complications status among patients with Shegren syndrome is much higher than the average age values. Besides, all patients are characterized by rapid tooth decay through cervical caries, tooth cutting edge, fragility and pathological abrasion of enamel [35]. Significant impact on the frequency and severity of dental caries susceptibility contributes to the presence of several somatic diseases [33].

Thus, the frequency and severity of the pathological processes of teeth hard tissue happen

because of specific regional influence, health and socio-economic factors that require research considering environmental and biological reasons in the formation and development of dental caries to improve treatment and preventive care for different age groups.

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