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Features of Hypertrophic Gingivitis in Adolescents

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Abstract

Inflammatory diseases of the periodontium remain one of the most pressing problems of modern dentistry. Currently, there is an increase in the number of patients with inflammation of the soft tissues of the periodontal prevalence in their structure of generalized forms of gingivitis and periodontitis. (Hagman -Gustafsson A., 2015). According to the WHO, more than 80% of the population suffers from periodontal diseases, leading to tooth loss, the appearance of foci of chronic infection in the oral cavity, decreased body reactivity, microbial sensitization and other disorders. Periodontal diseases have recently acquired the significance of both a general medical and social problem (Tsepov L.M.,Orekhova L.Yu., 1999; Kirsanov A.I., Gorbacheva I.O., 2000; Khomenko L.A., Tchaikovsky Yu.B., S- Zichuk O.V. et al., 2010; Pepelassi E., Tsarouchi D.E., Komboli M., 2011). In childhood, mainly inflammatory periodontal diseases (gingivitis, periodontitis). According to the latest epidemiological myological research periodontal disease in childhood high: at 12 years old - 34%, at 15 years old - 41% (Yanushevich O.O., Kuzmina E.M., Kuzmina I.N. et al.,2009). Teenagers have inflammatory diseases.

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Periodontal disease occurs in 90% of cases. Their development The existence and course of this period have their own characteristics. Decreased luteinizing and follicle-stimulating hormones within physiological norm enhances the symptoms of chronic hypertrophic gingivitis in the presence of factors aggravating its course (shallow vestibule of the oral cavity, vertical incisal disocclusion, tight position and anomalies in the position of individual teeth). Juvenile gingivitis can occur in girls for a year and a half before their menstruation. Often, hormonal gingivitis is accompanied by an increase in tooth mobility due to osteoporosis of the jaw bone. At the same time, the prevalence and

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intensity of inflammatory periodontal reactions increases with age. Despite the improvement of diagnostic methods, the disease more often diagnosed in a late stage. Well-known but, in adolescents and youth, the course of inflammatory periodontal diseases is particularly aggressive and resistant to treatment (Bezrukova I.V., Grudyanov A.I., 2002; Mamaev E.V., 2007). Despite the constant study of this topic, the pathogenesis of inflammatory periodontal disease in children and adolescents age is still largely unclear. It is generally recognized that gingivitis and periodontitis is an inflammatory reaction that occurs in the gums due to the pathogenic action of microorganisms.

The developing inflammation takes on a chronic character over time, recurs and ultimately leads to destruction of the gingival joint, periodontal ligament, alveolar resorption bone tissue (Barer G.M., German T.N., 1996; Ivanov B.C., 1998; Voznaya I.V., 2005). In childhood, for a certain period of time, basic periodontal structures morphologically and functionally immature that and determines the features of the course of inflammatory processes (Abramova O.E., 2006; Vodolatsky M.P., Pavlov A.A., Nekrasova A.A., 2011). Inflammation of periodontal tissues changes the basic biochemical and immunological parameters characterizing the level of the inflammatory process, indicators of destruction of the tissues of the oral cavity, the degree of endogenous intoxication, which allows it can be used as markers of the state of periodontal tissues and in assessing the effectiveness of treatment (Vavilova T.P. 2008; Danilova I.G., Medvedeva S.Yu., Gette I.F. et al., 2010). The study of these parameters in the treatment of periodontal disease in children and adolescents is very promising. The results of studies on the etiology and pathogenesis of periodontal diseases in children and adolescents are different, the role of microbial, traumatic, immune, vascular and other factors is comprehensively studied.

However, it is extremely important in the theory of the development of periodontal pathology that the question is about the ratio of internal and external factors, which Arckovy pointed out in 1903. The etiological factor almost never manifests itself as one “specific culprit” and only one specific disease, it not only affects the body, but interacts with it. The state and interaction of the main regulatory systems of the body, as well as the reaction to any pathogenetic effect, cannot but affect the state of periodontal disease, leading to tissue destruction. At the same time, periodontium manifests itself as a highly sensitive indicator of functional and morphological changes in the body. Disorders of innervation and blood circulation in the periodontium create favorable conditions for the development of diseases in the vast majority of patients. And here the autonomic nervous system plays an integrating role in the regulation of metabolic processes and its continuous adjustment to a constantly changing rhythm. But this link has so far received insufficient attention in adolescent dentistry.

In this regard, today, one of the urgent problems in the clinical periodontology of adolescence is the search for fundamentally new approaches to the development of methods differential diagnosis of

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periodontal diseases, namely: assessment of changes in periodontal tissues depending on the state of the body. Moreover, the diagnosis of conditions immediately preceding the emergence of the clinical picture of diseases — functional (prenosological) conditions on the verge of norm and pathology, in which reversible changes are still possible, is especially relevant.

The virulence of periodontal pathogens is due to a complex of factors. The following pathogenic properties appear to be most important.

Colonization. In the gingival sulcus, bacteria attach to epithelial cells and other bacteria of the subgingival dental plaque. Subsequent spread of bacteria or their offspring may be accompanied by adhesion to tissues beyond the gingival sulcus. Spirochetes under the influence of chemotaxis can reach the gingival sulcus, due to mobility - their function axial threads.

Invasion. P. gingivalis and A.actinomycetemcomitans can initiate their own capture by gingival epithelial cells (not related to phagocytic cells). Internalized bacteria are protected from the immune system and can affect its effector mechanisms, for example, production cytokines. Spirochetes and other microbes penetrate the gum tissue, causing inflammation and damage.

Toxins A. actinomycetemcomitans produce a strong leukotoxin that kills human neutrophils and monocytes (due to spore formation and apoptosis induction). Bacteria can “pack” leukotoxin into membrane vesicles that easily penetrate tissue.

Enzymes and toxic metabolites. To obtain nutrients - peptides - P gingivalis forms a series of proteolytic enzymes. Three proteases also destroy the effector immunity molecules, structural components of tissues, and iron or hemin-containing molecules. Fatty acids formed by bacteria can inhibit cell division and chemotaxis of neutrophils.

Immunosuppression factors. A_actinomycetemcomitans forms a toxin of lethal cell swelling, which suppresses the most important functions of lymphoid cells, for example, division, as well as the formation of antibodies and cytokines. There is a further loss of connective tissue elements and bone (under the influence of activity osteoclasts). Along the connective epithelium in the gingival sulcus or gingival pocket, neutrophils create a barrier, which is considered the first line of defense against the microbes of tooth plaque [4.5.6].

Indeed, neutrophil function deficits are clinically manifested by early and severe periodontitis. With less pronounced defects of neutrophils, early and rapid destruction of periodontal tissue is also sometimes observed. However, the function of neutrophils can be not only protective: when neutrophils interact with bacteria in the periodontal tissues can release toxic substances that can damage the cellular components of the periodontium. In tissue destruction, the resulting immune complexes may be involved. Since general and local factors are involved in the occurrence of periodontal diseases, the correction of metabolic disorders and functions in inflammatory

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periodontal diseases should be comprehensive and include general and local therapeutic measures, including anti-inflammatory and anti-allergic therapy with cyclooxygenase inhibitors (acetylsalicylic acid), the introduction of antioxidant and osteotropic funds.

Some authors note a reduction in the period of treatment of periodontal diseases after administration of a complex of direct antioxidants: ascorbate, floculin, vitamin E. There are recommendations regarding the inclusion of vitamins A, E, K. Dibunol (iodinol) is the most studied among synthetic AOs. It is water-insoluble AO, therefore its parenteral administration is impossible, in the clinic it is used only topically. According to several authors, it normalizes blood circulation in periodontal tissues, inhibits lipid peroxidation, and has weak bactericidal and immunostimulating properties. In periodontal practice, for the treatment of mild gingivitis and periodontitis, effective dosage forms of dibunol are recommended: 5% and 10% liniment, applications and dressings, 10% phonophoresis solution. There is evidence that the therapeutic effect in the treatment of periodontitis is provided by prisetin in the form of a 20% gel - a herbal preparation belonging to the group of bioflavonoids. The fastest effect was obtained in the treatment of catarrhal gingivitis and exacerbation of mild chronic periodontitis [1.2.3].

There are also recommendations of individual researchers on the use of antioxidant enzyme preparation obtained from biomass of plant cells containing catalase, peroxidase, phospholipids and trace elements for local gingivitis therapy. According to literature, the positive dynamics of clinical parameters in chronic periodontitis was observed already 2-3 days after treatment with a dietary supplement on based on spirulins and chlorella containing antioxidant enzymes and catalase, coenzyme Q10. A number of authors used a similar supplement in the form of applications for gums 2 times a day for 10 days.

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