

Comparative Approach to the Treatment of Inflammatory Diseases Periodontium in Individuals With Chronic Viral Hepatitis B And C

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Annotation: Chronic viral hepatitis B and C represent significant global health challenges, affecting millions of individuals worldwide and creating complex systemic health implications that extend far beyond hepatic dysfunction. The intricate relationship between systemic diseases and oral health has garnered increasing attention in contemporary medical and dental research, with mounting evidence suggesting bidirectional interactions between hepatic pathology and periodontal disease.

Keywords: chronic viral hepatitis b, chronic viral hepatitis c, periodontal disease, inflammatory diseases, periodontium, comparative treatment approach

Introduction. Parenteral transmission of viral hepatitis (VH) pathogens is one of the most serious and pressing problems in medical science and practical healthcare. Currently, at least 9 types of human viral hepatitis (A, B, C, D, E, G, F, TT) are known, among which parenteral viral hepatitis with severe and chronic forms with liver cirrhosis and hepatocellular carcinoma deserves special attention. Currently, more than 350 million people are carriers of this infection, and annually about 2 million people die from hepatitis-related diseases.

Chronic hepatitis is a systemic pathology that frequently affects the oral cavity. In chronic hepatitis, the spectrum of extrahepatic pathology includes lesions of the salivary glands and oral mucosa [1]. At the same time, the frequency of development of inflammatory diseases of the periodontium in chronic hepatitis of various etiologies, information on the mechanisms of formation: features of the course of joint diseases, treatment effect are few and contradictory [2, 3]. This determines the relevance of studying the clinical signs and diagnostic criteria of periodontal diseases in patients with chronic hepatitis B and C.

Viral hepatitis B and C infections affect approximately 350 million and 170 million people globally, respectively, with chronic forms of these infections leading to progressive liver damage, cirrhosis, and hepatocellular carcinoma. Concurrently, periodontal diseases remain among the most prevalent chronic inflammatory conditions affecting human populations, with severe periodontitis affecting nearly 11% of the global adult population.

The association between chronic viral hepatitis and periodontal disease is multifaceted, involving shared risk factors, immunological dysfunction, and systemic inflammatory processes. Individuals with chronic hepatitis B and C often present with compromised immune responses, altered cytokine profiles, and increased susceptibility to secondary infections. These systemic alterations can significantly impact the periodontium's response to bacterial challenge and influence the progression of periodontal inflammation.

The hepatic synthesis of acute-phase proteins, coagulation factors, and immune mediators becomes compromised in chronic viral hepatitis, potentially affecting wound healing, inflammatory resolution, and tissue regeneration in periodontal tissues. Furthermore, the chronic inflammatory state associated with viral hepatitis may exacerbate periodontal inflammation through elevated systemic inflammatory markers and oxidative stress.

Managing periodontal disease in patients with chronic viral hepatitis presents unique clinical challenges. Traditional periodontal therapy protocols may require modification to account for altered immune responses, bleeding tendencies, and potential drug interactions with antiviral medications. The

effectiveness of conventional periodontal treatments may be compromised in these patients, necessitating adapted therapeutic approaches and enhanced monitoring protocols.

Current literature suggests that standard periodontal treatment modalities may yield different outcomes in patients with chronic viral hepatitis compared to systemically healthy individuals. This disparity underscores the need for evidence-based comparative studies to establish optimal treatment protocols for this specific patient population.

The growing recognition of oral-systemic health connections, combined with the substantial global burden of both viral hepatitis and periodontal disease, highlights the critical need for specialized treatment approaches. Understanding the differential responses to periodontal therapy in patients with chronic viral hepatitis B and C is essential for developing targeted, effective treatment strategies that address both oral health and systemic considerations.

This comparative analysis aims to evaluate the efficacy of various periodontal treatment modalities in individuals with chronic viral hepatitis B and C, providing evidence-based recommendations for optimal therapeutic approaches in this challenging patient population.

The development of inflammatory diseases of the periodontium is closely related to the disruption of the immune defense of the mouth and the body as a whole, therefore, it is important to assess the state of the immune system by analyzing the content of cytokines in both cases. There is no information on the diagnostic and prognostic significance of apoptosis and proliferation of dental pulp epithelial cells and in chronic hepatitis of various etiologies.

It is clear that approaches to treating inflammatory diseases of the periodontium against the background of chronic hepatitis should be built taking into account the universal pathogenetic mechanisms of liver and periodontal damage.

The study of the effectiveness of using ursodeoxycholic acid (UDHC) in the complex treatment of inflammatory periodontal diseases in patients with chronic hepatitis, which has many effects, including cytoprotective, anti-apoptotic, and immunomodulatory effects of secretions, appears promising [2, 3].

The aim of the study is to substantiate the clinical and morphological status of periodontal tissues in chronic hepatitis B and C.

Materials and methods of research. To study the clinical and morphological changes in periodontal tissues, a thorough periodontal examination was conducted in 35 individuals with periodontal diseases against the background of chronic hepatitis B and C - the main group, as well as in 20 patients without somatic pathology. They were taken as a comparison group.

The diagnosis of periodontal diseases was carried out in accordance with the terminology and classification of periodontal diseases approved by the XVI plenum of the All-Union Dental Society (1983). Patients underwent a comprehensive clinical and radiological examination of the periodontal tissues.

Changes in the color of the gingival mucosa, the degree of gingival bleeding (Muhlemann, 1971), the depth of periodontal pockets (WHO, 1989), and pathological tooth mobility (Fleszar T J et al., 1980) were assessed.

Index assessment of the condition of periodontal tissues was also carried out using the simplified Green-Vermilion (1965) hygiene index, papillary-marginal-alveolar.

Research results. At the first stage of the study, the dental status of patients with chronic hepatitis of viral and non-viral etiology was studied. Extrahepatic manifestations of chronic hepatitis were diagnosed in 17% of patients, significantly more ($p < 0.05$) in chronic HCV-hepatitis (26.9%), compared to steatohepatitis (7.4%).

Dental extrahepatic manifestations of chronic HCV infection and basic xerostomy as part of Sjögren's syndrome were diagnosed in 7.7% of patients.

Complications of xerostomy were cheilitis (7.7%), glossitis (5.8%), stomatitis (5.8%). Sjögren syndrome, accompanied by general severe periodontitis. Multiple dental caries was noted in 78.8% of patients with chronic hepatitis C and in 61.1% of patients with chronic steatohepatitis.

Clinical and instrumental analysis of the condition of periodontal tissues allowed us to establish that the clinical course and severity of periodontal lesions in chronic hepatitis are related to the etiology of liver damage and the level of clinical and laboratory activity. Inflammatory diseases of the periodontium are more severe. Against the background of chronic active hepatitis of viral or alcoholic etiology, pronounced cytotoxicity is observed, most patients have moderate (46.2-50%) chronic generalized periodontitis, less often mild (26.8-27.8%) general periodontitis, characterized by the development of severe (13.5-16.5%) periodontitis and chronic general catarrhal gingivitis (13.5-5.5%).

Chronic non-alcoholic steatohepatitis is most often accompanied by mild chronic periodontitis (52.8%), less frequently by general moderate periodontitis (22.2%), chronic catarrhal gingivitis (16.7%), or severe periodontitis (8.3%).

It is possible that the development of more severe forms of periodontitis against the background of chronic hepatitis of viral and alcoholic etiology is associated with an immunosuppressive effect characteristic of chronic HCV-infection and ethyl alcohol [4]. Periodontal lesions are not excluded in conditions of liver dysfunction due to the toxic effects of ethanol.

A correlation has been established between the severity of inflammatory diseases of the periodontium and the activity of hepatitis. With high activity of the pathological process in the liver, the signs of periodontal damage are more pronounced than with low activity [4].

Homeostatic syndrome is accompanied by more pronounced changes in the periodontium and bone destruction of the gingival alveolar processes. In patients with chronic hepatitis and inflammatory diseases of the periodontium, the degree of systemic decrease in the mineral density of the bones of the external and peripheral skeleton (osteoporosis and osteopenia) during cholestasis is related to the severity of the clinical condition of the periodontium and the degree of resorption of the alveolar processes ($r = 0.683$) [5].

When studying cell renewal processes, chronic periodontitis, unlike gingivitis, is characterized by the predominance of proliferative activity of gingival epithelial cells with moderate enhancement of apoptosis. No significant changes in the proliferation and apoptosis of gingival epitheliocytes were observed in chronic gingivitis [6].

Proliferation and apoptosis of gingival epithelial cells in chronic HCV-hepatitis compared to steatohepatitis (I K1 $67-351.5 \pm 1$) (I III-b7 $-38.0 \pm 1.7\%$, Iapopt -0.72 ± 0.06) are not observed. Iapopt -0.71 ± 0.05 , $p < 0.05$). Undoubtedly, these changes are determined by the nature of inflammatory-destructive changes in the periodontium, which are more pronounced against the background of viral liver damage.

In the second stage of our study, patients with chronic generalized periodontitis against the background of chronic hepatitis were divided into two groups with the same age and activity of the pathological process in the liver and gums.

And at the heart of changes in the proliferative activity and apoptotic death of gingival epitheliocytes in periodontitis lies a regular disruption of local regulatory mechanisms, primarily cytokine homeostasis.

The study of the composition of oral fluid cytokines showed that in chronic gingivitis, the amount of anti-inflammatory (IL-1, INF- γ) and anti-inflammatory mediators (RANTES, IL-10) increases in oral fluid, which reflects the balance between populations of immunocompetent cells that provide a cellular and humoral immune response and indicates the simultaneous induction of the inflammatory process and restorative mechanisms [7].

Chronic periodontitis is characterized by a local cytokine imbalance with the predominance of a mediator with immunosuppressive properties (IL-10) and a high concentration of IL-1. It should be

noted that the increase in the concentration of IL-1 β in periodontitis exceeded the increase in the level of RAIL, which undoubtedly has significance in the development of periodontitis.

The increase in the number of studied cytokines in oral fluid is associated with the severity of periodontitis (hil-1 β ~ 0.633, ril = 0.518, hil-yu = 0.582), the depth of periodontal pockets (hil-1 β - 0.558), the RMA index. liq (hyl-1p = 0.620), the PI index (hil-1 β = 0.593) and the rate of gingival bleeding (hil.10 = 0.604). This indicates that changes in the concentration of IL-1 β , RAIL, and IL-10 in oral fluid can be considered an indicator of the severity of chronic periodontitis.

Conclusion. An important factor in the morphogenesis of chronic periodontitis is the disruption of the processes of proliferation and apoptosis of the gingival mucosa epitheliocytes. Against the background of impaired local cytokine regulation, the processes of cellular renewal of the gingival epithelium shift towards proliferation. In periodontitis, a chronic recurrent inflammatory-destructive process develops.

When assessing the clinical picture by index indicators in the dynamics of the disease, it was established that practically all indicators reflecting the severity of periodontal pathology significantly improved in the 1st group from the start of therapy on the 15th-16th day compared to the group with traditional treatment methods. Side effects were not observed when using cycloferon liniment in patients of the 1st group, and drug tolerance was good. Clinical examination of patients for 6 months allowed us to say that the exacerbation of periodontitis was observed in 12% of cases in the 1st group, in 48% - in the 2nd.

References:

1. Assessment of changes in the condition of periodontal tissues in workers exposed to epoxy resin. Rizayev J.A., Nazarova N.S. The American journal of medical sciences and pharmaceutical research. 2020; 2: 14-17
2. Rizayev Zh.A., Nazarova N.Sh. State of local immunity of the oral cavity in chronic generalized periodontitis. Bulletin of Science and Education. 2020; 14 (92): 35-40
3. Nazarova N.Sh., Rakhmanova N.R. State of local immunity of the oral cavity in chronic generalized periodontitis. Achievements of science and education. 2020; 6 (60): 65-71.
4. Nazarova N.Sh., Norbutaev A.B., Ismailova S.O. "State of hard tissues of teeth and periodontium in tobacco workers." Achievements of science and education. 2020; 6 (60): 59-65.
5. Rizayev Zh.A., Nazarova N.Sh. State of local immunity of the oral cavity in chronic generalized periodontitis. Bulletin of Science and Education. 2020; 14 (92); 35-40
6. Rizayev Zh.A., Nazarova N.Sh. Effectiveness of combined treatment of periodontal and mucosal diseases of workers with harmful production factors. Problems of Biology and Medicine. 2020; 3 (119): 85-88.