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MODERN APPROACHES TO DIAGNOSIS AND INTERDISCIPLINARY ASPECTS OF DENTAL STATUS IN CHRONIC DIFFUSE LIVER LESIONS

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Abstract
Chronic diffuse liver lesions are a significant medical and social problem characterized by systemic effects on the body, including organs and tissues of the oral cavity. In recent years, there has been increasing interest in studying the relationship between liver pathology and dental status, due to common pathogenetic mechanisms, including immune, metabolic, and vascular disorders. The purpose of this review article is to analyze current data on the impact of chronic diffuse liver diseases on the oral cavity and substantiate the need for an integrated diagnostic approach. Clinical manifestations, pathogenetic mechanisms, features of the dental status in chronic hepatitis and cirrhosis of the liver, as well as modern diagnostic methods and interdisciplinary interaction are considered. It has been shown that the progression of liver pathology is accompanied by a deterioration in dental parameters, which requires the integration of efforts of dentists and general practitioners.

Keywords: Chronic liver diseases, dental status, cirrhosis of the liver, chronic hepatitis, oral mucosa, periodontal disease, diagnosis.

Introduction

Chronic diffuse liver lesions occupy one of the leading places in the structure of somatic pathology and are characterized by a steady increase in prevalence, especially in the context of metabolic and toxic factors. The liver is a central organ that provides metabolic homeostasis, detoxification, and immunological regulation, so its chronic damage leads to the development of systemic disorders affecting various organs and tissues, including the oral cavity. In this context, the patient's dental status becomes not only a reflection of the local condition, but also an indicator of systemic changes in the body[4,18].

Modern studies indicate that patients with chronic liver diseases are much more likely to have pathological changes in the oral cavity, including inflammatory and dystrophic lesions of the mucous membrane, periodontal diseases, as well as an increase in the prevalence of caries. These changes are caused by a complex interaction of factors, among which protein and mineral metabolism disorders, immunodeficiency conditions, and changes in microcirculation play a key role[11,15].

One of the leading pathogenetic mechanisms is a violation of synthetic liver function, leading to a deficiency of plasma proteins, including albumins and blood clotting factors. This is accompanied by

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the development of hemorrhagic syndrome, which is clinically manifested by bleeding gums and increased traumatism of the oral mucosa. An additional factor is portal hypertension, which contributes to impaired venous outflow and the development of stagnant phenomena in the tissues[15].

Immunological changes in chronic diffuse liver lesions also play a significant role in the formation of dental pathology. A decrease in the activity of cellular and humoral immunity contributes to increased susceptibility to infectious agents, which leads to the development of chronic inflammatory processes in periodontal tissues and the oral mucosa. Violations of local immunity, including a decrease in the content of immunoglobulin A in saliva, further exacerbate the course of diseases[16].

In recent years, special attention has been paid to changes in the properties of oral fluid in patients with liver pathology. Decreased salivation, changes in the viscosity and buffer capacity of saliva create favorable conditions for the development of caries and periodontal diseases. Xerostomia, which is often detected in patients with cirrhosis of the liver, leads to a violation of the processes of self-cleaning of the oral cavity and a decrease in antimicrobial protection[7,13].

The clinical manifestations in the oral cavity in chronic liver diseases are diverse and depend on the stage and severity of the underlying disease. In chronic hepatitis, the changes are usually moderate and include inflammatory processes in periodontal tissues, catarrhal gingivitis and initial forms of periodontitis. As the disease progresses and liver cirrhosis develops, there is an increase in pathological changes, including pronounced forms of periodontitis, atrophic changes in the mucous membrane, glossitis, cheilitis, and stomatitis[1,17].

Cirrhosis of the liver is characterized by the most severe changes in the oral cavity, which is associated with profound metabolic disorders, severe intoxication and a decrease in the regenerative potential of tissues. Such patients often show signs of mucosal atrophy, ulcerative necrotic lesions, as well as severe bleeding of the gums. An additional clinical sign may be a specific bad breath associated with metabolic disorders and accumulation of toxic products[14].

Modern approaches to assessing dental status in chronic diffuse liver lesions involve the use of complex diagnostics, including clinical, laboratory and instrumental methods. The clinical examination should include an assessment of the hygienic condition of the oral cavity, the prevalence of caries, the condition of periodontal tissues and mucous membrane. The use of index systems makes it possible to standardize assessment and conduct comparative analysis between different patient groups [2, 12].

Laboratory diagnostic methods play an important role in the assessment of systemic disorders accompanying liver pathology. Biochemical parameters of liver function, coagulogram and immunological studies make it possible to identify the severity of the pathological process and assess its impact on dental status. The integration of these data with clinical observations provides a more accurate diagnosis and allows the development of individualized treatment approaches[18].

End-stage liver disease, or cirrhosis, is a consequence of long-term damage to liver tissue [1]. Liver dysfunction affects all body systems, including the oral cavity. Cholestatic liver disease affects bone structure and can seriously affect teeth and jaws [2]. The only available treatment for end-stage liver disease is liver transplantation. Although this is extremely important for the patient, after transplantation for many years, special care and vigilant precautions are also necessary [3].

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Oral and dental complications, as a common source of infection, should be monitored and treated prior to transplant operations. An examination of the oral cavity and a dentist's permission are required, implying the absence of any signs of infection [4]. This protocol is performed because immunosuppressive drugs such as tacrolimus and cyclosporine, prescribed after transplantation, may predispose the recipient to sepsis and infection [5]. Therefore, almost all patients undergoing liver transplantation are recommended to eliminate any infections and their foci [6].

There is no evidence of the benefits of optimal dental examination before transplantation [7]. In addition, there are no documented studies examining the relationship between oral manifestations and mucosal lesions and end-stage liver disease [8].

There are reports of manifestations on the oral mucosa after liver transplantation. Lesions such as tongue cracks, candidiasis, increased risk of viral infections such as herpes simplex virus type 1 and type 2 or cytomegalovirus, graft-versus-host reaction, and oral cancer are more common after transplantation [9]. In addition, patients who have undergone liver transplantation surgery often take several medications with various side effects that affect the condition of the oral cavity and teeth, including xerostomia and hyposalivation, which can lead to an increased risk of oral infections and subjective dry mouth syndrome. This hyposalivation increases with an increase in the daily dose and amount of medications [10]. Moreover, a thorough examination of the lips and mucous membranes of the oral cavity to identify possible neoplasms is crucial after transplantation [11].

An important aspect is the interdisciplinary interaction between dentists, gastroenterologists and therapists. Patients with chronic liver diseases require a special approach to dental procedures that take into account the risk of bleeding, reduced immune defenses, and possible drug interactions. An integrated approach makes it possible to increase the effectiveness of treatment and reduce the risk of complications [12].

Despite a significant number of studies devoted to this problem, there are still a number of unresolved issues related to the early diagnosis of dental manifestations of liver pathology and the development of effective preventive measures. Further research is needed to study the pathogenetic mechanisms and develop new diagnostic criteria.

Conclusion

Thus, the analysis of modern data indicates a close relationship between chronic diffuse liver lesions and the condition of the oral organs. The progression of liver pathology is accompanied by a deterioration in dental status, which justifies the need for a comprehensive diagnostic approach and interdisciplinary interaction. The development and implementation of such approaches will improve the quality of medical care for this category of patients and improve their quality of life.

References

1. Azatyan V. et al. Morphological changes in the oral mucous membrane in viral hepatitis C patients: A cross-sectional study //International Journal of Environmental Research and Public Health. – 2022. – Т. 19. – №. 15. – С. 9003.
2. Andersson L., Kahnberg K. E., Pogrel M. A. (ed.). Oral and maxillofacial surgery. – John Wiley & Sons, 2012.

Web of Medicine: Journal of Medicine, Practice and Nursing
webofjournals.com/index.php/5

3. Bagán J. V. et al. Oral lichen planus and chronic liver disease: a clinical and morphometric study of the oral lesions in relation to transaminase elevation //Oral surgery, oral medicine, oral pathology. – 1994. – Т. 78. – №. 3. – С. 337-342.
4. Christen A. G. Dentistry and the alcoholic patient //Dental Clinics of North America. – 1983. – Т. 27. – №. 2. – С. 341-361.
5. Di Stasio D. et al. Hepatitis C Virus (HCV) infection: Pathogenesis, oral manifestations, and the Role of Direct-Acting Antiviral therapy: A Narrative review //Journal of Clinical Medicine. – 2024. – Т. 13. – №. 14. – С. 4012.
6. Elhusseiny G. A., Saleh W. Oral health in children with chronic kidney disease, hemodialysis, and renal transplantation: a comprehensive narrative review of the oral manifestations and dental implications //Clinical Medicine Insights: Pediatrics. – 2024. – Т. 18. – С. 11795565241271689.
7. Heemann U. et al. Albumin dialysis in cirrhosis with superimposed acute liver injury: a prospective, controlled study //Hepatology. – 2002. – Т. 36. – №. 4. – С. 949-958.
8. Golla K., Epstein J. B., Cabay R. J. Liver disease: current perspectives on medical and dental management //Oral Surgery, Oral Medicine, Oral Pathology, Oral Radiology, & Endodontics. – 2004. – Т. 98. – №. 5. – С. 516-521.
9. Guggenheimer J. et al. Dental health status of liver transplant candidates //Liver transplantation. – 2007. – Т. 13. – №. 2. – С. 280-286.
10. Kumari M. et al. Evaluation of dental health in terminally ill patients //Journal of Medicine and Life. – 2020. – Т. 13. – №. 3. – С. 321.
11. Magdy S. et al. Evaluation of the Oral Health Status and the Impact of Oral Health Promotion in a Group of Egyptian Children with Chronic Liver Disease //Ain Shams Dental Journal. – 2024. – Т. 36. – №. 4. – С. 36-44.
12. Mays J. W. et al. Oral chronic graft-versus-host disease: current pathogenesis, therapy, and research //Oral diseases. – 2013. – Т. 19. – №. 4. – С. 327-346.
13. Nunn J. H. et al. Oral health in children with renal disease //Pediatric Nephrology. – 2000. – Т. 14. – №. 10. – С. 997-1001.
14. Olczak-Kowalczyk D. et al. Oral health and liver function in children and adolescents with cirrhosis of the liver //Gastroenterology Review/Przegląd Gastroenterologiczny. – 2014. – Т. 9. – №. 1. – С. 24-31.
15. Odell E. W. Cawson's Essentials of Oral Pathology and Oral Medicine-E-Book: Cawson's Essentials of Oral Pathology and Oral Medicine-E-Book. – Elsevier Health Sciences, 2024.
16. Pavlica Z. et al. Periodontal disease burden and pathological changes in organs of dogs //Journal of veterinary dentistry. – 2008. – Т. 25. – №. 2. – С. 97-105.
17. Shyamanur B., Khalili K., Elbanna K. Y. The impact of diffuse liver disease on liver lesion detection and characterization //Canadian Association of Radiologists Journal. – 2026. – Т. 77. – №. 2. – С. 380-388.
18. Zahed M. et al. Oro-dental health of patients with chronic hepatic failure //International Journal of Organ Transplantation Medicine. – 2020. – Т. 11. – №. 3. – С. 115.

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