THE IMPACT OF LIVER DISEASES ON ORAL CAVITY STATUS

Kazakova N.N.
Kurambayeva N.Ya.
https://orcid.org/ 0000-0002-9434-540X
Bukhara state medical institute, Bukhara. Uzbekistan
MEMORIAL HOSPITAL" LLC (Khorezm, Uzbekistan)
https://doi.org/10.5281/zenodo.18243662

ARTICLE INFO

Received: 12TH January 2026
Accepted: 13th January 2026
Online: 14th January 2026

KEYWORDS

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ABSTRACT

Chronic and acute liver diseases lead to metabolic and hematological changes in the body, which directly affect the condition of the oral mucosa (OM). In clinical dentistry, the manifestation of jaundice (icterus) on the oral mucosa is considered a significant diagnostic sign of liver diseases [1,4,5]. According to Eremin A.V. and co-authors, jaundice is caused by an increase in bilirubin levels in the blood (hyperbilirubinemia) and its accumulation in the skin, sclera, and mucous membranes. Due to liver diseases (e.g., hepatitis, cirrhosis), hepatocytes (liver cells) lose their ability to process bilirubin and excrete it with bile, primarily leading to an increase in conjugated bilirubin [2,3,6,7].

Relevance: Chronic and acute liver diseases lead to metabolic and hematological changes in the body, which directly affect the condition of the oral mucosa (OM). In clinical dentistry, the manifestation of jaundice (icterus) on the oral mucosa is considered a significant diagnostic sign of liver diseases [1,4,5]. According to Eremin A.V. and co-authors, jaundice is caused by an increase in bilirubin levels in the blood (hyperbilirubinemia) and its accumulation in the skin, sclera, and mucous membranes. Due to liver diseases (e.g., hepatitis, cirrhosis), hepatocytes (liver cells) lose their ability to process bilirubin and excrete it with bile, primarily leading to an increase in conjugated bilirubin [2,3,6,7].

Research aim: the objective of this research is to systematically analyze and define the characteristic clinical manifestations of chronic and acute liver diseases (such as cirrhosis and hepatitis) in the oral cavity, including specific changes in the oral mucosa and tongue.

Research methods and methodology: Taking into account the various principles of modern scientific knowledge, we developed our research methodology to adequately address the stated objective.

Research results:

The manifestation of jaundice on the OM has specific features that depend on the course and severity of the liver disease. The accumulation of bilirubin appears on the OM as a yellowish or yellowish-bluish tint. This is especially evident in areas with a thin epithelial layer and rich vascularization. Clinical studies from 2019–2022 indicate that the primary localization of jaundice on the OM is the soft palate and the ventral surface of the tongue (area

of the sublingual veins). These highly vascularized areas better reflect bilirubin accumulation. The color of the OM can change from light yellow to a deep yellow-green hue (in cholestasis) [1,4,10].

In addition to jaundice, trophic changes in the tongue are also observed in liver diseases, often manifesting as glossitis (inflammation of the tongue). In the decompensation stages of liver cirrhosis or chronic hepatitis, the tongue may appear swollen, red, often dry, and present with geographic tongue changes. Against the background of jaundice, the tongue may take on a yellowish tint [7,6,9].

Studies by Alberts C.J. have investigated how the impairment of liver function (especially protein synthesis and absorption of fat-soluble vitamins) leads to deficiencies in B-group vitamins (particularly B12, folic acid) and vitamins A, D, E, K. This exacerbates inflammation and pain in the tongue. The impairment of liver function (especially protein synthesis and absorption of fat-soluble vitamins) leads to deficiencies in B-group vitamins (particularly B12, folic acid) and vitamins A, D, E, K. This, in turn, intensifies inflammation and pain in the tongue [1,2,7].

The changes observed on the tongue in chronic diffuse liver diseases (CDLD) are the result of trophic disturbances in the tongue tissues, and deficits in vitamin and protein metabolism. The tongue typically acquires a red-raspberry or deep red-bluish tint. This color change is often associated with the atrophy of the lingual papillae and the prominence of blood vessels. The flattening or complete loss of the lingual papillae leads to false atrophy or atrophic glossitis. Consequently, the tongue surface becomes smooth and shiny (like varnished), reflecting nutritional deficiencies in the tongue tissue [3,5,6].

Conclusions:

The clinical presentation of chronic and acute liver diseases (CDLD) in the oral cavity, particularly jaundice (icterus) on the soft palate and ventral tongue, and the presence of atrophic glossitis, serves as a reliable diagnostic and prognostic marker directly correlating with the severity of hepatic dysfunction.

2. Liver disease significantly impairs the metabolism and storage of essential nutrients, especially Vitamin B12 (Cobalamin) and Folic Acid (B9), leading to secondary complications like megaloblastic and macrocytic anemia. This nutritional and hematological deficit directly causes trophic disturbances in the oral epithelium, manifesting as atrophic glossitis (smooth, varnished tongue) and increased vulnerability to inflammatory conditions like glossodynia and oral lesions (e.g., Oral Lichen Planus in HCV-positive cases).

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