CLINICAL AND LABORATORY SIGNIFICANCE OF DIFFUSE LIVER CHANGES IN DIFFERENT FORMS OF VIRAL HEPATITIS

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Relevance of the topic. Viral hepatitis is one of the major causes of chronic liver disease worldwide. Hepatitis B and hepatitis C viruses are particularly important because persistent infection may result in progressive hepatic inflammation, fibrosis, cirrhosis, and hepatocellular carcinoma. The clinical course of viral hepatitis is highly variable, ranging from asymptomatic infection to severe acute hepatitis and advanced chronic liver disease.

Diffuse changes in the hepatic parenchyma are commonly detected by ultrasound examination in patients with viral hepatitis. Such changes may include heterogeneous echogenicity, alterations in liver size, coarsening of the hepatic texture, irregularity of the hepatic surface, and changes in the vascular pattern. Although ultrasound findings alone cannot establish the degree of hepatic inflammation or fibrosis, their interpretation in combination with clinical and biochemical parameters may provide valuable information about disease progression.

Laboratory assessment remains an essential component of the evaluation of viral hepatitis. Serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) reflect hepatocellular injury, while bilirubin, albumin, total protein, and other biochemical parameters provide additional information regarding hepatic functional status. Therefore, the integration of laboratory and instrumental findings is important for a comprehensive assessment of patients with viral hepatitis.

The aim of this study was to evaluate the clinical and laboratory significance of diffuse liver changes in patients with different forms of viral hepatitis.

Materials and Methods

The study included patients with laboratory-confirmed viral hepatitis representing different clinical forms and stages of liver disease. A comprehensive clinical assessment was performed, including evaluation of complaints, duration of disease, signs of intoxication, jaundice, hepatomegaly, splenomegaly, and other manifestations of hepatic dysfunction.

Laboratory investigations included complete blood count and biochemical assessment of liver function. Serum ALT, AST, total bilirubin, albumin, total protein, and other relevant biochemical parameters were analyzed. Viral markers were evaluated according to the suspected type of viral hepatitis.

Ultrasound examination of the abdominal organs was performed to assess liver size, parenchymal echogenicity, homogeneity of the hepatic structure, surface contour, portal vein characteristics, and associated splenic changes.

Results

Clinical examination demonstrated considerable variability in the manifestations of viral hepatitis. Patients with active disease commonly presented with weakness, fatigue, reduced appetite, dyspeptic symptoms, discomfort or pain in the right upper quadrant, and, in some cases, jaundice. Hepatomegaly and splenomegaly were more frequently observed in patients with prolonged disease and signs of chronic hepatic involvement.

Biochemical examination demonstrated varying degrees of hepatocellular injury. Increased ALT and AST activities were particularly characteristic of patients with active inflammatory processes in the liver. Changes in bilirubin concentration were more pronounced in patients with clinically significant hepatic dysfunction and jaundice.

The combined evaluation of ultrasound and laboratory parameters provided more clinically meaningful information than the interpretation of either method separately. Patients with marked diffuse structural changes accompanied by elevated transaminases and impaired synthetic function required closer monitoring for possible progression of fibrosis and cirrhosis.

Conclusion

Diffuse structural changes of the liver are common in patients with different forms of viral hepatitis and have important clinical and laboratory significance when interpreted in combination with other diagnostic findings. Increased ALT and AST activities reflect active hepatocellular injury, whereas changes in bilirubin, albumin, and total protein may indicate impaired hepatic function.

Ultrasound examination provides valuable information about structural alterations of the liver, but its diagnostic significance is enhanced when combined with biochemical and clinical assessment. An integrated approach involving clinical examination, laboratory testing, ultrasound, and non-invasive assessment of fibrosis may improve the evaluation of disease activity and facilitate early identification of patients at risk of progressive chronic liver disease.

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