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**INSTRUMENTAL DIAGNOSTICS OF THE HEPATO-BILIARY SYSTEM
IN PATIENTS WITH THE FIRST TIME DIAGNOSED PULMONARY TUBERCULOSIS**

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Introduction

In recent years, the matter of the effectiveness and results of tuberculosis treatment has become particularly significant, due to the rapid development of tuberculosis in combination with other diseases. Patients with TB in combination with viral hepatitis are at risk for severe hepatotoxic adverse reactions that most often develop in the presence of liver damage. Due to unexpressed clinical symptoms of liver damage, instrumental research methods have great importance in their diagnosis. In recent years, ultrasound diagnosis is widely used as a diagnostic method, which helps to select the best tactics for managing patients with tuberculosis in conjunction with the concomitant pathology of the liver. It is a leading place among the instrumental methods of research of various organs and systems. This is due to their high informativity, the lack of contraindications, relatively affordable cost.

Aim

Is to evaluate the effectiveness of application of ultrasound diagnosis of the hepatobiliary system in patients with first time diagnosed tuberculosis (FDTB) of the lungs.

Material and Methods

In a clinical study participated 45 patients with FDTB of the lungs in the age group of 25 to 62 years. Among these patients were 19 (42.2 %) women and 26 (57.8 %) men. Patients were divided into two groups, which did not differ by age, sex, type of tuberculosis process and comorbidity: I — patients with FDTB of the lungs without concomitant liver disease (53.3 % of the total number of patients); II — patients with FDTB of the lungs in combination with viral hepatitis B and/or C (46.7 % of the total number of subjects). The ultrasound of the hepatobiliary system was performed on the VOLUSON-730 Expert using linear and convection sensors at a frequency of 3.5–10 MHz, which included 2D visualization, Doppler color mapping, research in 3D + PD mode. In the ultrasound of the abdominal cavity in the 2D visualization system was performed a scan of the abdominal cavity in two projections — horizontal and vertical. This estimated state liver contour (smooth, small-wavy, large-wavy), front and back size of liver particles, the structure of the liver parenchyma (homogeneous, moderately heterogeneous, expressed heterogeneous or «nodular»), echogenicity of the liver (normal or elevated to varying degrees — from inconsiderable to expressed), diameter and patency of the portal vein, liver's veins, intrahepatic bile ducts and the total bile duct, the presence of recanalization of the paramubical vein, the linear size and area of the spleen, the presence of a free fluid in the abdominal cavity, the state of the gallbladder and pancreas.

Results and Discussion

The results of the ultrasound examination of the hepatobiliary system in patients with FDTB of the lungs without concomitant viral hepatitis were compared with the ultrasound results of the hepatobiliary system of patients with FDTB of the lungs in combination with concomitant viral hepatitis. In patients with FDTB of the lungs without concomitant viral hepatitis, signs of lesion of the liver were noted in rare cases and manifested mainly by changes in the acoustic density of the liver and the appearance of its heterogeneity. In patients with FDTB of the lungs in combination with viral hepatitis with ultrasound, appears of liver damage revealed by hepatomegaly and splenomegaly, decreased or increased echogenicity of parenchyma, heterogeneity of its structure and parameters of portal blood flow were revealed. The acoustic density of the liver was bigger in the II group, where there was a significant increase in the mean linear velocity of the portal blood flow, in contrast to patients in group I, which more often observed the «blurry» of the liver parenchyma, the impoverishment of its vascular picture. However, heterogeneity of the liver parenchyma was noted in a smaller number of patients and was less marked than in the patients under study II group. The size, volume and area of the spleen were also significantly higher in the II group of examined patients. In the second group of the subjects, an increase in the anterior-posterior size of the liver and the vertical size of the left particle, as well as the area and volume of the spleen, were compared with the I group of patients. The acoustic density of the liver was somewhat lower in group I, but the intergroup value of the indices did not differ significantly. In these patients, a significant increase in the mean linear velocity of portal blood flow was determined, as opposed to patients with concomitant viral hepatitis. In the absence of viral lesion of the liver was observed more often the «blurry» of the liver parenchyma, the impoverishment of its vascular picture. However, the heterogeneity of liver parenchyma and its greater severity, size, volume and area of the spleen were significantly higher among patients with co-infection. The indicated signs of liver damage that were established with ultrasound are due to acute or chronic inflammation of its parenchyma, which is an adverse factor for antimycobacterial therapy, especially in patients with concomitant viral hepatitis. Consequently, the ultrasound of the hepatobiliary system in patients with FDTB of the lungs with concomitant viral hepatitis B and/or C (group II of the study) prior to the administration of antimycobacterial drugs allowed to reveal significant changes in liver parenchyma and blood flow in it, which in 18.3 % of cases occurred without raising the level indicators of transaminases and manifested in comparison with the group I, hepatoma, splenomegaly, changes in acoustic density, heterogeneity of its parenchyma and a decrease in the average rate of portal blood flow. Unlike the group II of the patients under study, in patients of group I, signs of liver damage were observed in rare cases and were manifested mainly by changes in echogenicity of the liver and a decrease in the average rate of portal blood flow.

Conclusions

In addition to laboratory (biochemical) methods for investigating liver damage, ultrasound scans can diagnose violations of the liver function, which, in turn, helps to highlight a high-risk group with regard to the occurrence of adverse reactions due to antimycobacterial therapy.

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