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ASSESSMENT OF COMPARATIVE ANALYSIS OF THE COURSE OF NON-ALCOHOLIC FATTY LIVER DISEASE IN MIDDLE-AGED AND ELDERLY PATIENTS WHO SUFFER COVID-19 THROUGH ULTRASOUND ELASTOMETRY (VIA FIBROSCAN)

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Abstract:

The pandemic of the new coronavirus COVID-19 has changed medicine around the world in a major fight against this infection. Patients with chronic liver disease demanded the attention of physicians during the epidemic, as against the background of their exacerbation of the disease increased not only the risk of infection with COVID-19 virus, but also its severity. Diffuse liver disease, especially in the diagnosis of non-alcoholic fatty liver disease, is determined by methods that are safe, non-invasive, and applicable to all patients. Without exception, one such method is the shear wave elastography (fibroscan) examination method. In this study, a comparative study of the course of non-alcoholic fatty liver disease in middle-aged and elderly patients with COVID-19 using a non-invasive instrumental method was performed.

Keywords: COVID-19, non-alcoholic fatty liver disease, hepatic steatosis, steatohepatitis, elastometry.

The pandemic of the new coronavirus COVID-19 has changed medicine around the world in a major fight against this infection. Patients with chronic liver disease demanded the attention of physicians during the epidemic, as against the background of their exacerbation of the disease increased not only the risk of infection with COVID-19 virus, but also its severity [1,3,4,6,16,17]. An increase in high biochemical parameters is observed in patients with COVID-19 confirmed by severe liver damage. The literature has shown an increase in ALT levels, a decrease in platelet and albumin levels, and a higher risk of death in patients with severe manifestations of COVID-19 [2,4,8,9,10,11,12]. The COVID-19 attack is stabilizing the pandemic due to the concerted efforts of the medical community, and in a number of countries it has begun to decline, making it necessary to focus on patients with other diseases and assess their interactions with unprecedented infections.

During the pandemic, it became clear that COVID-19 was not only an acute respiratory infection, but also a disease that caused multiple systemic damage to organs involving vital organs such as the liver. The liver is a vital organ with many functions [3,5,6,7,13,14,15]. However, against the background of the COVID-19 pandemic, the problems of patients with chronic liver disease remain unresolved and require study. Non-alcoholic fatty liver disease (NAFLD) is one of the most common diseases in the world, and it is important to effectively monitor and continue to treat patients with this pathology in epidemic conditions, as well as to conduct research to reduce health system problems and disease reduction. Diffuse liver disease, especially in the diagnosis of NAFLD, is determined by methods that are safe, non-invasive, and applicable to all patients. Without exception, one such method is the shear wave elastography (fibroscan) examination method.

PURPOSE OF THE STUDY:

Comparative study of non-alcoholic fatty liver disease in middle and older patients conducted by non-invasive method of COVID-19

MATERIALS AND RESEARCH METHODS.

The study included 94 people who were not infected with COVID-19, of which 42 (44.7%) were middle-aged 20-59 (average 36.2 ± 3.2) years old, and 52 (55.3%) were 60-76 (65, 2 ± 4,2) patients. Of the 84 patients diagnosed with COVID-19, 34 (40.4%) were middle-aged (38.2 ± 4.4) and 50 (59.5%) were elderly (68.4 ± 2.2). An anamnesis (periodic abstinence from

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alcohol) was collected to rule out alcoholic fatty liver disease and isolated through a special CAGE survey. Diagnosed on the basis of COVID-19 polymerase chain reaction (PCHR) test. All patients involved in the study underwent instrumental examination of ultrasound elastometry "Fibroscan" (Echosens, Paris). During the study, the practice was compared with 18 healthy individuals (ages 20–65). The data obtained were statistically processed using the student's t - criterion, and the difference in results with R <0.05 was recognized as reliable.

RESULTS AND DISCUSSION.

From our studies, accurate data on diffuse and focal pathologies in the liver were obtained. Transient waves in elastography made it possible to evaluate the elastic properties of tissue in contrast to normal UTT. The result obtained was expressed in kilopascals and allowed to estimate the stage of the disease from F0 to F4. Metavir system (F0 - <= 5.8. KPa no fibrosis, F1 - 5.9- 7.2. KPa minimal liver change, F2 - 7.3-9.5 KPa - moderate liver change, F3 - 9.6-12.5 KPa clear liver changes and 12.6> F4 liver cirrhosis). The rate of liver steatosis was expressed in dB / m, and the stage of the disease was assessed from S0 to S3.

Table 1
Prevalence of hepatic steatosis and steatohepatitis in patients with COVID-19. n (%)

№	Patients without COVID-19 n=94		Patients with COVID n=84	
	Middle age n=42 (44,7%)	Old age n=52 (55,3%)	Middle age n=34 (40,4%)	Old age n=50 (59,5%)
Hepatic steatosis	31(73,8%)	33(63,4%)	21(61,7%)	24(48%)
Steatohepatitis	11(26,2%)	19(36,6%)	13(38,3%)	26(52%)

Of the 94 patients who did not have COVID-19, 42 (73.8%) of the middle-aged patients had hepatic steatosis (HS), 11 (26.2%) had steatohepatitis (SG), and 33 (63.4%) had elderly patients. HS, 19 (36.6%) were diagnosed with SG. Of the 34 middle-aged patients diagnosed with COVID-19, 21 (61.7%) had JS, 13 (38.3%) SG, 24 (48%) of 50 elderly patients had JS, 26 (52%) had SG. evaluated by elastometry. Thus, the ultrasound elastometry (Fibroscan) examination method is a new non-invasive method that provides sufficiently accurate information about liver fibrosis. Transient waves in elastography allow the detection of diagnostic changes in the early stages of the disease by studying the nature of the tissue. A follow-up of our next study is the assessment of liver function in NAFLD by ultrasound elastometry.

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