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COMPARATIVE ASSISMENT OF CLINICAL SYMPTOMS OF NON-ALCOHOL FATTY LIVER DISEASE IN MIDDLE AND OLD PATIENTS WITH COVID-19

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Abstract: Non-alcoholic fatty liver disease (NAFLD) is an important disease of the gastrointestinal tract. 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 the liver. This article evaluates and analyzes the clinical signs as well as the age-related features of this disease in 178 middle-aged and elderly patients with non-alcoholic fatty liver disease who underwent COVID-19. It is scientifically based that COVID-19 is more common in the elderly in patients with non-alcoholic fatty liver disease and is more severe in patients with a body mass index (BMI) greater than 36.

Keywords: COVID-19, nonalcoholic fatty liver disease, obesity, body mass index, clinical signs, apathy, flatulence

Relevance of the research: One of the important epidemiological trends is the steady increase in the total number of people with nonalcoholic fatty liver disease (NAFLD)[1,2,3]. Epidemiological studies show that the prevalence of NAFLD is 20-40%[4,5,6]. It is noteworthy that NAFLD is the most observed among the population of economically developed countries[7,8,9]. 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[10,11,12.

Severe clinical signs are observed in patients with COVID-19 confirmed by severe liver damage. However, against the background of the COVID-19 pandemic, the problems of patients with chronic liver disease remain unresolved and need to be studied[13,14,15]. Therefore, the aim of our study was to study the comparative description of the clinical signs of liver non-alcoholic fatty disease in middle-aged and elderly patients who underwent COVID-19 and to assess liver function[16].

Inspection materials and methods. The study included 94 people who did not have COVID-19, of which 42 (44.7%) were middle-aged 20-59 (average 36.2 ± 3.2) years, 52 (55.3%) were 60-76 (65.2%) elderly. ± 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). To rule out alcoholic fatty liver disease, a medical history (periodic abstinence from alcoholic beverages) was collected and isolated through a special CAGE survey. Diagnosed on the basis of COVID-19 PTsR test. Criteria for inclusion in the study: patients aged 20-75 years with hepatic steatosis (JS) and steatohepatitis (SG); Persons who have given written consent to laboratory and biochemical tests. Exclusion criteria: alcohol or drug dependence, toxic, viral, autoimmune liver damage, patients with oncological diseases, severe diseases (uncontrolled arterial hypertension, diabetes mellitus type 2 decompensation stage, chronic heart failure functional class III-IV, myocardial infarction and stroke patients), pregnant, breast-fed women. During the study, the practice was compared

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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.

During the diagnosis, anamnestic data were collected from patients, laboratory and instrumental examinations (ultrasound, fibroelastometry - "Fibroskan" Echosens, Paris) were used. COVID-19 was performed in 600 patients with middle-aged and elderly patients with risk factors for JNAYoX by ultrasound examination of the hepatobiliary system for the development of nonalcoholic fatty liver disease: obesity, dyslipidemia, impaired carbohydrate resistance. As a result of liver ultrasound examination, 178 patients with JNAYoX were isolated. **Results and analysis:** From our research, the age distribution of patients diagnosed with JNAYoX with or without COVID-19 is shown in Table 1. Among the elderly population who underwent COVID-19, non-alcoholic fatty liver disease was more common and more severe in patients with a body mass index greater than 36.

Table №1

Age-related prevalence n (%) of middle-aged and elderly patients with non-alcoholic fatty liver disease who have or have not had COVID -19

Age of patients	Women Abs 110 (%)		Men Abs 68 (%)	
	Patient with COVID-19 n=52	Not infected with COVID-19 n =58	Patient with COVID-19 n =32	Not infected with COVID-19 n =36
Up to 39 years old	4 (7.7%)	5 (8.6%)	7 (21.9%)	9 (25%)
40–49 years old	8 (15.4%)	12 (20.7%)	4 (12.5%)	6 (16.7%)
50–59 years old	13 (25%)	12 (20.7%)	9 (28.1%)	10 (27.8%)
60–74 years old	27 (51.9%)	29 (50%)	12 (37.5%)	11 (30.5%)
The total	52	58	32	36

COVID-19 was found to be more common in female patients aged 60–74 years with non-alcoholic fatty liver disease. Liver nonalcoholic fatty disease was 4 (7.7%) among women under 39 years of age with COVID-19, and 5 (8.6%) among patients without COVID-19. Among men with COVID-19 at the same age, patients with NAFLD showed the highest results in 7 (21.9%) patients, while those without COVID-19 showed the highest results among patients with 9 (25%) and under 39 years of age. Among women aged 40–49 years with COVID-19, NAFLD was 8 (15.4%) and among those without COVID-19 was 12 (20.7%), the highest incidence in this group. Among women aged 60–74 years with COVID-19, liver non-alcoholic fatty disease was 27 (51.9%) and was the leading indicator in this group of patients, while in women without COVID-19 it was 29 (50%). Among men infected with COVID-19, JNAYoX 12 (37.5%) and among those not infected with COVID-19 11 (30.5%). It is possible to observe an increase in the incidence of NAFLD in elderly patients, especially after COVID-19, an increase in the incidence of the disease. For the purpose of comparative analysis of demographic and anthropometric indicators in patients with COVID -19 and non-alcoholic liver fatty liver disease, the Kettle index was calculated for all patients.

Table №2

Comparative analysis of demographic and anthropometric indicators in patients with primary and control group liver nonalcoholic fatty disease

Indicator	control group (n=18)	Patient with COVID-19 n=84	Not infected with COVID-19 n=94
age	51.3 ± 5.1	56.6±8.4	55.3±9,6
body mass, kg	70,4±4.5	88,8±7.3	86,7±8.1
Height, cm	167.3±6.1	170.2 ±3.8	173.1 ±4.8
BMI, kg/m^2 (25-30)	20.5±1.27	23,3±3.9	25,9±2.4
BMI, kg/m^2 (30-34.9)	21,8±0,3	32,4±1,8	31,8±1,6
BMI, kg/m^2 (35-39,9)	23,8±0,4	35,9±3,1	34,1±1,4
BMI, kg/m^2 40 <	24,9±0,4	38,9±3.4	38,1±2.1

Note: * n <0.05; convincing differences in control group results.

COVID-19 was assessed by a special questionnaire for the purpose of comparative analysis of clinical signs of patients with liver and non-alcoholic fatty disease in middle-aged and elderly people who had or had not. The survey included pain under the right rib, discomfort, nausea, decreased ability to work, flatulence, constipation, rapid fatigue, general weakness, bitter fullness in the mouth, apathy, decreased appetite, indigestion, redness and itching of the skin, dilation of blood vessels in the skin , clinical signs such as yellowing of the skin and eyes were included.

Table №3

Comparative analysis of clinical signs in patients with middle and elderly liver non-alcoholic fatty disease who have or have not had COVID -19.

№	clinical signs	Patient with COVID-19 N=84	Not infected with COVID-19 N=94
1	Pain under the right rib, feeling of discomfort	78(92.8%)	73(77.7%)
2	Nausea	75(89.2%)	68(72.3%)
3	Decreased ability to work	84(100%)	85(90.4%)
4	Meteorism	80(95.2%)	76(80.1%)
5	Constipation	73(86.9%)	66(70.2%)
6	Rapid fatigue, general weakness	81(96.4%)	73(77.7%)
7	Full sensation of bitterness in the mouth	80(95.2%)	77(81.9%)
8	Apathy	82(97.6%)	84(89.3%)
9	Decreased appetite	70(83.3%)	64(68.8%)
10	Digestive disorders	65(75%)	59(62.7%)
11	Redness and itching of the skin	27(32.1%)	16(17.1%)
12	Dilation of blood vessels in the skin	18(21.4%)	9(9.5%)
13	Yellowing of the skin and eyes	38(45.2%)	27(28.7%)

Note: * n <0.05; Convincing differences in the comparison group results of patients with hepatic nonalcoholic fatty liver disease in middle-aged and elderly people who underwent and did not undergo COVID -19.

Pain under the right rib, discomfort 78 (92.8%) in patients with COVID-19, 73 (77.7%) in patients without COVID -19, 75 (89.2%) in patients with COVID-19 -19, COVID -19 68 (72.3%) in non-patients, decreased ability to work was observed in all patients with COVID-19, 85 (90.4%) in patients without COVID-19, 80 (95.2%) in patients with flatulence COVID-19, COVID-19 76 (80.1%) in patients without COVID-73, 73 (86.9%) in patients with COVID -19, 66 (70.2%) in patients without COVID-19, rapid fatigue, general weakness 81 (96.4%) in patients with COVID-19 , 73 (77.7%) in patients without COVID-19, 80 (95.2%) in patients with COVID-19, and 77 (81.9%) in patients without COVID-19. Decreased appetite was also observed in 70 (83.3%) patients with COVID-19 and 64 (68.8%) in patients without COVID-19. Thus, it can be concluded from the studies that COVID-19 was more severe in elderly patients with non-alcoholic fatty liver disease. When attention was paid to the age of the patients, it was found that the rates were higher in patients over 60 years of age and with high body mass. The analysis of clinical symptoms was also scientifically based on the fact that the symptoms of COVID-19 were higher in elderly patients with nonalcoholic fatty liver disease.

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