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Prevalence of liver fibrosis and obesity in patients with metabolic dysfunction-associated steatotic liver disease: a cross-sectional study

Liver fibrosis stage is considered the strongest predictor of disease-specific mortality in metabolic dysfunction-associated steatotic liver disease (MASLD).

Objective — to investigate the prevalence of obesity and liver fibrosis stages in patients with MASLD.

Materials and methods. It was a multicentre cross-sectional study involving adult patients aged 18 years and older, who were referred for FibroMax panels during January 2020 — January 2024 in Kyiv and Kyiv oblast region in Ukraine, with the degree of hepatic steatosis > 5 % confirmed by Steatotest and at least one of five cardiometabolic risk factors (MASLD criteria defined by the American Association for the Study of Liver Diseases (AASLD)). The exclusion criteria were evidence of other acute or chronic liver diseases, other than MASLD. Biochemical tests necessary for the FibroMax panels (BioPredictive, France) were measured in the central regional laboratory.

Results. We included 334 participants in data analysis with age median 48 years (interquartile range 41—58) and 71 % of them were males (n = 237). Median of BMI was 30.9 kg/m^2 (interquartile range 28.3—33.5). Obesity (body mass index ≥ 30 kg/m^2) was recorded in 58 % (95 % confidence interval (CI) 52.6—63.43) of the participants. Liver fibrosis stages distribution was the following: F0 — 54.2 % (95 % CI 48.68—59.63), F1 — 24.6 % (95 % CI 20.03—29.53), F2 — 6.6 % (95 % CI 4.17—9.8), F3 — 8.7 % (95 % CI 5.89—12.23) and F4 — 6.0 %. (95 % CI 3.7—9.1).

Conclusions. Significant liver fibrosis (≥ F2) and obesity were found to be highly prevalent in patients with MASLD. These findings support the need for implementing liver fibrosis screening programs in Ukrainian adults with MASLD.

Keywords: MASLD, metabolic dysfunction-associated steatotic liver disease, fibrosis, liver, steatosis, obesity, fatty liver disease.

Obesity, a complex multifactorial disease with negative effects on health due to excess body fat accumulation, represents one of the most serious public health challenges [14, 15]. According to previous studies, approximately 650 million adults suffer from obesity, and the prevalence of obesity is increasing globally [6, 21]. Body mass index (BMI) ≥ 25 kg/m^2 with some ethnicity adjustments is one of five cardiometabolic risk factors used in the new criteria for metabolic dysfunction-associated steatotic liver disease (MASLD), which is considered to be the most common chronic liver disease [9]. J. Behari et al. demonstrated that patients with MASLD with BMI ≥ 50 kg/m^2 had the highest mortality rate adjusted for age, sex, race/ethnicity, and smoking status [3].

According to the Ukraine STEPS Noncommunicable Disease Risk Factors Survey 2019, involving 4409 participants with 62.6 % being females, 34.8 % of participants had elevated blood pressure

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or hypertension (including participants taking antihypertensive therapy), 7.1 % had fasting plasma glucose levels ≥ 7.0 mmol/L or took oral hypoglycaemic drugs/insulin, and 9.9 % had elevated blood cholesterol levels (≥ 6.2 mmol/L or currently on medication for elevated blood cholesterol). Among all participants, 59.1 % were overweight (BMI ≥ 25 kg/m^2), including 24.8 % of the participants who were obese (BMI ≥ 30 kg/m^2) [23]. These findings indicate a high prevalence of cardiometabolic risk factors in the Ukrainian population.

There are several studies reporting the prevalence of MASLD [18, 25] and some studies regarding the prevalence of significant liver fibrosis in patients with MASLD [12, 24], acknowledging the fact that liver fibrosis stage is considered the strongest predictor of disease-specific mortality in MASLD [8]. Recently, non-invasive methods for assessing liver fibrosis have become increasingly important. These techniques, including biochemical scores and elastography, have decreased the need for liver biopsies and allowed for earlier detection of patients at risk of developing fibrosis [2, 4, 9]. There are limited data on the prevalence of different degrees of obesity and liver fibrosis stages in Ukrainian patients with MASLD, which makes this study important and relevant.

Objective — to investigate the prevalence of obesity and liver fibrosis stages in patients with MASLD.

Materials and methods

It was a multicentre cross-sectional study involving patients who were referred for FibroMax panels during January 2020 — January 2024 in Kyiv and Kyiv Oblast (region) in 96 different medical offices, and who provided informed consent at the time of primary data collection.

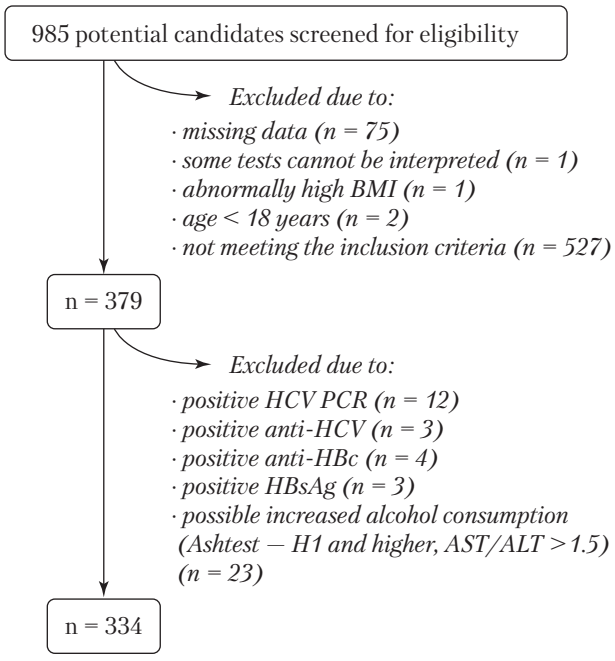
The inclusion criteria were as follows: adult patients aged 18 years and older, who were referred for liver fibrosis assessment by FibroMax panels; with the degree of hepatic steatosis > 5 % confirmed by Steatotest and at least one of five cardiometabolic risk factors: BMI ≥ 25 kg/m^2 or waist circumference > 94 cm (males) and > 80 cm (females); fasting serum glucose ≥ 5.6 mmol/L or 2-hour post-load glucose levels ≥ 7.8 mmol/L or HbA1c ≥ 5.7 % or type 2 diabetes or treatment for type 2 diabetes; blood pressure ≥ 130/85 mm Hg or specific antihypertensive treatment; plasma triglycerides ≥ 1.70 mmol/L or lipid-lowering treatment; plasma HDL ≤ 1.0 mmol/L (males) and ≤ 1.3 mmol/L (females) or lipid-lowering treatment [9, 19].

The exclusion criteria were evidence of increased daily alcohol intake (more than 30 g per day for men and 20 g per day for women; results of tests suggesting possible cause of abnormal liver function tests to be due to alcohol, such as positive Ashtest and AST/ALT > 1.5 [10]), acute or chronic liver diseases (hepatitis B, hepatitis C, etc.) other than MASLD.

We screened 985 potential candidates for eligibility and 334 were included in the following analysis. This process is shown in the flow diagram (Figure).

Liver steatosis, fibrosis and inflammation were assessed by FibroMax panels (BioPredictive, Paris, France) [5]. Panels consist from the following components: SteatoTest, FibroTest, NashTest, Ashtest, and ActiTest. Biochemical tests necessary for the FibroMax panels were measured in central regional laboratory office by the following methods:

Triglyceride levels were determined using the enzymatic method (Atellica CH 930 Analyzer, Siemens, Germany), cholesterol levels were measured by the colorimetric assay (Atellica CH 930 Analyzer, Siemens, Germany), levels of apolipoprotein-A1 and haptoglobin were assessed by using the immunoturbidimetric method (Beckman Coulter Inc., USA), α2 macroglobulin levels were assessed by using the immunoturbidimetric method (Atellica CH 930 Analyzer, Siemens, Germany), fasting glucose levels were determined by the hexokinase method



HCV — hepatitis C virus; PCR — polymerase chain reaction;
anti-HCV — antibodies to the hepatitis C (total);
anti-HBc — hepatitis B core antibodies (total);
HBsAg — hepatitis B surface antigen;
AST — aspartate aminotransferase;
ALT — alanine aminotransferase

Figure. **Flow diagram for inclusion and exclusion criteria**

(Beckman Coulter Inc., USA), aspartate aminotransferase (AST) and alanine aminotransferase (ALT) were assessed by the kinetic method (Beckman Coulter Inc., USA), total bilirubin levels were determined by the colorimetric assay (Beckman Coulter Inc., USA) and gamma-glutamyltranspeptidase (GGT) — by the spectrophotometric method (AU5800 Analyzer, Beckman Coulter Inc., USA).

Results for components of FibroMax panels range from 0.00 to 1.00. Fibrosis severity was categorized as F0 (no fibrosis), F1 (minimal fibrosis), F2 (moderate fibrosis), F3 (progressive fibrosis) and F4 (severe fibrosis) and provided by BioPredictive, Paris, France. In our study we also used the definition of significant liver fibrosis, which was defined as stage ≥ F2, and advanced liver fibrosis (≥ F3) [9].

The results of Steatotest were defined as S0 (no liver steatosis, < 1 %), S1 (minimal liver steatosis, 1—5 %), S2 (significant liver steatosis, 6—32 %) and S3 (severe liver steatosis, > 32 %). The results of NashTest were shown as N0 (no NASH), N1 (possible NASH) and N2 (NASH present).

BMI was calculated using the data from the records obtained during the primary data collection. In our study we used the following BMI classification [1]:

- < 18.5 kg/m^2 — underweight;
- 18.5 to < 25 kg/m^2 — normal weight;
- 25 to < 30 kg/m^2 — pre-obesity (overweight);
- 30 to < 35 kg/m^2 — obesity class I;
- 35 to < 40 kg/m^2 — obesity class II;
- ≥ 40 kg/m^2 — obesity class III.

Age groups were defined based on the Medical Subject Headings (MeSH) which is the National Library of Medicine's controlled vocabulary thesaurus (Medical Subject Headings (Mesh): young adult (18—24 years), adult (25—44 years), middle-age (45—64 years), elderly (65 and older).

Statistical Analysis

The necessary sample size (n = 150) was defined using the formula for a prevalence survey [16] with precision 5 %, expected prevalence of BMI ≥ 25 kg/m^2 in patients with MASLD 89.1 % as was found in previous study [17], and 95 % Level of the confidence interval.

The Kolmogorov–Smirnov test was used to check if the distribution of continuous data was normal. Therefore, we expressed continuous variables as median values with the interquartile range (IQR), as most data did not follow a normal distribution. Logistic regression analysis was used for associations. Categorical variables are presented as the number of cases and percentages. We used the chi-square test and the Freeman-Halton extension of the Fisher exact probability test to compare the categorical data. Confidence intervals for proportions were calculated using the binomial «exact» calculation. We presented the prevalence with 95 % confidence intervals (CI). Statistical significance was defined as $p < 0.05$. Data were analysed using MedCalc Statistical Software and Sample size calculator's software utilities developed by Michael Kohn.

Results and discussion

We included 334 participants in data analysis with age median 48 years (IQR 41—58) and 71 % of them were male (n = 237). Median of BMI was 30.9 kg/m^2 (IQR 28.3—33.5). Among all participants 97.6 % (95 % CI 95.34—98.96) had cardiometabolic risk factor BMI ≥ 25 kg/m^2. Main sociodemographic, clinical and laboratory characteristics of the participants are summarized in Table 1.

Table 1. **Main sociodemographic, clinical and laboratory characteristics of the participants (n = 334)**

Indicator	Value
Age, years	48 (41—58)
Female	97 (29.0 %)
Male	237 (71.0 %)
BMI, kg/m^2	30.9 (28.3—33.5)
BMI category, kg/m^2	
< 18.5	0
18.5 to < 25	8 (2.4 %)
25 to < 30	132 (39.5 %)
30 to < 35	138 (41.3 %)
35 to < 40	33 (9.9 %)
≥ 40	23 (6.9 %)
Triglycerides, mmol/L	1.82 (1.34—2.58)
Cholesterol, mmol/L	5.44 (4.49—6.33)
Apolipoprotein-A1, g/L	1.27 (1.13—1.41)
α_2-macroglobulin, g/L	1.44 (1.23—1.96)
Haptoglobin, g/L	1.185 (0.84—1.55)
Glucose (fasting), mmol/L	5.7 (5.2—6.4)
Aspartate aminotransferase, U/L	35 (26—50)
Total bilirubin, μmol/L	12.7 (9.8—17.5)
Alanine aminotransferase, U/L	57 (36—95)
γ-glutamyltranspeptidase, U/L	54 (34—97)

Note. Categorical variables are presented as the number of cases and percentage, while quantitative indicators are presented as median and IQR.

Table 2. **Distribution of hepatic fibrosis stages, hepatic steatosis stages, and NASH probability in males and females**

Indicator	Males	Females	p
Steatosis			
S2	83 (35.0 %)	46 (47.4 %)	0.0349
S3	154 (65.0 %)	51 (52.6 %)	
NASH			
N0	18 (7.6 %)	17 (17.5 %)	
N1	211 (89 %)	57 (58.8 %)	< 0.0001
N2	8 (3.4 %)	23 (23.7 %)	
Fibrosis			
F0	119 (50.2 %)	62 (63.9 %)	
F1	64 (27 %)	18 (18.6 %)	
F2	17 (7.2 %)	5 (5.2 %)	0.1479
F3	20 (8.4 %)	9 (9.3 %)	
F4	17 (7.2 %)	3 (3.1 %)	

Table 3. **Distribution of BMI categories among patients**

BMI	Number of patients
18.5 to < 25 kg/m^2	8 (2.4 % (1.0—4.7 %))
25 to < 30 kg/m^2	132 (39.5 % (34.2—45.0 %))
30 to < 35 kg/m^2	138 (41.3 % (36.0—46.8 %))
35 to < 40 kg/m^2	33 (9.9 % (6.9—13.6 %))
≥ 40 kg/m^2	23 (6.9 % (4.4—10.2 %))

Note. Indicators are presented as number of cases and percentage and 95 % CI.

No patients had a BMI value less than 18.5 kg/m^2. 39.5 % (95 % CI 34.24—44.99) of patients with MASLD were overweight (BMI 25 to < 30 kg/m^2) and obesity (BMI ≥ 30 kg/m^2) was recorded in 58 % (95 % CI 52.6—63.43) of participants. Distribution of BMI categories among patients are shown in Table 3.

61.4 % of participants (n = 205) had S3 stage of liver steatosis accordingly to SteatoTest, which corresponds to severe steatosis (> 32 %). Comparative analysis revealed that severe steatosis (exceeding 32 %) was observed in a considerable proportion of males (65 %), which was markedly higher than in females (52.6 %, p = 0.0349), which is shown in Table 2.

Liver fibrosis stages distribution was the following: F0 — 54.2 % (95 % CI 48.68—59.63), F1 — 24.6 % (95 % CI 20.03—29.53), F2 — 6.6 % (95 % CI 4.17—9.8), F3 — 8.7 % (95 % CI 5.89—12.23) and F4 — 6.0 % (95 % CI 3.7—9.1). The prevalence of significant liver fibrosis (≥ F2) was 21.26 % (95 % CI 17—26) and advanced liver fibrosis (≥ F3) — 14.7 % (95 % CI 11.05—18.93). We did not find evidence supporting difference in liver fibrosis stage distribution in males versus females (χ^2 test, p = 0.1479), which is shown in Table 2.

However, comparative analysis of the frequency of liver fibrosis stages across different age groups revealed a statistically significant difference between the groups, as presented in Table 4.

Further logistic regression analysis confirmed a positive association between age and significant liver fibrosis (≥ F2), OR = 1.0577; 95 % CI 1.0319 to 1.0842; p < 0.0001.

Based on the results of NashTest, NASH (N2) was present in 31 participants (9.3 %, 95 % CI 6.39—12.92),

Table 4. **Distribution of liver steatosis severity, fibrosis stages and NASH probability across age groups**

Category	18—24 years	25—44 years	45—64 years	≥ 65 years	p
Steatosis					
S2	1 (50 %)	43 (33.9 %)	73 (42.0 %)	12 (38.7 %)	0.5439
S3	1 (50 %)	84 (66.1 %)	101 (58 %)	19 (61.3 %)	
NASH					
N0	0	11 (8.7 %)	20 (11.5 %)	4 (12.9 %)	
N1	2 (100 %)	110 (86.6 %)	134 (77 %)	22 (71 %)	0.2558
N2	0	6 (4.7 %)	20 (11.5 %)	5 (16.1 %)	
Fibrosis					
F0	1 (50 %)	92 (72.4 %)	82 (47.1 %)	6 (19.4 %)	
F1	1 (50 %)	21 (16.5 %)	45 (25.9 %)	15 (48.4 %)	
F2	0	8 (6.3 %)	11 (6.3 %)	3 (9.7 %)	< 0.0001
F3	0	3 (2.4 %)	22 (12.6 %)	4 (12.9 %)	
F4	0	3 (2.4 %)	14 (8 %)	3 (9.7 %)	

possible NASH (N1) was recorded in 268 patients (80.2 %, 95 % CI 75.56—84.37), and no NASH (N0) in 35 patients (10.5 %, 95 % CI 7.41—14.27). There was a difference in NASH probability distribution in males compared to females, which is shown in Table 2. Further analysis revealed that among patients with NASH (n = 31), 74.2 % were obese. The distribution of NASH presence/absence across different BMI categories is shown in Table 5.

Logistic regression analysis demonstrated that presence of NASH (N2) was associated with significant liver fibrosis (≥ F2), OR = 4.6731; 95 % CI 1.6131 to 13.5379; p = 0.0045). After adjustment for age and sex, this association remained significant (OR = 5.4985; 95 % CI 1.6095 to 18.7842; p = 0.0065).

Prevalence of liver fibrosis stages in patients with MASLD across different BMI categories are shown in Table 6. Significant liver fibrosis (F ≥ 2) was recorded in 37.5 % lean patients (BMI 18.5 to < 25), in 18.9 % overweight patients (BMI 25.0 to < 30) and in 22.2 % patients with obesity (BMI ≥ 30), p = 0.4106. Advanced liver fibrosis (F ≥ 3) was observed in 25 % lean patients, in 12.9 % overweight patients and in 15.5 % patients with obesity (p = 0.57).

Liver fibrosis occurs when excessive amounts of extracellular matrix proteins, particularly collagen, accumulate in liver tissue, and as fibrosis progresses, it can lead to cirrhosis and ultimately, end-stage liver disease [20]. Our study investigated prevalence of liver fibrosis stages and obesity in Ukrainian patients with MASLD. We observed stages F3/F4 in 14.67 % (95 % CI 11.05—18.93) of participants in our study, which is consistent with results 17.4 %, reported by T. Tsutsumi et al. studying hepatic inflammation and fibrosis profiles in biopsy-proven MASLD in Japan [22]. Although, M. Kim et al., found the sex- and age-standardized prevalence of significant (≥ F2) and advanced hepatic fibrosis (≥ F3) amongst MASLD to be 9.7 % (range: 3.0—9.8 %) and 3.0 % (range: 2.6—4.6 %) respectively [12].

Our findings regarding the association between significant liver fibrosis (≥ F2) and age (OR = 1.0577; 95 % CI 1.0319—1.0842; p < 0.0001) align with the results of a similar study analyzing NHANES 2017—2020 data, which demonstrated a comparable association between age and liver fibrosis occurrence in MASLD patients (OR = 1.08; 95 % CI 1.05—1.12) [26].

There is a tight association between obesity and MASLD [9, 19]. In the study in the USA obesity was recorded in 65.9 % of adult patients with MASLD (N = 363) [24]. This is similar to our

Table 5. **The distribution of NASH presence/absence across different BMI categories**

NASH	18.5 to < 25 kg/m²	25 to < 30 kg/m²	≥ 30 kg/m²	p
N0 (no NASH)	3 (75 %)	21 (75 %)	11 (32.4 %)	0.001
N2 (NASH present)	1 (25 %)	7 (25 %)	23 (67.6 %)	

Table 6. **Prevalence of hepatic fibrosis stages in patients with MASLD across different BMI categories**

BMI	F0	F1	F2	F3	F4	Total
18.5 to < 25 kg/m²	2 (25.0 %) (3.2—65.1 %)	3 (37.5 %) (8.5—75.5 %)	1 (12.5 %) (0.3—52.7 %)	1 (12.5 %) (0.3—52.7 %)	1 (12.5 %) (0.3—52.7 %)	8
25 to < 30 kg/m²	73 (55.3 %) (46.4—64.0 %)	34 (25.8 %) (18.5—34.1 %)	8 (6.1 %) (2.7—11.6 %)	8 (6.1 %) (2.7—11.6 %)	9 (6.8 %) (3.2—12.6 %)	132
30 to < 35 kg/m² Obesity class I	66 (47.8 %) (39.3—56.5 %)	35 (25.4 %) (18.3—33.5 %)	9 (6.5 %) (3.0—12.0 %)	20 (14.5 %) (9.1—21.5 %)	8 (5.8 %) (2.5—11.1 %)	138
35 to < 40 kg/m² Obesity class II	24 (72.7 %) (54.5—86.7 %)	6 (18.2 %) (7.0—35.5 %)	1 (3.0 %) (0.1—15.8 %)	0	2 (6.1 %) (0.7—20.2 %)	33
≥ 40 kg/m² Obesity class III	16 (69.6 %) (47.1—86.8 %)	4 (17.4 %) (5.0—38.8 %)	3 (13.0 %) (2.8—33.6 %)	0	0	23

Note. Indicators are presented as number of cases and percentage and 95 % CI.

finding of obesity (BMI ≥ 30 kg/m^2) in 58 % (95 % CI 52.6—63.43) of the participants.

W. Sohn et al. demonstrated differences in the prevalence of significant fibrosis among MASLD subgroups. These subgroups included: one based on the presence of diabetes mellitus regardless of BMI, three others based on BMI categories, and additional criteria of two metabolic risk factors for lean participants [20]. Some other studies also demonstrated that BMI along with the visceral adiposity index were associated with an increased risk of progression to moderate-to-advanced liver fibrosis [11, 13].

We expected similar results in our study; however, we did not find evidence of a difference in the distribution of liver fibrosis stages among patients with different BMI categories. Furthermore, the majority of patients in our study were male (71 %), which might be due to the higher prevalence of MASLD in males, according to some previous studies [7, 20]. We presume that some factors may be associated with differences in results, such as methodological differences in hepatic fibrosis assessment (in our study, we used non-invasive methods to determine the degree of hepatic steatosis, fibrosis and inflammation), as well as population characteristics. Unfortunately, it was not possible to observe weight changes simultaneously with liver fibrosis progression in these circumstances. Additionally, we did not have an opportunity to investigate the causes of obesity for all patients. Also, although liver biopsy is a gold standard method for assessing hepatic steatosis and fibrosis, it is an invasive method and is not widely available. The costs of FibroMax panels are not covered by the Ukrainian national healthcare program, which may limit the generalisability of our findings, as some categories might not attend private medical laboratories to carry out blood tests.

Conclusions

Ukrainian adults with MASLD, had a high prevalence of obesity — BMI ≥ 30 kg/m^2 were recorded in 58 % (95 % CI 52.6—63.43) of the participants. The prevalence of significant liver fibrosis (≥ F2) was 21.26 % (95 % CI 17—26), and advanced liver fibrosis (≥ F3) was observed in 14.7 % (95 % CI 11.05—18.93). We did not find evidence supporting difference in liver fibrosis stage distribution in males versus females and across different BMI categories. However, significant liver fibrosis (≥ F2) was associated with age (OR = 1.0577; 95 % CI 1.0319 to 1.0842, $p < 0.0001$) and the presence of NASH (OR = 4.6731; 95 % CI 1.6131 to 13.5379; $p = 0.0045$). These findings support the need for implementing liver fibrosis screening programs in Ukrainian adults with MASLD.

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Ethical statement. *The study was conducted according to the guidelines laid down in the Declaration of Helsinki and was approved by the Ethic Committee of the Bogomolets National Medical University (Protocol No 152). All patients and/or their representatives gave informed consent during the primary data collection. For statistical analysis, properly anonymised datasets were used.*

Conflicts of interest: none.

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Authorship contributions: conception and design — S. S. S., V. M. B., G. A. S.; acquisition of data — O. V. B.; analysis and interpretation of data — S. S. S., V. M. B., O. V. B.; drafting the article — S. S. S.; critical revision of the article — V. M. B., G. A. S.

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Поширеність фіброзу печінки та ожиріння в пацієнтів із метаболічно-асоційованою стеатотичною хворобою печінки: крос-секційне дослідження

Стадію фіброзу печінки вважають найсильнішим предиктором смертності, пов'язаної з метаболічно-асоційованою стеатотичною хворобою печінки (МАСХП).

Мета — вивчити частоту ожиріння та ступенів фіброзу печінки в пацієнтів із МАСХП.

Матеріали та методи. Проведено багатоцентрове крос-секційне дослідження за участю пацієнтів віком від 18 років, направлених на виконання дослідження Fibromax у період із січня 2020 р. до січня 2024 р. у м. Києві та Київській області зі ступенем печінкового стеатозу > 5 %, підтвердженим за допомогою Steatotest та принаймні одним із п'яти кардіометаболічних чинників ризику (критерії МАСХП, визначені Американською асоціацією з вивчення захворювань печінки (AASLD)). Критеріями вилучення з дослідження була наявність інших гострих або хронічних захворювань печінки, окрім МАСХП. Біохімічні тести, необхідні для панелей FibroMax (BioPredictive, Париж, Франція), виконано у центральній регіональній лабораторії.

Результати. До аналізу було залучено дані 334 пацієнтів із медіаною віку 48 років (міжквартильний інтервал 41—58), 71 % з яких були чоловіками (n = 237). Медіана індексу маси тіла становила 30,9 кг/м^2 (міжквартильний інтервал 28,3—33,5). Ожиріння (індекс маси тіла ≥ 30 кг/м^2) зареєстровано в 58 % (95 % довірчий інтервал (ДІ) 52,6—63,43) учасників. Розподіл за ступенем фіброзу печінки був таким: F0 — 54,2 % (95 % ДІ 48,68—59,63), F1 — 24,6 % (95 % ДІ 20,03—29,53), F2 — 6,6 % (95 % ДІ 4,17—9,8), F3 — 8,7 % (95 % ДІ 5,89—12,23), F4 — 6,0 % (95 % ДІ 3,7—9,1).

Висновки. У пацієнтів із МАСХП виявлено значну частоту фіброзу печінки (≥ F2) та ожиріння. Ці дані підтверджують необхідність впровадження програм скринінгу фіброзу печінки у дорослих пацієнтів з МАСХП в Україні.

Ключові слова: МАСХП, метаболічно-асоційована стеатотична хвороба печінки, фіброз, печінка, стеатоз, ожиріння, жирова хвороба печінки.

ДЛЯ ЦИТУВАННЯ

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