

PREVALENCE AND CLINICAL CHARACTERISTICS OF FATTY HEPATIC DISEASE ASSOCIATED WITH METABOLIC DYSFUNCTION IN A POPULATION WITH NORMAL BODY MASS INDEX. (LEAN MAFLD)

A.L. Ordóñez-Vázquez¹, D. Pérez¹, J.P. Soriano², E. Tovar², E. Juárez¹, M. Uribe¹, Y.I. López¹

¹ Department of Gastroenterology, Hospital Médica Sur, México City, México

² Integral Center for Diagnosis and Therapeutics (CIDyT), Hospital Médica Sur, Mexico City, Mexico

Introduction and Objectives: The prevalence of fatty liver disease associated with metabolic dysfunction (MAFLD) is estimated at 39.1%. 4.1% of patients with lean MAFLD are characterized by steatosis, normal BMI, and metabolic alterations. This work aims to describe the prevalence of lean MAFLD and metabolic characteristics in the Mexican population.

Materials and Methods: Retrospective study of patients with preventive medical check-up from 2019-2020 includes elastography for evaluation of fibrosis and steatosis (controlled attenuation parameter, CAP). Criteria to define lean MAFLD: BMI <24.9 and ³2 metabolic alterations: blood pressure > 130/85, previous diagnosis of hypertension, glucose alterations (100 - 125 mg / dl; 140 -199 mg / dl post-prandial; HbA1c 5.7 - 6.4%, triglycerides > 150 mg / dl, HDL <40 mg / dl in men and <50 mg / dl in women, treatment for dyslipidemia, abdominal circumference ≥102 cm in men and ≥ 88 cm in women and C-reactive protein > 2mg / L). Exclusion: history of liver disease, significant hepatotoxic and/or alcohol consumption (> 2 drinks/day in women, > 3 drinks/day in men). Measures of central tendency and dispersion present data according to the distribution of the sample. A test was performed to analyze differences in clinical variables.

Results: 3863 patients were evaluated, 1754 (45.4%) presented steatosis (CAP > 263 dB / m) and 5.7% (n = 100) met criteria for lean MAFLD. 54% men with median age: 46 [40-56] years, BMI: 23.7 [22.8-24.4] kg / m², CAP: 293 [271-314] dB / m and liver stiffness: 4.0 [3.5-4.7] kPa. 40% had grade 1 steatosis (> 263dB), 17% grade 2 (> 283 dB) and 43% grade 3 (> 296 dB). The clinical characteristics are shown in Table 1. The BMI showed a significant difference according to the degree of steatosis, being greater in patients with grade 3 (G1: 23.6 [IQR 22.8-24.3], G2: 23.3 [IQR 22.8 - 23.9] and G3: 24.1 [IQR 24.1-24.7], p = 0.01)

Discussion: This study confirms the high prevalence of MAFLD / lean MAFLD in the Mexican population. The cut-off points to define the presence of steatosis (> 263 dB / m) has reported greater diagnostic precision (AUROC 0.97) than that used in the clinic (> 232 dB / m); When using the latter, the prevalence of steatosis rises to 65.9%; however, the prevalence of lean MAFLD does not change. This is the first report on the prevalence of Lean MAFLD in Mexico according to different cut-off points of CAP. With more inclusive MAFLD criteria, the prevalence of lean MAFLD does not change. Therefore, it is possible to start non-pharmacological therapy early in patients with overweight, obesity, or normal BMI.

Conclusion: The prevalence of lean MAFLD in the Mexican population is high, with a higher proportion of patients with grade 3 steatosis presenting a higher BMI. The prevalence does not change when using different cut-off points for CAP.

The authors declare that there is no conflict of interest.

Table 1
Clinical characteristics of patients with lean MAFLD

Characteristics	Median [IQR]/ % (n)
Age	46 [40-56]
Weight	66.1 [59-74]

(continued)

Table 1 (Continued)

Characteristics	Median [IQR]/ % (n)
BMI	23.7 [22.8 – 24.4]
kPa	4.0 [3.5-4.7]
CAP	293 [271-314]
IQR CAP	24 [17-29]
Systolic blood pressure	110 [104-122]
Diastolic blood pressure	73 [69-80]
Fasting glucose	94 [89-99]
Triglycerides	171 [110-236]
HDL	40 [34-47]
PCR	1.6 [0.82-3.0]
HbA1c	5.3 [5.1-5.5]
Waist circumference	89 [83-93]

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INCIDENTAL FINDING OF FATTY LIVER IN AUTOPSIES

I.E. Bravo-Espinoza¹, G. Arist-Urista², M.A. Durán-Padilla², J.L. Pérez-Hernández¹, R.Y. López-Pérez¹, P.L. Pérez-Santos¹, J.L. Montenegro-Tablada¹, J. Escobedo-Urbe³, A. Servín-Caamaño³, F. Higuera-De la Tijera¹

¹ Service of Gastroenterology. General Hospital of Mexico Dr. Eduardo Liceaga. Mexico City, Mexico

² Service of pathology General Hospital of Mexico Dr. Eduardo Liceaga. México City, México

³ Internal Medicine Service General Hospital of Mexico Dr. Eduardo Liceaga. Mexico City, Mexico

Introduction and Objectives: Non alcoholic fatty liver disease (NAFLD) and alcoholic fatty liver disease (ALD) are the most common emergent causes of chronic liver disease; they evolve from simple steatosis, steatohepatitis, fibrosis/cirrhosis and hepatocellular carcinoma. Knowing the factors that influence their development and screening can improve the prognosis of these patients.

Objective: To determine the prevalence of incidental findings of fatty liver in necropsies performed for all causes of mortality and to analyze the main characteristics of these patients.

Materials and Methods: Type and design of the study: Observational, descriptive, transversal study.

Procedure: All necropsy records for all causes of mortality registered at the Pathology Department in our center in the last 10 years were reviewed (January 2010 – December 2019). We search the following findings: "liver steatosis," "steatohepatitis," degree of fibrosis/cirrhosis, "atherosclerosis," "heavy alcohol intake," "diabetes, obesity, dyslipidemia, metabolic syndrome." We used descriptive and analytical statistics: X², exact Fisher's test, univariate and multivariate logistic regression models.

Results: 4557 necropsies were registered. Fatty liver was found in 6.4% of the cases. 53.3% were women; 51±15 years old; There was simple steatosis in 156 cases (53.6%) and steatohepatitis with necroinflammatory activity in 135 (46.4%). A 49.8% presented liver fibrosis (F1=38 [13.1%]; F2=48 [16.5%]; F3=15 [5.2%]; F4=44 [15.1%]). The etiology through clinical history and histological findings compatible with alcoholic liver injury occurred in 67 cases (23%), NAFLD in 98 (33.7%), mixed type (NAFLD+ALD) in 19 (6.5%), the etiology could not be identified in 107 (36.8%). The multivariate analysis showed alcohol intake as the main risk factor for necroinflammation (OR=2.58; ICa95%= 1.52-4.38; p<0.0001). History of alcohol intake (OR=2.52; ICa95%= 1.40-4.54; p=0.002) and presence of necroinflammatory activity (OR=6.53; ICa95%= 3.72-11.47; p<0.0001) were predictive factors of fibrosis F2-F4. (Table 1)

Conclusions: In this study, which included all causes of death, incidental findings of steatosis, steatohepatitis, and fibrosis/cirrhosis

were found in a high proportion. Alcohol consumption continues to contribute significantly to liver injury in Mexico.

The authors declare that there is no conflict of interest.

Table 1
Multivariate predictive models

A. Multivariate predictive model to evaluate factors associated with the presence of steatohepatitis with hepatic necroin-flammatory activity at autopsy.				
Variables	P Value	OR	95% CI	
			Lower	Higher
Atherosclerosis	0.008	.405	.208	.789
Obesity	0.948	1.025	.490	2.144
Alcohol consumption	0.044	1.974	1.018	3.827
Diabetes	0.142	.603	.307	1.184
Arterial hipertension	0.185	1.607	.797	3.238
Constant	0.351	1.385		

B. Multivariate predictive model to evaluate factors associated with the presence of significant or greater liver fibrosis (F2-F4) at autopsy.				
Variables	P Value	OR	IC 95% CI	
			Lower	Higher
Atherosclerosis	0.067	.573	.316	1.041
Obesity	0.934	1.032	.489	2.178
Alcohol	0.002	2.529	1.407	4.546
Diabetes	0.955	1.020	.517	2.011
Arterial hipertension	0.077	1.811	.938	3.498
Necroinflammatory activity	<0.0001	6.533	3.720	11.471
Constant	<0.0001	.176		

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FREQUENCY OF RISK FACTORS FOR DEVELOPMENT OF METABOLIC FATTY LIVER DISEASE (MAFLD) IN A CENTER OF CONCENTRATION OF LIVER DISEASES

S. Tellez-Jaen^{1,2}, G. López-Rodríguez¹, R. Contreras-Omaña^{2,3}, M.A González-Unzaga¹

¹ Master in Clinical Nutrition, Academic Area of Nutrition, Institute of Health Sciences, UAEH, Hidalgo, Mexico

² Center for Study and Research in liver and toxicological diseases (CEIHET), Pachuca de Soto, Hidalgo, Mexico

³ Academic area of Medicine, Institute of Health Sciences, UAEH. Hidalgo, Mexico

Introduction and Objectives: Metabolic fatty liver disease (MAFLD) includes a wide spectrum of presentations, ranging from simple steatosis and non-alcoholic steatohepatitis to liver cirrhosis, leading to hepatocellular carcinoma; the etiology of this is multifactorial, with few studies on risk factors in the Mexican population.

Objective: Determine the frequency of risk factors in patients with MAFLD in a liver disease center: CEIHET, Mexico. **Material and methods:** An observational, cross-sectional and retrospective study selected 587 records from the CEIHET, Hidalgo, of patients with a diagnosis of MAFLD, from January 2017 to May 2020. Determine the frequency of risk factors. Statistical analysis was performed through measures of central tendency, dispersion and correlation.

Results: 587 files were analyzed, 56% (n = 329) women; mean age of 51.4 years. The group with simple steatosis had a mean age of 38 years, while in advanced liver cirrhosis, it was 63 years (p 0.005). In schooling, basic education was found for liver cirrhosis in 73.12% (n = 215), and, in previous stages, it was 21.84% (n = 64). In the AHF and APP, type 2 diabetes is shown as the main risk factor with 65.92% (n = 387) and 58.77% (n = 345), respectively; 6 out of 10 patients had two or more risk factors. 77.3% (n = 454) of patients did not meet the

standards of adequate physical activity. Regarding BMI, 73% of patients with simple steatosis were overweight or obese, while, with liver cirrhosis, it was present in 98% without ascites or edema.

Discussion: A prevalence of fatty liver disease of 55.75% was found, being the main reason for liver Disease consultation, constituting the major cause of liver damage in females. The age of patients increases in direct proportion to the severity of liver damage. Of relevance is education, showing RR of 9.2 (p = 0.001), which indicates that the lower the level of education, a later detection is carried out. 77.3% of these patients did not comply with the physical activity standards established by the WHO. When studying the BMI, we noticed the presence of overweight/obesity in at least 88% of the population, correlating with that established in studies in the USA, where the Latino population has the highest BMI and in the highest frequency.

Conclusions: The present study shows that sedentary lifestyle, overweight, obesity and type 2 diabetes are the main determining factors for the presence of MAFLD in the Mexican population, and therefore the importance of its detection and management, to prevent its progression and improve the quality of life of patients.

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PREVALENCE OF COMBINED LIVER DAMAGE IN MEXICAN POPULATION

J.E. Lira-Vera, O. Morales-Gutiérrez, F.Y. Vargas-Durán, P. Alagón-Fernández del Campo, A.K. Soto-Martínez, G. Gutiérrez-Reyes, M. Martínez-Castillo, A.S. Sánchez-Valle, A. Hernández-Barragán, M. Hernández-Santillán, M.F. Higuera-de la Tijera, Y.L. Béjar-Ramírez, J.L. Pérez-Hernández

General Hospital of México Dr. Eduardo Liceaga, México City, México

Introduction and Objectives: Metabolic syndrome and alcohol consumption are the two main causes of liver steatosis. Often, one of them predominates for its development and the other acts as a cofactor. The impact of these entities separately and their damage in synergy in the Mexican population is currently unknown. Our objective is to determine the prevalence of non-alcoholic liver steatosis, alcoholic liver steatosis, and dual damage in donors from the blood bank of the Hospital General de México "Dr. Eduardo Liceaga" (HGMEI) using transient elastography (TE).

Materials and Methods: Pilot study. prospective, transversal, descriptive, and analytical. Healthy donors from the HGMEI blood bank who attended from June 8 to 29 2021 ≥ 18 years old, of any gender, will be included with a body mass index (BMI) ≥ 18.5 . Donors with liver disease of any etiology and liver malignancy will be excluded. Donors who did not attend TE will be eliminated. The equipment used for TE was FibroScan[®] 502 Touch. Descriptive statistics will be used with measures of central tendency and dispersion.

Results: 30 donors were recruited, four were eliminated for not having performed TE. The age of the subjects was 36.53 ± 12.13 years. There were 13 female subjects and 13 males. Seven (26.92%) donors were classified with non-alcoholic fatty liver disease (NAFLD), 2 (7.69%) with alcoholic fatty liver disease (ALD), and 1 (3.84%) subject with liver steatosis due to combined damage; the 16 (61.55%) remaining subjects corresponded to a healthy population. From the NAFLD group, S1 steatosis was documented in 1 subject (14.28%), S2 in 2 (28.56%), and S3 in 4 (57.16%); F0-F1 liver stiffness was found in 6 (85.72%) subjects, and F4 in 1 (14.28%); Of this group, 3 (42.86%) subjects were classified as overweight, 3 (42.86%) with grade 2