describe the characteristics of the Mexican population with overlap syndrome treated at the liver clinic of the General Hospital of Mexico.

Materials and Patients: This is a retrospective, observational and analytical study in which records of patients with ADHD who met overlapping criteria (two or more hepatic autoimmune diseases) between 2020 and 2024 were reviewed to evaluate demographic variables and their presentation. Descriptive statistics with measures of central tendency and dispersion were used using SPSS 25.0. Liver enzymes AST, ALT, GGT, in addition to BT and FA of EHAI, CBP and CEP compared to CEP+EHAI were compared with Student's t-test for independent groups. Values are expressed as means and standard deviations. The Z test for contingency tables for difference of proportions with Bonferroni correction was used to compare the percentages of the degree of fibrosis among the four groups (EHAI, CBP, CEP and CEP+EHAI). A significance level of less than 5% was considered in all tests.

Results: A total of 256 patients with AHD were evaluated, of whom 55 (21.4%) were found to be compliant for overlap syndrome. Of these, 93.6% were female and 7.3% male, with a mean age of 51.89 ± 12.72 years (range: 50.34-53.44). The most common phenotype was CBP/HAI (73.2%). The most frequent autoimmune comorbidities were hypothyroidism, rheumatoid arthritis, Sjögren's syndrome and systemic sclerosis. 32.1% had grade F3 fibrosis and 16.3% cirrhosis, Child A 12.5%, Child B 62.5% and Child C 25%. A higher proportion of fibrosis was observed in F2 and F3 for overlap syndrome compared to EHAI. Regarding enzymatic tests, significant differences were found in GGT (183.5±254.5 vs. 318.5±232.8) and AF between EHAI and overlap syndrome. The most frequent decompensation was variceal gastrointestinal bleeding in 62.5%, and three patients were transplanted.

Conclusions: Overlap syndrome is an uncommon entity, frequent in women, which is usually associated with other autoimmune pathologies. It is associated with more severe results in liver biochemical tests, especially in GGT and AF levels, as well as with a higher degree of fibrosis.

Ethical statement: the research was carried out in accordance with the Helsinki Declaration of the World Assembly 2013.

Declaration of interests: None.

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High Prevalence of the *FTO* T allele (rs9939609 T>A) and its association with a high risk of Type 2 diabetes or metabolic-associated steatotic liver disease (MASLD) in the Mexican population

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Introduction and Objectives: The *FTO* rs9939609 (T>A) polymorphism has been associated with obesity and metabolic disorders, including type 2 diabetes and MASLD. This study examined the distribution of the *FTO* (T>A) polymorphism in Native and admixed populations and its impact on an admixed Mexican cohort's anthropometric and metabolic profiles.

Materials and Patients: In this cross-sectional study, we evaluated 684 unrelated adults from various regions of West Mexico, categorizing them into Native, Mestizo (admixed), and Mestizo-Caucasian groups based on ancestry. Genotyping for the *FTO* rs9939609 polymorphism was performed using an allele discrimination assay via Real-Time PCR. Given the low prevalence of the A allele among the Mestizo subjects (n=333), the biochemical and anthropometric measurements were adjusted by genotypes AA+AT vs. TT. Anthropometric measurements were assessed using body circumferences and electrical bioimpedance. Metabolic profiles were evaluated by measuring glucose, insulin, triglycerides (TG), total cholesterol (TC), high-density lipoprotein cholesterol (HDL-c), aspartate aminotransferase (AST), and alanine aminotransferase (ALT). Metabolic abnormalities were defined as follows: hypercholesterolemia (HCL) with TC ≥200 mg/dL, high LDL-c (H-LDL) with LDL-c ≥130 mg/dL, hypoalphalipoproteinemia (HALP) with HDL-c <40 mg/dL, hypertriglyceridemia (HTG) with TG ≥150 mg/dL, hyperglycemia (HGL) with fasting glucose ≥100 mg/dL, hyperinsulinemia (HINS) with insulin >9 μUI/dL, and insulin resistance (IR) with HOMA-IR ≥2.5. Principal Component Analysis (PCA) was used to visualize genetic divergence focusing on the TT genotype. Univariate and multivariate logistic regression analyses were conducted to assess the risk association between the TT genotype and metabolic abnormalities. Statistical analyses were performed using R Studio and SPSS software.

Results: The Huicholes Native population exhibited the highest T allele frequency and TT genotype frequency (94% and 89%), followed by Mestizos from Guadalajara (74% and 56%). In contrast, Mestizo-Caucasians from Cuquio had the lowest T allele frequency (28.1%) and the highest A allele frequency (32.4%) within the Mestizo-Caucasian population of Villa Purificación. Genetic distance analysis using PCA based on *FTO* TT genotype prevalence revealed that the Mestizo-Caucasian population formed a distinct cluster, while Native populations displayed the highest genetic divergence among groups. When analyzing the Mestizos by genotype (AA+AT vs. TT), no significant differences were found in BMI or body fat percentage. However, metabolic profiles of TT genotype carriers showed higher waist-to-height ratios (0.49±0.08 vs. 0.52±0.07, p<0.001), insulin levels (8.8±5.2 vs. 10.8±7.3 μUI/dL, p<0.041), TG (125.8±65.3 vs. 141.8±66.5 mg/dL, p<0.017), and VLDL-c (25.6±14.2 vs. 29.1±14.8 mg/dL, p<0.015). Univariate analysis indicated that the TT genotype was associated with a higher risk of HTG (OR=1.7, 95%CI:1.07-2.73, p<0.027), IR (OR=1.79, 95%CI:1.06-3.07, p<0.031), and HGL (OR=2.77, 95%CI:1.5-5.36, p<0.002) compared to AA+AT genotypes. Multivariate logistic regression further confirmed that TT genotype carriers had a higher risk of HGL compared to AA+AT genotype carriers (OR=2.50, 95%CI:1.213-5.152, p<0.013).

Conclusions: The T allele of the *FTO* (rs9939609 T>A) is more prevalent in Native and Mestizo populations and is associated with higher risks of IR, HTG, and HGL, all of which are linked to type 2 diabetes and MASLD. These results highlight a genetic predisposition to metabolic diseases in populations with significant Amerindian ancestry, particularly in hepatopathogenic environments.

Ethical statement: The Institutional Review Board approved this study, and participants signed a written informed consent form prior to entry.

Declaration of interests: None.

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Utility of the CLIF-C AD score to assess readmission in patients with acute decompensation of non-ACLF cirrhosis.

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Introduction and Objectives: Patients with cirrhosis who require hospitalization due to acute decompensation (ascites, digestive bleeding, hepatic encephalopathy, among others), have a variable adverse prognosis, depending on whether they have acute-on-chronic liver failure (ACLF), the CLIF-C AD test allows to identify the risk of readmission, development of ACLF and mortality.

Materials and Patients: A cross-sectional study was carried out between October 2023 and May 2024. The CLIF-C AD test was calculated in patients with decompensated cirrhosis. The results were analyzed using descriptive statistics, frequency analysis, and percentages. Group comparison analysis was performed with Student's T and chi square as appropriate, to determine the sensitivity and specificity of this test, and a ROC curve was performed; Likewise, Kaplan Meyer curves of 2 groups were used according to the CLIF-C AD categorized as 62 or less and greater than 62; having a significant value of p:0.005; The analysis was performed with the statistical program SPSS version 25.

Results: There were 40 patients; 32 men and 8 women. Cirrhosis etiology: alcohol 30 patients (75%), MASLD 8 patients (20%), autoimmune hepatitis 2 patients (5%). Cause of decompensation: Upper digestive bleeding in 19 patients (47.5%), urinary infection in 8 patients (20%), tense ascites in 4 patients (10%), spontaneous bacterial peritonitis in 3 patients (7.5%). Findings on admission: ascites 27 patients (67.5%), hepatic encephalopathy 27 patients (67.5%), shock 18 patients (45%). The CLIF-C-AD score with a median of 68 IQR (52-73). Readmission 35 patients (87.5%); The cause of readmission was hepatic encephalopathy in 17 patients (42.5%), upper digestive bleeding in 10 patients (25%), and acute kidney injury in 3 patients (7.5%). Using Student's T, the CLIF-C AD score is determined for those who were readmitted with a mean of 66 and for those who were not readmitted with a mean of 41 ($p<0.001$). In the ROC curve, the area under the curve was found to be 0.950 with 95% CI (0.890-1.000) p=0.001, sensitivity 77%, specificity 100%, with a Youden point of 62 points; Therefore, it is categorized into 2 groups based on this score for a cumulative incidence of readmission by Kaplan Meier curve, showing a difference between the groups with a Log Rang test of 0.005.

Conclusions: The CLIF-C AD score is a practical, adequate, and useful tool to determine the outcome of decompensated cirrhotic patients, which will allow the identification of high-risk patients and the implementation of close follow-up strategies and timely therapeutic adjustment and avoid adverse outcomes. More studies are required and increased sample size.

Ethical statement: This protocol was registered and approved by the ethics committee. Patients' identities are protected. Consent was obtained.

Declaration of interests: None.

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Association between autoimmune hepatitis and leukocytoclastic vasculitis, a case report

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Introduction and Objectives: Autoimmune hepatitis has an incidence that ranges from 0.9-2%. It is usually associated with other liver diseases and other autoimmune disorders, however, there are few cases associated with leukocytoclastic vasculitis. Now we present the case of an association between autoimmune hepatitis and leukocytoclastic vasculitis.

Materials and Patients: This is a female patient who presented constant pain in the right hypochondrium since 2019, intermittent fever with nocturnal presentation.

In the Personal pathological history, she reported that was healthy, had an uncomplicated pregnancy, had no history of traveling outside the country or visiting caves, had no family history of autoimmune, genetic, or infectious diseases, had no history of exposure to chemical substances or people with a diagnosis of tuberculosis. During the years 2019 to 2024, in addition to pain in the hypochondrium and fever, they presented myalgia, arthralgia, morning stiffness that improves with activity with signs of inflammatory pain, facial erythema, and maculopapular skin rashes on the hands and legs on sun exposure. She presented Eye with foreign body sensation, and we referred to rheumatology, considering the possibility of systemic lupus erythematosus and Sjögren's syndrome, complementary studies were performed, and she was sent to ophthalmology where a normal tear breakup time of less than 5 seconds was concluded. and Sjögren's Syndrome is ruled out. Antibodies are performed to rule out systemic lupus erythematosus, such as Anti DNA and Anti SM, being negative.

Results: We performed a diagnostic approach in a patient with constitutional symptoms, skin rashes and constant pain in the right upper quadrant. Complementary imaging studies were requested such as USG of the liver and CT scan of the abdomen, both of which showed signs of cirrhosis, so autoimmune hepatitis began to be suspected. Within the liver studies, the transaminases are normal, alkaline phosphatase elevated, and hyperglobulinemia. Protein electrophoresis with immunofixation was performed, being positive for HyperGammaglobulinemia, subsequently, biopsies of the lip, liver and skin lesions were taken. Amylodosis and Sjögren's syndrome were ruled out with these studies, however the skin lesions demonstrated leukocytoclastic vasculitis and the antibody studies showed positive ANA, with AMA, ANCA, DNA, SM negative, and the liver biopsy showed findings related to autoimmune hepatitis. Therefore, by ruling out connective tissue and associated oncological diseases, the diagnosis of autoimmune hepatitis was established, since when using the simplified diagnostic criteria of the International Autoimmune Hepatitis Group, 8 points were met, thus confirming the diagnosis of this entity. Due to hypergammaglobulinemia, hematological diseases were ruled out when bone marrow aspiration and biopsy were performed.

Conclusions: We did the approach of cirrhosis of unknown origin. We proceeded to look out autoimmune liver diseases, connective tissue and oncological diseases all of that were ruled out. Reaching the diagnosis required the commitment of several specialties: internal medicine, rheumatology, hematology and pathological anatomy.

Ethical statement: The authors declare that the article is unique, it has not been previously published in any other media services and there are informed consents signed by the participants and the patient for their participation in the hepatology congress held by the AMH 2024.

Declaration of interests: None.

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