Annals of Hepatology 30 (2025) 101791

Contents lists available at ScienceDirect

Annals of Hepatology

journal homepage: www.elsevier.es/annalsofhepatology

Abstracts Asociación Mexicana de Hepatología (AMH) 2024

Hyperonitinemia-Hyperammonemia-Homocitrullinuria syndrome. Neonatal presentation with acute liver failure.

César U. Amaro-Reynoso, Jose L. Flores-Castillo, Catherine N. Pineda-Cely, Rodrigo Vázquez-Frías

Pediatric Gastroenterology & Nutrition, Children's Hospital of Mexico "Federico Gomez", National Institute of Health, Mexico City, Mexico

Introduction and Objectives: Urea cycle defects occur in 1/35,000 live births and Hyperonitinemia-Hyperammonemia-Homocitrullinuria (HHH) syndrome represents 1-4% of this group of diseases, which represents an autosomal recessive defect due to variants of the SLC25A15 gene. The present work describes the first case of HHH syndrome reported in Mexico.

Materials and Patients: We present a 5-month-old female infant, daughter of the second pregnancy of non-consanguineous parents, originally from Quintana Roo, born at term with intrauterine growth restriction, presented early neonatal sepsis and required ventilatory and hemodynamic treatment, in the second week she presented Cholestasis with normal GGT, coagulopathy, which did not correct after treatment with vitamin K, and irritability with hyperammonemia up to 640umol/L, which led to the diagnosis of neonatal acute liver failure.

At the initial approach, infectious etiology was ruled out, with high suspicion of gestational alloimmune liver disease, due to the presence of elevations of alpha-fetoprotein 12,410ng/mL and ferritin 1,590ng/mL. Gaucher disease, Niemann Pick, and lysosomal acid lipase deficiency were ruled out. Metabolic screen with hyperornithinemia (435.79 mmol/L). The genetic study found a pathogenic variant in a homozygous state of the acceptor site of the splicing of intron 2 of the SLC25A15 gene.

Two doses of human immunoglobulin and supportive treatment for liver failure with menadione and ammonium binders were administered with a favorable therapeutic response; the liver failure was remitted 4 weeks after the established management.

Results: The present work describes the first case of HHH syndrome reported in Mexico, which presented with neonatal acute liver failure associated with two of the three biochemical characteristics described due to hyperammonemia and hyperornithinemia. Likewise, a homozygous variant was identified in SLC25A15 and classified as pathogenic.

Conclusions: This report highlights the first documented case of HHH syndrome in Mexico, emphasizing its association with neonatal acute liver failure, hyperammonemia, and hyperornithinemia. The identification of a pathogenic homozygous variant in the SLC25A15 gene reinforces the importance of genetic studies for early diagnosis and targeted management of urea cycle disorders.

Ethical statement: This work complies with current regulations on bioethical research, obtained authorization from the institution's ethics committee, and does not contain personal information that would allow the patient to be identified.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101792

The GDF11 represses the Stat3 signaling pathway, conferring metabolic, inflammatory, and oncogenic restrictions in cells derived from human hepatocellular carcinoma.

Melissa Sánchez-Rodríguez[1,2], Monserrat Gerardo-Ramírez[3], Arturo Simoni-Nieves[4], María Concepción Gutiérrez-Ruiz[2], Roxana U Miranda-Labra[2], Verónica Souza[2], Leticia Bucio-Ortiz[2], Alejandro Escobedo-Calvario[1,2], Luis E. Gomez-Quiroz[2,3]

[1] *Experimental Biology Postgraduate, DCBS, Universidad Autónoma Metropolitana Iztapalapa, Mexico City, Mexico*
[2] *Experimental and Translational Medicine Area, Health Science Department, Universidad Autónoma Metropolitana-Iztapalapa, Mexico City, Mexico*
[3] *Department of Biochemistry and Molecular Genetics, University of Virginia, Charlottesville, VA, USA*
[4] *The foundation for liver research, London, UK*

Introduction and Objectives: GDF11 has shown potential in displaying anti-tumor effects in cells derived from human HCC, but the molecular mechanisms that lead to this, as well as the early transcriptomic response of GDF11 in HCC, remain a mystery. To identify potential targets for therapeutic intervention revealed by GDF11 treatment in HCC.

Materials and Patients: Huh7 cells were treated for 12 h with 50 ng/ml of GDF11, and sequencing was performed using the Illumina HiSeq4000 platform. The results were filtered with a $p \leq 0.01$, $\pm$ 1.5-fold change, and an FDR= 0.05. Functional and enrichment analysis was done using the Ingenuity Pathway Analysis (IPA) program.

Results: Our data show 1450 differentially expressed genes. It is observed that GDF11 has a profound impact on highly oncogenic pathways, highlighting the Stat3 pathway, beta-catenin, and HIF-1 alpha, among others. Functional analysis revealed that GDF11 could

reduce cholesterol and lipid metabolism in general, inflammation, drug resistance, and stemness capacity. It is noteworthy that tumors grown under a lipid-rich environment exhibit significant activation of Stat3, so the decrease in the molecular signature of Stat3 induced by GDF11 strongly suggests a mechanism mediated by the repression of the pathway of this factor transcription, impacting metabolism, inflammation, differentiation, and drug resistance.

Conclusions: Our study's novel finding is that GDF11 represses the Stat3 signaling pathway, thereby imposing metabolic, inflammatory, and oncogenic restrictions. GDF11 represents a good promise in the treatment of HCC.

Ethical statement: The present work has not involved animals or patients.

Declaration of interests: None.

Funding: UAM-2024, and Conahcyt.

https://doi.org/10.1016/j.aohep.2025.101793

Prevalence and Main Characteristics of Portal Venous System Thrombosis in Patients with Advanced Decompensated Chronic Liver Disease

Diego F. Abendaño-Rivera, Paloma M. Diego-Salazar, Saul A. Vera-Nungaray, Karina Cazarin-Chavez, Mónica Baca-García, Yelba G. Céspedes Saballos, Fátima Higuera-De La Tijera

Gastroenterology and Hepatology Department at the General Hospital of Mexico "Dr. Eduardo Liceaga." Mexico City, Mexico

Introduction and Objectives: Chronic liver disease (CLD) is common globally; in advanced stages, decompensation and complications such as portal venous system thrombosis (PVST) increase.

Objective: To describe the prevalence and main characteristics of hospitalized patients with decompensated CLD and PVST in a tertiary care center.

Materials and Patients: An observational, longitudinal, and descriptive study was conducted on hospitalized patients in a tertiary care center in Mexico City with decompensated CLD during the period 2022 and 2023. These patients had imaging studies (CT scan or hepatic Doppler ultrasound) reporting PVST. Follow-up was conducted from the diagnosis of CLD, documentation of PVST, and survival until 2024. Patients with PVST without a diagnosis of CLD or without current follow-up were excluded.

Data will be analyzed using the SPSS statistical software, version 23. Qualitative variables will be presented as frequencies and percentages, while numerical variables will be shown as means and standard deviations or medians and ranges, as appropriate.

Results: We reviewed 788 records of patients with decompensated CLD, of which 60 had PVST, with a period prevalence of 7.6%. Of this group, 20% had hepatocellular carcinoma. Of the total, 37 were women (61.6%), with an average age of 59 ± 9 years. According to the Child-Pugh classification, 6 cases were class A (10%), 25 were class B (42%), and 29 were class C (48%), with an average MELD score of 19.4 and MELD-Na of 21.8. All patients with PVST had at least one prior decompensation before admission (100%), with 43% and 31% having two and three decompensations, respectively. The most frequent etiology was MASLD (48.3%), and the main reason for hospitalization was variceal gastrointestinal bleeding (50%). The portal vein was the most affected vessel (100%), with 20% of cases showing extension to the superior mesenteric vein, of which 76% presented signs of chronicity. The average time from CLD diagnosis to PVST identification was 3.5 ± 2.83 years. By 2024, 41% of patients with PVST had died, with septic shock being the leading cause of death during hospitalization.

Conclusions: The prevalence of PVST in our study is similar to that reported in the literature (3-25%). It is more frequent in women, has a metabolic etiology, and primarily affects the portal vein. To date, 41% have died, mainly from septic shock. However, PVST may be an important factor to study in the progression of CLD.

Ethical statement: This study was conducted in accordance with the ethical principles of our hospital. All data were handled with strict confidentiality and used solely for research purposes.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Reviewed Records	F	% 788
Portal Vein Thrombosis	60	7.6%
Hepatocellular Carcinoma	12	20%
Affected vessel		
Portal Vein	60	100%
Superior Mesenteric Vein	13	22%
Inferior Mesenteric Vein	0	0%
Splenic Vein	6	10%
Periodicity of Portal Vein Thrombosis		
Recent	17	28.30%
Chronic	43	71.70%
Etiology of Chronic liver disease		
Alcohol	19	31.70%
METLAD	3	5%
MASLD	29	48.30%
Viral	4	6.70%
Autoimmune	5	8.30%
Child Pugh		
A	6	10%
B	25	41.70%
C	29	48.30%
MELD	19.4 ± 6	
MELD NA	21.8 ± 6	
Number of prior decompensations		
1	60	100%
2	18	30%
3	19	31%
Reasons for Admission		
Variceal Hemorrhage	30	50%
Ascites	15	25%
Hepatic Encephalopathy	5	8.30%
Infection	3	5%
Acute Kidney Injury	1	1.70%
Study Protocol	5	8.30%
Cardiogenic Shock	1	1.70%
Average time between CLD diagnosis and PVST		3.5 ± 2.83 años
Death	25	41.7%
Causes of Death		
Septic shock	13	52%
Hypovolemic shock	2	8%
Cardiogenic shock	1	4%
Respiratory failure	1	4%
Disease progression	8	32%

CLD: Chronic Liver Disease; MASLD: Metabolic Associated Steatotic Liver Disease; METLAD: Metabolic Liver Disease; MELD: Model for End-Stage Liver Disease; MELD NA: Model for End-Stage Liver Disease without Ascites; PVST: Portal Vein and Splenic Vein Thrombosis.

https://doi.org/10.1016/j.aohep.2025.101794

Experience with dexmetomidine in the management of alcohol withdrawal syndrome for patients with cirrhosis

Liliana I. Gallardo-González, Jose L. Perez-Hernandez, Maria F. Higuera-De la, Tijera, Mary C. Alegría-Ovando

Department of Gastroenterology and Hepatology. General Hospital of Mexico "Dr. Eduardo Liceaga." Mexico City, Mexico

Introduction and Objectives: Lorazepam is the first-line treatment in patients with alcohol withdrawal syndrome (AWS). In patients with cirrhosis and AWS, the use of dexmetomidine (DXM)

has been poorly studied. The objective of this study is to report the effect of DXM in patients with cirrhosis and AWS.

Materials and Patients: Observational, retrospective, descriptive and analytical study. Patients with cirrhosis and AWS, treated with lorazepam, DXM, or both, were included. The Clinical Institute Withdrawal Assessment of Alcohol Scale (CIWA-Ar) data was collected before and after treatment, as well as the days of in-hospital stay (IHS). The quantitative variables were summarized using non-parametric descriptive statistics according to the distribution of the variables (average and range), as well as frequencies and percentages in the case of qualitative variables. To compare between three independent groups, the Kruskal-Wallis (KW) and Jonckheere-Terpstra (JT) tests were used. A significant difference was considered one with a value of $p<0.05$.

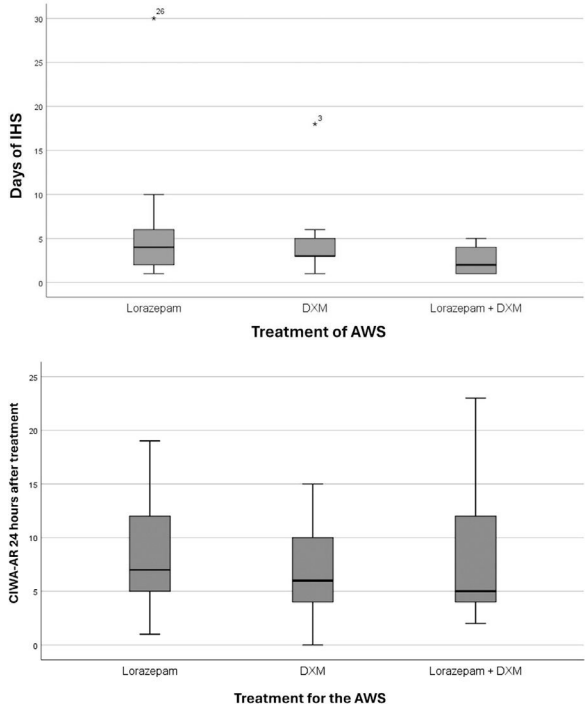
Results: 39 patients were included, 37 (94.9%) men, average age 41 (27-66) years, alcohol consumption 287 (64-960) g/day, CIWA-Ar at admission 20 (10-46) points, Child -Pugh 10 (5-14) points, MELD-Na 16 (8-40) points. Regarding the AWS treatment: 17 (43.6%) received lorazepam, 13 (33.3%) DXM, and 9 (23.1%) lorazepam + DXM. When compared between groups there were no differences in terms of days of IHS [4 (1-30) vs. 3 (1-18) vs. 2 (1-5) respectively for lorazepam, DXM, lorazepam + DXM; KW p=0.86, JT p=0.82], nor in terms of CIWA-Ar at 24 hours post-treatment [7 (1-19) vs. 6 (0-15) vs. 5 (2-23) respectively for lorazepam, DXM, lorazepam + DXM; KW p=0.19, JT p=0.45]. No serious adverse effects were reported with any of the three strategies.

Conclusions: DXM appears to be an effective and safe option for the treatment of AWS in patients with cirrhosis. However, clinical trials are required to validate our findings.

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

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.



AWS: Alcohol Withdrawal Syndrome; CIWA-Ar: Clinical Institute Withdrawal Assessment of Alcohol Scale; DXM: Dexmedetomidine; IHS: In-Hospital Stay.

https://doi.org/10.1016/j.aohep.2025.101795

Characterization of a population evaluated for hepatocarcinoma in a third-level center.

Diana B. Lorenzo-Valle[1], Laura V. Cupil-Escobedo[1], Diego F. Abendaño-Rivera[1], Kenia M. Bastida-Guadarrama[1], Víctor M. Paez-Zayas[2], José L. Pérez-Hernández[1], María F. Higuera-de-la-Tijera[1]

[1] *Gastroenterology department, General Hospital of México "Dr. Eduardo Liceaga."*
[2] *Organ transplant department, General Hospital of México "Dr. Eduardo Liceaga". Mexico City, Mexico*

Introduction and Objectives: Hepatocellular carcinoma is one of the most common cancers worldwide. Viral hepatitis, alcohol, and non-alcoholic fatty liver disease are important risk factors. To describe the clinical characteristics, staging, treatment, and outcomes of patients with HCC at a third-level hospital.

Materials and Patients: A retrospective, descriptive study was carried out from January 2021 to April 2024, in which 76 patients from the liver clinic consultation were included. Clinical characteristics, biochemical characteristics, staging and treatment were collected.

Results: The study included 76 patients, mean age 62 ±8(53.9% men); 88.1% of patients with cirrhosis; with the following etiologies: 30.2% due to MAFLD, 19.7% due to alcohol, 19.7% due to Hepatitis C and 18.4% due to other causes, With MELD 12 ±6.22, MELD Na 14.1± 5.4, 67 patients were classified in BCLC, of which 13.4% are in stage A, 59.7% B, 10.4% C, and 16.4% D. 36 patients were candidates for treatment distributing in 52.7% Transarterial Chemoembolization (TACE), 11.1% ablation, 11.1% TACE and ablation:; 2.7% Medical (Lenvatinib), 8.3% medical and radiological (Nivolumab/Lenvatinib with TACE/Ablation), 11.1% radiological (TACE) and transplant and 2.7% transplant. Treatment response evaluation according to mRESIST criteria: 11.1% complete response, 25% partial response, 33.3% stable disease and 27.7% progression. The 3-month mortality rate was 8.3%.

Conclusions: In our population group, mostly men, the most common etiology is MAFLD, two-thirds in intermediate stage, 47% were candidates for treatment, predominating the use of TACE. One-third remained with stable disease and 11.1% had a complete response. Mortality at 3 months was low.

Ethical statement: The authors declare that no patient data appear in this article.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1
Characteristics of patients with HCC n = 76

Middle ages	62 ± 8 años
Male	41 (53.9)
Female	35 (46.0)
with cirrhosis	67(88.1)
etiologies	
MAFLD	23 (30.2)
Alcohol	15 (19.7)
Hepatitis C	15 (19.7)
Other causes	14 (18.4)
MELD	12 ± 6.2
MELD-Na	14 ± 5.4
BCLC	
Stage A	9 (13.4)
Stage B	40(59.7)
Stage C	7 (10.4)
Stage D	11(16.4)
Candidates for treatment	36 (47.3)
Forms of treatment	

(*continued*)

TACE	19 (52.7)
Ablation	4 (11.1)
TACE + Ablation	4 (11.1)
Medical	1 (2.7)
Medical and radiological	3 (8.3)
Radiological and transplant	4 (11.1)
Transplant	1 (2.7)
Treatment response evaluation	
complete	4 (11.1)
Partial	9 (25)
Stable	11 (33.3)
Progression	10 (27.7)

BCLC, Barcelona Clinic Liver Cancer; HCC, Hepatocellular carcinoma; MAFLD, Metabolic dysfunction-associated fatty liver disease; MELD, Model for End-Stage Liver Disease; MELD-Na, Model for End-Stage Liver Disease-Sodium; TACE, Transarterial chemoembolization.

https://doi.org/10.1016/j.aohep.2025.101796

Pirfenidone limits the progression of malignancy and slows the development of fibrosis in experimental hepatocarcinoma.

Scarlet Arceo-Orozco[1], Fernando Caloca-Camarena[1], Roberto Flores-Peña[1], Marina Galicia-Moreno[1], Hugo Christian Monroy-Ramírez[1], Juan Armendáriz-Borunda[1,2]

[1] *Institute of Molecular Biology in Medicine and Gene Therapy, University Center for Health Sciences (CUCS), University of Guadalajara, Guadalajara, Mexico*
[2] *School of Medicine and Health Sciences, Tecnológico de Monterrey Guadalajara Campus, Zapopan, Mexico*

Introduction and Objectives: Hepatocarcinoma (HCC) is the fourth cause of cancer death in Mexico, derived from fibrotic, metabolic and inflammatory alterations, modifiable by pirfenidone (PFD), which has shown beneficial effects at these levels. Our aim is to demonstrate the hepatoprotection of PFD in a model of HCC progression.

Materials and Patients: To evaluate the effect of PFD in a setting similar to that of patients at risk for HCC, we developed an experimental model of neoplastic progression, with damage induction for 9 weeks, followed by free progression of the disease. Male Fischer-344 strain rats (n=18) were divided into three groups: CTL: untreated control; HCCp: damage progression group (generated by administration of diethylnitrosamine (DEN) 50 mg/kg and 2-Acetaminofluorene (2AAF) 25 mg/kg weekly for 9 weeks and damage progression); and HCCp/PFD: damage progression group plus administration of PFD 300 mg/kg daily starting from week 9. The weight of the animals in the different study groups was recorded, and morphological and histopathological analyses of the liver were performed. H&E, Masson's Trichrome (MCT) and Sirius Red (SR) staining were performed, and GPC-3 and Ki-67 proteins were analyzed by immunohistochemistry. This was done in order to evaluate the presence and severity of fibrosis, malignancy and proliferation markers. Data were analyzed by ANOVA followed by Tukey's post-hoc tests to identify differences between study groups. Comparisons with p values ≤ 0.05 were considered significant.

Results: Treatment with PFD did not produce a difference in weight between the groups. However, it caused a tendency to decrease in body weight, net weight and relative liver weight. The morphological analysis of the liver of the HCCp/PFD group showed surface characteristics, coloration and consistency similar to the control, in addition to the evident attenuation in the progression of cancerous nodules, with a 34.02% reduction in the total tumor incidence. At the tissue level, PFD decreased the accumulation of extracellular matrix and collagen I and III deposition. The fibrotic bridges present in the HCCp/PFD group are incipient and of interstitial disposition, contrary to the intensity and tissue restriction shown in the HCCp group. In addition, dysplastic changes were limited after PFD treatment, with a decrease in hyperchromasia and nuclear pleomorphism, fewer cells with loss of polarity and nucleus/cytoplasm ratio, together with a decrease in necrotic cells, as well as a decrease in ductal reaction and destruction of portal triads compared to the damage group. Finally, in the HCCp/PFD group, the expression of both GPC-3 and Ki-67 was reduced, slowing tumor progression.

Conclusions: PFD administration had a hepatoprotective effect on tumor progression and slowing of fibrosis in our experimental model based on our results, we can conclude that PFD could work at the level of primary prevention of HCC in patients with chronic liver disease.

Ethical statement: Our research with animal models is governed by the highest ethical and animal welfare standards. The use of animals was scientifically justified, minimizing their suffering and providing them with adequate living conditions. All regulations were complied with, and transparency and accountability in research were continuously re-evaluated and maintained.

Declaration of interests: None.

Funding: This project has funding from both CONACYT and internal funds from the University of Guadalajara obtained from Dr. Juan Armendáriz Borunda and Dr. Christian Monroy Ramírez.

https://doi.org/10.1016/j.aohep.2025.101797

The neutrophil-to-lymphocyte ratio (NLR) can predict the presence of bacterial infections in hospitalized patients with decompensated cirrhosis.

Paloma M. Diego-Salazar, Diego F. Abendaño-Rivera, Cristian Y. Sánchez-Sánchez, Karina Cazarín-Chávez, Kevin S. Vázquez-Hernandez, Fátima Higuera-de-la-Tijera

Gastroenterology and Hepatology Department, General Hospital of México "Dr. Eduardo Liceaga", Mexico City, Mexico

Introduction and Objectives: Liver cirrhosis can increase susceptibility to bacterial infections, which are often underestimated due to subtle or absent symptoms and the absence of additional biochemical markers. Early identification of these infections is limited in these patients. The objective is to determine the effectiveness of the Neutrophil-to-Lymphocyte Ratio (NLR) as a predictor of bacterial infections in hospitalized patients.

Materials and Patients: The aim of this retrospective, observational, analytical, cross-sectional study was to validate a prognostic index for patients diagnosed with liver cirrhosis and hospitalized from October 2023 to March 2024. The study included variables such as age, sex, etiology of liver disease, decompensation events leading to hospitalization, and biochemical data to calculate MELD, Child-Pugh, MELD-Na scores, and the degree of acute-on-chronic liver failure upon admission using the EASL-CLIF-ACLF, European Association for the Study of the Liver - Chronic Liver Failure Acute-on-Chronic Liver Failure score. Additionally, the presence of bacterial infection was determined through laboratory tests, imaging studies, and corresponding cultures. The Neutrophil-to-Lymphocyte Ratio was established by dividing the respective total cell counts. The study summarized the variables using descriptive statistics and constructed the area under the curve (AUC-ROC) with 95% confidence intervals. A p-value <0.01 was considered significant.

Results: A total of 183 patients were included in the study. There were 93 (50.8%) men, with an average age of 55.8 $\pm$ 10 years. The

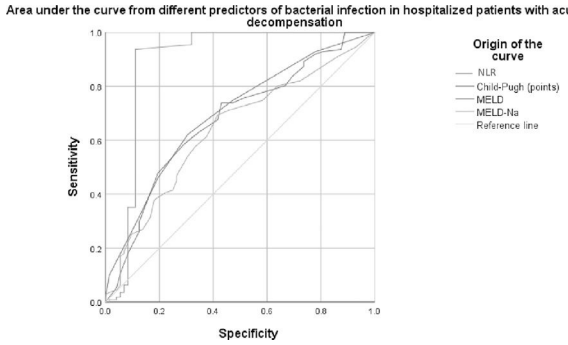
distribution by etiology was as follows: Alcohol 72 (39.3%), MASLD 55 (30.1%), Autoimmune 27 (14.8%), Hepatitis C Virus 16 (8.7%), MetALD 16 (8.7%). According to the Child-Pugh score, 91 (49.7%) were class C, 68 (37.2%) were class B, and 24 (13.1%) were class A. Acute decompensations reported were: Variceal bleeding in 90 patients (49.1%), Ascites in 79 (43.1%), and Hepatic Encephalopathy in 102 (55.7%). The degree of acute-on-chronic liver failure upon admission was established: Grade 1 in 30 patients (16.3%), grade 2 in 29 (15.8%), and grade 3 in 12 (6.5%). It was found that 111 (60.7%) patients had bacterial infections during hospitalization, which were urinary infections 69 (37.7%), spontaneous bacterial peritonitis 22 (12%), pneumonia 13 (7.1%), bacteremia 7 (3.8%). NLR ≤ 1.9 predicted bacterial infection with a sensitivity of 94% and specificity of 89% (AUC-ROC: 0.89, 95% CI 0.82-0.95, p <0.0001), compared to other scales such as Child-Pugh, MELD, or MELD-Na with AUC-ROC of 0.69 (0.62-0.77), 0.68 (0.60-0.76), 0.64 (0.56-0.72) respectively.

Conclusions: The Neutrophil-to-Lymphocyte Ratio (NLR) is highly effective in predicting bacterial infections in patients with liver cirrhosis, surpassing the Child-Pugh, MELD, and MELD-Na scales. This indicates that NLR is a valuable tool for early identification of infections in this patient population.

Ethical statement: This study was reviewed and approved by the ethics committee.

Declaration of interests: No conflicts of interest.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.



NLR: Neutrophil-to-Lymphocyte Ratio; MELD: Model for End-Stage Liver Disease; MELD-Na: Model for End-Stage Liver Disease with Sodium.

https://doi.org/10.1016/j.aohep.2025.101798

Liver alterations found in patients with inflammatory bowel disease in a tertiary care center.

Kenia M. Bastida-Guadarrama[1],
Jorge Luis De-León-Rendón[2],
Viridiana López-Ladrón-de-Guevara[1],
Santiago Camacho-Hernandez[1],
Fátima Higuera-de-la-Tijera[1]

[1] *Department of Gastroenterology and Hepatology, General Hospital of Mexico "Dr. "Eduardo Liceaga."*
[2] *Department of Coloproctology, General Hospital of Mexico "Dr. "Eduardo Liceaga." Mexico City, Mexico*

Introduction and Objectives: Inflammatory bowel disease (IBD) encompasses two main conditions: Crohn's disease (CD) and ulcerative colitis (UC); the association between these diseases and liver diseases has been described. The objective of this work is to report the frequency of these alterations in a tertiary hospital.

Material and Patients: Observational, retrospective, descriptive, case series type. Patients with a diagnosis of IBD were included, including its two variants, CD and UC. An intentional search was carried out for alterations in the liver biochemical profile, findings in imaging methods and their clinical correlation, primary biliary cholangitis (PBC), primary sclerosing cholangitis (PSC), autoimmune hepatitis (AIH), among other anatomical alterations. Qualitative data are expressed in percentages and quantitative data in mean±SD.

Results: 62 patients were included, of which 31 were men and 31 were women, with a mean age of 42.74±15.47 years. Within this universe, there were 22 patients with CD (35.4%), 40 patients with UC (64.5%) who, according to the Montreal classification, were classified as E1=4 patients (10%), E2=12 patients (30%), E3=24 patients (60%). There were 16 patients (25.8%) who had some reported liver alteration, of which 8 (12.9%) with autoimmune liver diseases, 5 with PSC (8.06%), 2 with PBC (3.22%), 1 with HAI (1.61%). When intentionally searching for liver morphological alterations and as an incidental finding, they were found 3 (4.83%) simple hepatic cysts, 1 (1.61.%) hepatic hemangioma, and finally, 2 (3.22%) hepatitis C virus (HCV) infections.

Conclusions: IBD is commonly associated with autoimmune liver disorders. Likewise, the CUCI-PBC and CUCI-HAI relationship was found, which agrees with the international literature and is extrapolated with the population studied. Other incidental findings are also frequent, especially the high frequency of HCV compared to the general population.

Ethics statement: The study was conducted in accordance with the Helsinki Declaration (2013 World Medical Association update).

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101799

Correlation of Cardiovascular Risk Score with Alterations in Carotid Intima-Media Thickness in Patients with MASLD

José L. Vargas-Basurto[1], Ana D. Cano-Contreras[2],
Héctor R. Ordaz-Alvarez[1],
Genesis P. Martinez-Perez[1],
Kevin D. Gonzalez-Gomez[1], Jose M. Remes-Troche[1]

[1] *Institute of Medical and Biological Research, Universidad Veracruzana, Veracruz, Mexico*
[2] *Master's Degree in Translational Biomedicine, Institute of Medical and Biological Research, Universidad Veracruzana, Veracruz, Mexico*

Introduction and Objectives: MASLD is associated with cardiovascular disease due to systemic inflammation and endothelial dysfunction. Carotid intima-media thickness (CIMT) and atherosclerosis are considered markers of generalized atherosclerosis and increased cardiovascular risk (CVR). The objective of this study is to describe the correlation between CVR and changes in CIMT in patients with MASLD.

Materials and Patients: This observational, cross-sectional, analytical study was conducted at the Instituto de Investigaciones Médico-Biológicas liver clinic from January 2023 to April 2024. Patients who met the eligibility criteria provided informed consent and underwent the following procedures: transitional liver elastography (TE), carotid Doppler ultrasound (USG), somatometric measurements, and biochemical tests. Cardiovascular risk scores (Framingham, ASCVD, SCORE2) and FIB-4 were calculated. Participants were categorized into two groups based on carotid intima-media thickness, altered CIMT (>1.1 mm) and normal CIMT (<1.1

mm). A TE value >8 Kpa indicated a risk of advanced fibrosis. Numerical variables were reported as measures of central tendency and dispersion, while categorical variables were presented as frequencies and percentages. The Kolmogorov-Smirnov test assessed data distribution and the Levene test evaluated homoscedasticity. For group comparisons, Student's t-test or Wilcoxon test was used for numerical variables, and chi-square or Fisher's exact test for categorical variables. ROC curves were generated to analyze cardiovascular risk and atherosclerosis. Spearman's test was employed to evaluate correlations. Statistical analysis was conducted using SPSS version 26.

Results: This study included 51 patients: 17 (33.33%) with altered CIMT (age 58 [48-72], 58.8% women) and 34 (66.66%) without alterations (age 51.5 [30-68], 79.4% women). Pathological histories, elastography results, biochemical data, and CVR scores are summarized in Table 1. Patients with altered CIMT exhibited a higher age (58 [48-72] vs. 51.5 [30-68], p=0.005), higher LDL concentrations (133.93± 37.46 vs. 109.47±41.86 mg/dL, p=0.047), and elevated CVR scores: Framingham (5.8 [3.0-12.3] vs. 1.7 [0.57-5.05], p=0.037), ASCVD (8.4 [5.4-17.25] vs. 3.7 [1.95-10.2], p=0.047), and SCORE2 (8.1 [4.75-12.9] vs. 3.8 [1.7-6.85], p=0.012). Advanced fibrosis (>8 kPa) was more prevalent among patients with altered CIMT (55.6% vs. 21.4%, p=0.037) and was associated with higher CVR scores: ASCVD (15.7 [7.75-24.75] vs. 4.45 [1.97-9.67], p=0.001) and SCORE2 (11.3 [4.85-17.1] vs. 3.95 [2.3-8.12], p=0.004). Sub-analysis showed significant correlations of >8 kPa and high FIB-4 with SCORE2 (r=0.574, p=0.040) and (r=0.564, p=0.045), respectively. Patients with >8 kPa were more likely to have atherosclerosis (OR 4.58, 95% CI: 1.01-20.6, p=0.037) and altered CIMT (OR 4.2, 95% CI: 1.1-16.2, p=0.026). The area under the curve for detecting atherosclerosis was 0.768 (95% CI: 0.570-0.965, p=0.013) for ASCVD, 0.753 (95% CI: 0.552-0.953, p=0.019) for SCORE2, and 0.662 (95% CI: 0.457-0.867, p=0.133) for Framingham.

Conclusions: In our cohort, MASLD patients with >8 kPa exhibited a significant correlation with SCORE2 and an increased risk of atherosclerosis. These results highlight the importance of assessing cardiovascular risk and carotid alterations in patients with elevated liver stiffness (>8 kPa) and high cardiovascular risk scores.

Ethical statement: All patients have informed consent and personal data protection.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-pro-fit sectors.

Table 1
Characteristics of patients with MASLD according to alterations in carotid intima-media layer thickness.

Variable	Altered CIMT n=17	Normal CIMT n=34	p-value
Population Characteristic			
Age	58(48-72)	51.5(30-68)	**0.005**
Sex			0.12
Men	7 (41.2%)	7 (20.6%)	
Female	10 (58.8%)	27 (79.4%)	
BMI	32.6(29.75-37.21)	31 (27.87-36.82)	0.609
BMI Classification			0.57
Normal Weight		2 (5.9%)	
Overweight	4 (23.5%)	12 (35.3%)	
Obesity Grade 1	4 (23.5%)	10 (29.4%)	
Obesity Grade 2	7 (41.2%)	6 (17.6%)	
Obesity Grade 3	2 (11.8%)	4 (11.8%)	
Smoking	5 (29.4%)	7 (20.6%)	0.484
Type 2 Diabetes	2 (11.8%)	13(38.2%)	0.5
Arterial hypertension	6 (35.3%)	11 (32.4%)	0.834
Hypercholesterolemia	1 (5.9%)	9 (26.5%)	0.081
Hypertriglyceridemia	-	10 (29.4%)	**0.013**
Hepatic Elastography			
KPA	7.6±2.6	5.85±3.00	0.177
F0	6 (35.3%)	20 (58.8%)	0.234
F0-F1		3 (8.8%)	
F2	4 (23.5%)	4 (11.8%)	
F3	4 (23.5%)	4 (11.8%)	
F3-F4	3 (17.6%)	2 (5.9%)	
F4		1 (2.9%)	
Kpa> 8	7 (41.2%)	7 (20.6%)	0.12
CAP	301±33.24	295±33.39	0.263
S0		1 (2.9%)	0.719
S1	2 (11.8%)	7 (20.6%)	
S2	3 (17.6%)	4 (11.8%)	
S3	12 (70.6%)	22 (64.7%)	
Fibrosis Risk Scales			
FIB-4	1.08 (0.85-1.25)	0.88 (0.54-1.39)	0.691
Low risk	14 (82.4%)	23 (67.6%)	0.532
Medium risk	2 (11.8%)	8 (23.5%)	
High risk	1 (5.9%)	3 (8.8%)	
Carotideo USG Doppler			
Stenosis	4.38±12.37		0.568
Atherosclerosis	7 (41.2%)	2 (5.9%)	**0.002**
RIMT (mm)	1.1 (0.75-1.2)	0.8 (0.7-0.925)	**0.004**
Altered RIMT n(%)	10 (58.8%)		**<0.0001**
LIMT (mm)	1.25 (1.1-1.375)	0.8 (0.7-0.9)	**<0.0001**
Altered LIMT n(%)	14 (82.4%)		**<0.0001**
Biochemical Studies			
Leukocytes (thousands /μL)	6.81±1.24	6.87±1.4	0.894
Hemoglobin (g/dL)	13.57±1.12	13.4±1.87	0.724
Platelets (g/L)	284.24±83.53	268.59±42.75	0.473
BT (mg/dL)	0.45(0.32-0.73)	0.5(0.34-0.62)	0.509
AST (UI/L)	24 (17.5-32.8)	24.15(18.5-42.05)	0.715
ALT (UI/L)	26.3(16.15-44.25)	27.6 (14-57.25)	0.635
FA (UI/L)	111 (80.5-147)	96 (74-135.25)	0.682
GGT (UI/L)	42 (24- 74.5)	30 (20.25-91.75)	0.482
PT (g/dL)	7.6 (7.4-7.9)	7.45 (7.22-7.67)	0.333
Albumin (g/dL)	4.32±0.5	4.35±0.39	0.852
Cholesterol (mg/dL)	204.87±38.98	184.23±42.56	0.1
HDL (mg/dL)	47.66±7.76	45.08±9.79	0.347
LDL (mg/dL)	133.93±37.46	109.47±41.86	**0.047**
VLDL (mg/dL)	26.6(22-30.7)	30 (20-35.1)	0.811
Triglycerides (mg/dL)	140 (113.5-163.5)	151 (111.5-176.5)	0.788
Glucose (mg/dL)	109(99.5-118.55)	96 (90-107.25)	0.185
Creatinine (mg/dL)	0.75 (0.63-0.97)	0.71 (0.61-0.82)	0.455
CRP (mg/dL)	6.52(2.0-8.19	1.5 (0.4-3.8)	0.324
Insulin (mg/dl)	17.85(13.65-39.4)	17.2 (12.75-24.20)	0.433
HOMA	4.16(3.72-11.13)	4.22 (2.93-6.22)	0.407
Insulin resistance	9 (90%)	23 (92%)	0.849
Blood Pressure			
SBP	130 (122.0-137.5)	125 (113.25-131.0)	0.337
DBP	80 (70-85)	80 (71-86.5)	0.754
Cardiovascular Risk Scales			
Framingham	5.8 (3.0-12.3)	1.7 (0.57-5.05)	0.037
Low	8 (47.1%)	25 (73.5%)	0.186
Moderate	4 (23.5%)	6 (17.6%)	
Moderately high	3 (17.6%)	3 (8.8%)	
High	1 (5.9%)		
Very high	1 (5.9%)		
ASCVD	8.4 (5.4-17.25)	3.7 (1.95-10.2)	**0.047**
Low risk	3 (17.6%)	18 (52.9%)	**0.038**
Borderline	2 (11.8%)	3 (8.8%)	
Intermedium	9 (52.9%)	7 (20.6%)	
High	3 (17.6%)	2 (5.9%)	
SCORE 2	8.1(4.75-12.9)	3.8 (1.7-6.85)	**0.012**
Low	5 (29.4%)	19 (55.9%)	**0.045**
High	5 (29.4%)	7 (20.6%)	
Very high	7 (41.2%)	4 (11.8%)	

RIMT: Right Intima-Media Thickness, LIMT: Left Intima-Media Thickness, GGT: Gamma-Glutamyl Transferase, TB: Total Bilirubin, AST: Aspartate Aminotransferase, ALT: Alanine Aminotransferase, ALP: Alkaline Phosphatase, TP: Total Proteins, HDL: High-Density Lipoproteins, LDL: Low-Density Lipoproteins, VLDL: Very Low-Density Lipoproteins, CRP: C-Reactive Protein, HOMA: Homeostatic Model Assessment, SBP: Systolic Blood Pressure, DBP: Diastolic Blood Pressure

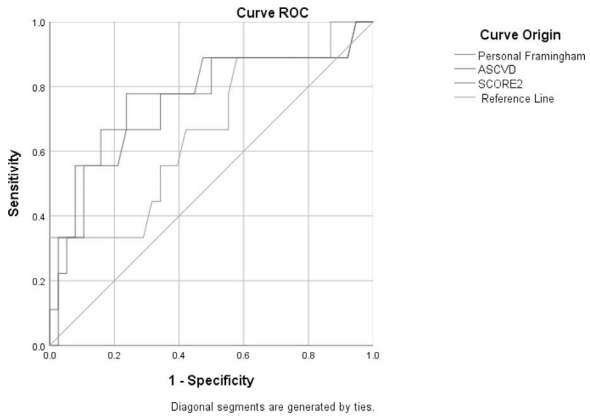


Figure 1. ROC curves of cardiovascular risk and atherosclerosis scales.

https://doi.org/10.1016/j.aohep.2025.101800

Atypical migratory reactive arthritis related to Hepatitis C Virus

Clara C. Sánchez-Rodríguez[1],
Ana M. Mendoza-Martínez[2],
Héctor R. Sánchez-Nuncio[3],
Jorge H. Luna-Domínguez[4]

[1] *Internal Medicine, Regional General Hospital 6, IMSS, Mexico*
[2] *Center of research excellence. Autonomous University of Tamaulipas, southern zone, Mexico*
[3] *Faculty of Medicine, Dr. Alberto Romo Caballero. Autonomous University of Tamaulipas, southern zone, Mexico*
[4] *Research Center. Faculty of Dentistry. Autonomous University of Tamaulipas, southern zone, Mexico*

Introduction and Objectives: Reactive arthritis (RA) occurs after bacterial infections and is sporadically associated with enterovirus and hepatitis B virus (HBV) and hepatitis C virus (HCV). Clinically, we observe the characteristic triad of arthritis, uveitis and urethritis or diarrhea. We present a patient with RA associated with HCV.

Materials and Patients: Fifty-three-year-old man with a history of cannabis use as a youth, suspended 15 years ago. He begins with conjunctival injection, ocular pruritus, increased conjunctival secretion with ocular foreign body sensation, dysuria, and foamy urine. After 24 hours, there was pain, redness, increased volume and significant limitation of the left glenohumeral joint. He received non-steroidal anti-inflammatory drugs (NSAID) with a poor response. Seventy-two hours later, he presented pain in the right coxofemoral joint and 48 hours later in the right knee with increased volume. heat and redness with expansion of the edema to the right lower extremity, highlighting the pain in the ankle, knee and hip joints, which is why he went to the emergency room with suspicion of thrombosis (Image 1).

Results: During his hospitalization, a Doppler ultrasound of the lower extremity was performed, ruling out venous thrombosis. The left knee was punctured, obtaining transparent liquid with characteristics of transudate, acellular without bacteria in the biochemical analysis. Serum analysis, general urine analysis, urine culture, VDRL, antibodies against human immunodeficiency virus (HIV), antibodies against hepatitis C virus (Ac vs. HCV), hepatitis B surface antigen (HBVAg) and acute phase reactants (Image 2). Active bacterial infection was excluded, and he received 0.9% saline solution and 150 mg intravenous methylprednisolone every 12 hours, with improvement of symptoms and resolution of uveitis. Active infection with HCV was detected and the patient was discharged with 14 more days on prednisone 10 mg every 24 hours. As an outpatient, he received sofosbuvir/velpatasvir for 12 weeks with sustained viral response at week 12 (SVR12).

Conclusions: HCV can induce systemic inflammatory conditions and simulate other infections, such as, in this case, those associated with sexually transmitted bacteria, so it is important to request the Ac vs HCV and, if they are reactive, verify viral replication to administer specific treatment with direct-acting antivirals.

Ethics statement: Informed consent was obtained for the dissemination of the case, and the identity of the patient was protected when the information was presented.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

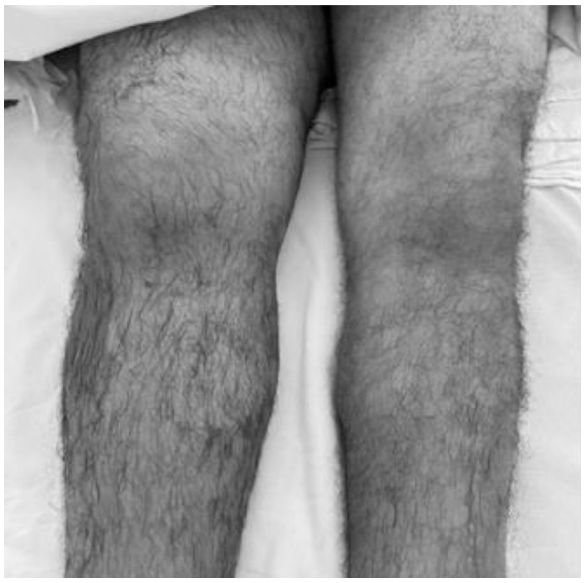


Figure 1. Knee arthritis and significant edema of the right lower extremity.

https://doi.org/10.1016/j.aohep.2025.101801

Chronic Kidney Disease and Hepatitis C virus.

Clara C. Sánchez-Rodríguez[1],
Oscar G. Galindo-Contreras[1],
Ana M. Mendoza-Martínez[2],
Héctor R. Sánchez-Nuncio[3],
Jorge H. Luna-Domínguez[4]

[1] *Internal Medicine, Regional General Hospital 6, IMSS, Mexico*
[2] *Center of research excellence. Autonomous University of Tamaulipas, southern zone, Mexico*
[3] *Faculty of Medicine, Dr. Alberto Romo Caballero. Autonomous University of Tamaulipas, southern zone, Mexico*
[4] *Research Center. Faculty of Dentistry. Autonomous University of Tamaulipas, southern zone, Mexico*

Introduction and Objectives: Hepatitis C virus (HCV) is an independent risk factor (RF) for chronic kidney disease (CKD) and for progression to end-stage renal disease (ESRD). The objective is to

analyze the known RFs for CKD and progression to ESRD in patients with HCV and those specific to this population.

Materials and Patients: A prospective cohort study was conducted to identify the RFs for kidney damage and progression to CKD in a cohort with chronically infected HCV. The known RFs were analyzed: age over 65 years, diabetes, essential hypertension as the main RFs, in addition to obesity and RFs related to HCV infection prevalent in this population, such as blood transfusion, sexual promiscuity, intravenous drug users (IVDU). CKD was determined when functional alterations of the kidney were found for more than 3 months. The estimation of glomerular filtration rate (eGFR) was performed with the renal function calculator of the Spanish Society of Nephrology that uses the corrected Cockcroft-Gault formula where <60 ml/min/1.73m2 is considered CKD. The normal range of eGFR is 90-100 mL/min/1.73m2, considering hyperfiltration above this. Diabetes and hypertension, transfusions, IVDU were self-reported by the patient for sexual promiscuity; the definition of the World Health Organization was considered, determining it when one has more than two sexual partners in less than 6 months; obesity was determined with the body mass index.

Results: Of 130 with chronic HCV infection, we found 51% were men with a mean age of 54 years. Among the known RFs, we identified age >65 in 21%, with diabetes at 26% and essential hypertension at 27%; among those associated with this population, 100% had chronic infection with HCV, a history of blood transfusion and blood products in 45%, IVDU in 25%, with obesity in 26%. About the different stages of CKD, we find 60% of the population in hyperfiltration ranges with an eGFR >100 mL/min/1.73m2. Hyperfiltration was associated first with obesity, in 70% of obese people, followed by 47 and 46% with diabetes and hypertension, respectively, in 32% with age >65 it is noteworthy that more than half of the patients with a history of transfusion in the IVDU, 59% and 54% had this finding. In addition, 21% of the total population evaluated was in stage 2 with an eGFR between 60-89 mL/min/1.73m2. Only 8% had an eGFR in normal ranges between 90-100 mL/min/1.73m2

Conclusions: HCV is recognized as an independent RF for the development and progression to CKD; the intentional search for known RFs in this population will help reduce the progression to ESKD. The finding in this study of hyperfiltration is a little-explored fact, which deserves further study.

Ethical statement: Approval was obtained from the ethics and research committee of our hospital.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101802

Effect of Alternate day fasting over Metabolic dysfunction-associated steatohepatitis in adult offspring of dams exposed to cafeteria diet during pregnancy and lactation.

Martín G. García-Juárez, Tania G. Heredia-Torres, Daniel Arellanos-Soto, Blanca E. Álvarez-Salas, Alberto Camacho-Morales, Ana María G. Rivas-Estilla

Department of Biochemistry and Molecular Medicine, Center for Research and Innovation in Medical Virology (CIIVIM), School of Medicine, Universidad Autónoma de Nuevo León (UANL), Monterrey, Nuevo León, Mexico

Introductions and Objectives: Metabolic dysfunction-associated steatohepatitis (MASH) is a liver disease characterized by lipid accumulation and inflammation that can be exacerbated by cafeteria diets (CAF) exposition during pregnancy and lactation, whereas Alternate day fasting (ADF) improves metabolic parameters. Evaluate the effect of ADF and CAF maternal programming on MASH-associated markers in the offspring.

Materials and Patients: To assess the effect of maternal programming, we elaborated a mice model using 8-week C57BL6 females exposed to a CAF (cafeteria) diet (39% carbs, 49% fats, 12% proteins and sodium 231.8 mg) during 3 weeks of mating, 3 weeks of gestation and 3 weeks of lactation. For maternal programming control, we fed females with a Chow or control diet (57% carbs, 13% fats, 30% proteins and sodium 105 mg) during 3 weeks of mating, 3 weeks of gestation and 3 weeks of lactation. After weaning, the offspring were fed a control diet until they were 8 weeks old. They were then divided into four groups (Control n=8, Control + ADF n=8, CAF n=8, CAF+ ADF n=8) and an alternate day Fasting (ADF) protocol was initiated for 5 weeks. At the end of the fasting protocol, plasma samples were taken and beta-hydroxybutyrate (BHB) concentration was measured; in addition, samples of the left lateral lobe of the liver were taken at slaughter to evaluate by qPCR the effect of intermittent fasting on the expression of metabolic function markers involved during MASH: fibrosis (TGFβ, Col1a1), steatosis (PLIN2, ApoB100, Mylcd, PPARPα) and inflammation (Mcp-1).

Results: Groups treated with ADF showed an increase in plasma BHB concentration of 400 μmol compared to non-fasted groups. However, no significant difference was found between the control +ADF and CAF + ADF groups, so no effect of maternal programming with CAF diet on BHB production was observed. Additionally, the relative expression of mRNA from fibrosis-associated markers such as Col1a1 showed an 84% decrease in the CAF maternal programming model, 80% in the Control + ADF group and 88% in the CAF + ADF model with respect to control. Levels of mRNA-Plin2, involved in lipid droplet formation, decreased by 57% in the CAF group, 48% in Control +ADF and 79% in CAF+ADF. On the other hand, mRNA-Mcp-1 levels (chemokine) showed a decrease of 14.36% in CAF, 46.42% in Control + ADF and 62.68% in CAF+ ADF with respect to control.

Conclusions: The model of alternate-day fasting (ADF) showed an increased plasma BHB, but we did not observe a maternal programming effect on the concentration of betahydroxybutyrate. Interestingly, maternal programming and ADF reduce the expression of MASH-associated markers involved in fibrosis, lipid droplet formation and inflammation in this mouse model.

Ethical statements: This project was authorized by the ethics committee of the Universidad Autónoma de Nuevo León with the registration number B120-00,004.

Declaration of interest: None.

Funding: This work was supported by the National Council of humanities, Science and Technology in Mexico (CONACHYT) for Martín García-Juarez, (Grant number: 631654).

https://doi.org/10.1016/j.aohep.2025.101803

Impact on survival of decompensated liver cirrhosis and large volume paracentesis: a retrospective cohort

Karla P. Perez-Lopez, Miriam G. Reyes-Zermeño

Gastroenterology Service, National Medical Center 20 de Noviembre, ISSSTE, Mexico

Introduction and Objectives: Ascites is the most common complication of cirrhosis. Its presence represents a 40% mortality at 2 years. The objective of this study was to determine survival in patients with decompensated liver cirrhosis due to ascites undergoing large-volume paracentesis.

Materials and Patients: A retrospective, cross-sectional, observational, analytical study was conducted. Patients with liver cirrhosis

over 18 years of age of both sexes, of any etiology, treated at Centro Médico Nacional 20 de Noviembre between January 2013 and June 2023, who underwent large volume paracentesis, were selected and matched 2:1 with controls who did not require high volume paracentesis, adjusted for disease severity, age, sex, and Child-Pugh stage. Exclusion criteria were pregnancy or lactation, under 18 years of age, and ascites of a different origin than chronic liver disease. The data was extracted from clinical records.

Results: A total of 226 patients were analyzed, 61.9% women (n=140) and 38.1% men (n=86). The average age was 64.28 years (SD=13.33). The minimum age was 19 years and maximum was 91 years. The most frequent etiology was hepatic steatosis in 34.07% (n=77), followed by hepatitis C in 19.91% (n=45), alcoholism in 12.38% (n=28), autoimmune hepatitis in 10.17% (n=23). The distribution of patients by Child-Pugh classification was B in 69% (n=156) and C in 31% (n=70). The average MELD-NA score was 16.93 (SD=7.10). The main comorbidities were 36.7% (n=83) type 2 diabetes mellitus, 24.8% (n=56) systemic arterial hypertension, 15% (n=34) chronic kidney disease, and 16.4% (n=37) obesity.

Out the 226 patients with liver cirrhosis with ascites, 33.2% (n=75) underwent large volume paracentesis while 66.8% (n=151) underwent paracentesis less than 5 liters. The mortality of patients undergoing large volume paracentesis was 32% compared to 20.5% RR 1.55, IC 95% (0.98-2.45) of patients who did not. In bivariate analysis by sex, there were no statistically significant differences in mortality. Stratified analysis by nutritional status with body mass index did not show differences in mortality in patients undergoing large volume paracentesis.

Conclusions: No statistically significant differences in mortality were observed between patients undergoing large volume paracentesis and those who did not. It is important to consider that factors other than paracentesis volume may influence patient survival.

Ethical statement: This study adheres to ethical principles in clinical research involving human subjects and presents no risk to the population under investigation as only information obtained from clinical records will be evaluated.

Declaration of interests: None.

Funding: All human and material resources were provided by Centro Médico Nacional 20 de Noviembre, ISSSTE.

Table 1
Demographic Characteristics

	LARGE VOLUME PARACENTESIS (n = 75)	NO LARGE VOLUME PARACENTESIS (n = 151)	P VALUE
AGE, MEAN	63.15	64.85	0.35
FEMALE (%)	41 (54.66)	99 (65.56)	0.11
MALE (%)	34 (45.33)	52 (33.77)	0.11
CHILD-PUGH (%)			
B	44 (58.66)	112 (74.17)	0.01
C	31 (41.33)	39 (25.82)	
MELD-NA, MEAN	19.92	15.45	0.00
HEPATOPATHY ETIOLOGY			
HEPATIC STEATOSIS (%)	24 (32)	53 (35.09)	0.04
HEPATITIS C INFECTION (%)	9 (12)	36 (23.84)	0.04
ALCOHOL (%)	11 (14.66)	17 (11.25)	0.04
HEPATITIS B INFECTION (%)	0 (0)	2 (1.32)	0.04
AUTOIMMUNE HEPATITIS (%)	9 (12)	14 (9.27)	0.04
CBP (%)	6 (8)	15 (9.93)	0.04
CEP (%)	0 (0)	2 (1.32)	0.04
IDIOPATHIC (%)	11 (14.66)	10 (6.62)	0.04
OVERLAP HAI AND CBP (%)	5 (6.66)	1 (0.66)	0.04
OVERLAP CBP AND CEP (%)	0 (0)	1 (0.66)	0.04

CBP: Chronic Biliary Pancreatitis, CEP: Chronic Extrahepatic Pancreatitis, HAI: Hepatic Acute Inflammation, MELD-Na: Model for End-Stage Liver Disease with Sodium.

https://doi.org/10.1016/j.aohep.2025.101804

HGF decreases ANIT-induced liver damage through modulation of redox status.

Maricruz García-Barrera[1,2,3], Genaro J. Rosales-Muñoz[1,2,3], Alejandro Escobedo-Calvario[1,2,3], Roberto C. Lazzarini-Lechuga[6], Natalia Nuño-Lámbarri[4,5], Luis E. Gómez-Quiroz[2,3], Leticia Bucio-Ortiz[2,3]

[1] *Graduate Program in Experimental Biology, DCBS, Universidad Autónoma Metropolitana Unidad-Iztapalapa, Mexico*
[2] *Area of Experimental and Translational Medicine, Department of Health Sciences, Universidad Autónoma Metropolitana-Iztapalapa, Mexico*
[3] *Laboratory of Experimental Medicine, Translational Medicine Unit, IIB/UNAM, National Institute of Cardiology Ignacio Chávez, Mexico*
[4] *Translational Research Unit, Medica Sur Clinic & Foundation, Mexico*
[5] *Department of Surgery, Faculty of Medicine, Universidad Nacional Autónoma de México (UNAM), Mexico*
[6] *Department of Reproductive Biology, Universidad Autónoma Metropolitana, Mexico*

Introduction and Objectives: Intrahepatic cholestasis is the partial/total obstruction of bile flow, with inflammation and increased reactive oxygen species (ROS). Previous studies indicate that hepatocyte growth factor (HGF) generates hepatoprotective effects in alpha-naphthylisothiocyanate (ANIT)-induced cholestasis. We focused on characterizing the mechanisms of HGF-induced protection in cholestasis.

Materials and Methods: Male CD1 mice aged 8-10 weeks were randomly divided into 4 experimental groups: 1) untreated control group (NT), 2) ANIT-treated group via intragastric administration at a dose of 60 mg/kg, 3) ANIT+HGF-treated group, where HGF will be administered at a dose of 10 μg/kg intravenously 24 hours after ANIT administration, and 4) control group treated only with HGF. Mice were sacrificed at 30 h, 36 h, and 48 h post-treatment initiation for liver tissue and serum collection. The collected samples were used for biochemical assays, Western Blot, TBARS, and H&E staining.

Results: The histological results suggest that HGF can reverse the cholestatic damage observed in time-independent H&E stains, which impacts the architecture of the liver parenchyma, through the decrease in inflammatory infiltrate corroborated with the reversal of the size of the sinusoid area. It was also observed that pyknotic nuclei decrease, which suggests a decrease in cell death as well as an increase in proliferation. These results at the cellular level also impact the decrease in markers of damage at the serum level, such as transaminases, and the decrease in liver size to normal levels. It was also observed that HGF modulates the production of ROS through decreased lipoperoxidation over time, which may be one of the main causes of its hepatoprotective effect in experimental cholestasis. That is why we evaluated the effect of N-acelticistein (NAC) as a therapeutic proposal for cholestasis. The proteomic results indicated that NAC increases the protein content of the glutathione system to decrease damage.

Conclusions: HGF regulates a hepatoprotective response by modulating ROS, which favors the reduction of tissue damage reduction and the antioxidant response through the glutathione system. On the other hand, NAC could be suggested as a therapeutic option in cholestatic disease.

Ethics statement: The care and management of the experimental subjects were carried out following the ethical guidelines established by the Universidad Autónoma Metropolitana (UAM) and the National

Institutes of Health of the United States (NIH) and in accordance with the Official Mexican Standard (NOM-062 -ZOO-1999).

Declaration of interests: None.

Funding: This work was partially funded by a grant from the National Council of Science and Technology (CONACYT): CB-A1-S-38154, CB-252942, Infra-2017 280788, and Universidad Autónoma Metropolitana-Iztapalapa (UAM-I).

https://doi.org/10.1016/j.aohep.2025.101805

Simplification of the diagnostic approach and treatment of Hepatitis C Virus.

Clara C. Sanchez-Rodriguez[1],
Ana M. Mendoza-Martínez[2],
Héctor R. Sánchez-Nuncio[3],
Jorge H. Luna-Domínguez[4]

[1] *Internal Medicine, Regional General Hospital 6, IMSS, Mexico*
[2] *Center of research excellence. Autonomous University of Tamaulipas, southern zone, Mexico*
[3] *Faculty of Medicine, Dr. Alberto Romo Caballero. Autonomous University of Tamaulipas, southern zone, Mexico*
[4] *Research Center. Faculty of Dentistry. Autonomous University of Tamaulipas, southern zone, Mexico*

Introduction and Objectives: Twenty-five years after the discovery of the hepatitis C virus (HCV), it is the chronic infection with the greatest impact on diagnosis and treatment. The objective of this study is to describe the simplification of HCV management for a cohort of 270 patients evaluated from 2018 to 2023.

Materials and Patients: A prospective cohort study was carried out to evaluate patients with HCV (Ac vs HCV +). In 2018 we had direct-acting antivirals (DAA) to treat HCV genotype 1; in addition to the HCV viral load (HCV RT-PCR), we required the viral genotype and liver elastography, 2019 we already had pan-fibrotic pangenotypic schemes, so genotype and liver elastography were excluded; however, due to the capacity of HCV to infect lymphocytes, screening prior to treatment with DAAs for diabetes, kidney disease, thyroid disease, rheumatic musculoskeletal disease, and associated proliferative disorders continues to be necessary. To B lymphocytes and in patients with cirrhosis determination of alpha fetoprotein (AFP) and liver ultrasound. In the clinical presence of cutaneous purpura, determination of cryoglobulins, rheumatoid factor and complement fractions, in addition to excluding coinfections with the Hepatitis B Virus and the human immunodeficiency virus. In the initial assessment, the risk factors for HCV were obtained by questioning. Patients who received treatment were evaluated every month during the months of treatment and the sustained viral response 12 weeks after completing treatment (SVR12) and every 6 months thereafter.

Results: 269 patients with chronic HCV infection were included, sent from 11 first-level medical units and 3 second-level hospitals in Northeast Mexico. 53% were women with an average age of 54 years. The main risk factor identified was blood transfusion followed by intravenous drug use (IVDU). 28% had previous treatment with pegylated interferon and ribavirin. 30% had compensated cirrhosis. Fibrosis was calculated using the APRI algorithm, finding 53/130 with >1.5 and 60/130 with >3.25, which predicted F3-4. Liver elastography was performed in 55/130 patients, with 37 at F3-4. Among the diseases possibly related to chronic HCV infection we found 29 diabetes, 21 hypothyroidism, 9 cutaneous vasculitis with cryoglobulins, 1 diffuse large cell non-Hodgkin lymphoma, 1 monoclonal gammopathy of uncertain origin, 1 chronic lymphocytic leukemia and 3 cases of hepatocellular carcinoma., a patient with HCV relapse in a transplanted liver. Of these, 155 (58%) presented positive HCV RT-PCR with genotype 1 in 80% of the patients. 130 (84%) received treatment, the most used regimens were those based on sofosbuvir with SVR12 in 97% (Table 1).

Conclusions: The diagnostic approach and treatment of chronic HCV infection has been simplified with the rapid test for detection and mainly due to the safety of the new treatments, DAAs, since these have proven to be safe and highly effective in the heterogeneous population that suffers from this infection.

Ethical statement: Approval was obtained from the ethics and research committee of our hospital.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1
Baseline characteristics of patients included

N=269	
Males/Females %Ages, years, mean, (range)	128/141 (48/52) 54 (15-85)
Risk Factors, n (%)	
Transfusion of blood and derivatives	58 (45)
IVDU	33 (25)
Promiscuity	15 (11.5)
Punctures, contaminated surgical material	4 (3)
Tattoos	3 (2.5)
Unidentified	17 (13)
Viral Factors	
Positive Viral load	155
Negative viral load	114
Genotype n (%)	122 (79)
1	98*(80)
1a	58
1b	33
2	16 (13)
3	8 (6.5)
4	1
Others	Two coinfections: 1a + 2, 1a + 3
Stage of liver disease, n (%)	
APRI/ FIB-4 F0-1	80 (61.5)
APRI/ FIB4 F3-4	50 (38.5)
Child Turcotte Pugh A	118 (91)
Child Turcotte Pugh B	9 (7)
Child Turcotte Pugh C	3 (2)
HCV Syndrome, n (%)	
Diabetes	29 (22)
Hyphotiroidism	21 (17)
Cutaneous vasculitis	9 (7)
Other proliferative disorders	3 (2)
Liver carcinoma	3 (2)
Comorbidities n (%)	
Obesity	34 (26)
Hypertension	32 (25)
Coinfection with HIV	10 (8)
Previous therapy n (%)	
Naïve	94 (72)
Experienced	36 (28)
DAA Regimens, n (%)	
Sofosbuvir/Ledipasvir, 12 weeks	9 (7)
Sofosbuvir/Ledipasvir + ribavirin, 12 weeks	1 (0.7)
Ombitasvir, dasabuvir, paritaprevir + ritonavir, 12 weeks	9 (7)
Ombitasvir, dasabuvir, paritaprevir + ritonavir + ribavirin, 12 weeks	4 (3)
Sofosbuvir/Velpatasvir, 12 weeks	91 (70)
Sofosbuvir/Velpatasvir + ribavirin 12 weeks	2 (1.5)
Glecaprevir/Pibrentasvir 8-12 weeks	14 (11)
Virological response (%)	
RVS12	97

APRI: Aspartate Aminotransferase to Platelet Ratio Index, FIB-4: Fibrosis-4 Index, HCV: Hepatitis C Virus, DAA: Direct-Acting Antiviral, RVS12: Sustained Virological Response at 12 weeks, IVDU: Intravenous Drug Use.

https://doi.org/10.1016/j.aohep.2025.101806

Correlation between Connective Tissue Growth Factor and the degree of fibrosis in patients with cholestasis.

Cristian Y. Sánchez-Sánchez[1],
Diego F. Abendaño-Rivera[1],
Viridiana López-Ladrón de Guevara[1],
María A. Diaz-Castro[1], Fátima Higuera-De La Tijera[1],
Carolina Guzmán-Arriaga[2],
Ángel D. Santana-Vargas[3], José L. Pérez-Hernández[1]

[1] *Department of Gastroenterology and Hepatology General Hospital of Mexico "Dr. Eduardo Liceaga," Mexico City, Mexico*
[2] *Liver, Pancreas, and Motility Laboratory, Experimental Medicine Unit General Hospital of Mexico "Dr. Eduardo Liceaga," Mexico City, Mexico*
[3] *Research Department General Hospital of Mexico "Dr. Eduardo Liceaga," Mexico City, Mexico*

Introduction and Objectives: The Connective Tissue Growth Factor (CTGF) is a multifunctional protein recognized as an important mediator in fibrogenic pathways in liver diseases. We aimed to establish the correlation between serum CTGF levels using Enzyme-Linked ImmunoSorbent Assay (ELISA) and the degree of hepatic fibrosis measured by transient elastography in patients with cholestasis diagnosed with Primary Biliary Cholangitis (PBC).

Materials and Patients: Prospective, analytical, experimental study. Three groups were recruited: the first group comprised patients with cholestasis, the second group comprised patients with cirrhosis due to Hepatitis C Virus (HCV), and the third group comprised healthy subjects. Anthropometric and biochemical data were collected. A blood sample was collected to quantify serum levels of CTGF using ELISA. The degree of fibrosis was determined by transient elastography. Statistical analysis: Data are presented as Mean±SD or Median (IQR 25-75). They were analyzed by one-way ANOVA with Tukey's post-hoc test or Kruskal-Wallis with Dunn's post-hoc test. The following parameters were calculated: Sensitivity (S), Specificity (E), Positive Predictive Values (PPV), Negative Predictive Values (NPV), and the area under the ROC curve (AUROC). A p-value <0.05 was considered significant.

Results: Thirty patients with cholestasis diagnosed with PBC were included, along with a group of subjects with cirrhosis due to Hepatitis C Virus (VHC-F4, n=6), and a control group without liver disease (C, n=17). It was observed that there is a positive correlation between CTGF levels and the degree of fibrosis in patients with cholestasis (PBC), but not in patients with cirrhosis due to HCV. Using a cutoff point of 630 pg/mL, a sensitivity (S) of 0.93, specificity (E) of 0.91, positive predictive value (PPV) of 0.93, negative predictive value (NPV) of 0.91, and an area under the ROC curve (AUROC) of 0.97 with a Youden index of 0.85 were obtained (Figure 1). With a serum CTGF value of 520 pg/mL in patients with PBC without fibrosis or with moderate fibrosis compared to controls and HCV-F4, a sensitivity (S) of 0.75, specificity (E) of 0.87, and AUROC of 0.88 for F0, and a sensitivity (S) of 0.91, specificity (E) of 0.87, and AUROC of 0.94 for F2 were identified (Figure 1). Regarding the degree of fibrosis, CTGF was significantly higher in F4 compared to F0 in patients with PBC. In the case of the VHC-F4 group, there were no differences compared to the group without liver disease, suggesting a specificity of CTGF for fibrosis due to cholestatic disease (Figure 2).

Conclusions: There is a direct correlation between serum levels of CTGF in patients with cholestasis and the degrees of fibrosis measured by transient elastography, as well as specific cutoff points for discrimination with and without fibrosis for PBC.

Ethical statement: This protocol was approved by the Research Ethics Committee of the General Hospital of Mexico " Dr. Eduardo Liceaga" Mexico City, Mexico (CEI-HGM) with the number (DI/12/UME/05/21).

Declaration of interests: None.

Funding: This work was partially funded by CONACYT (CB-221137).

Figure 1.

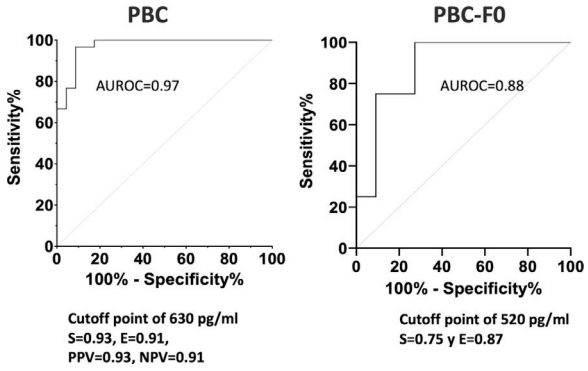
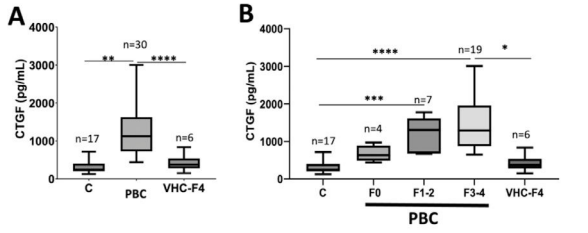


Figure 2.



Median (RIC). Kruskal-Wallis con post-hoc de Dunn. *p<0.05, **p<0.01, ***p<0.005, ****p<0.001

https://doi.org/10.1016/j.aohep.2025.101807

Evaluation of the effect of HCV Core protein on the epithelial-mesenchymal transition (EMT) process in non-tumorigenic immortalized hepatocytes

Verónica Alvarado-Martínez,
Tania G. Heredia-Torres, Sonia A. Lozano-Sepúlveda,
Ana M. Rivas-Estilla

Center for Research and Innovation in Medical Virology. Department of Biochemistry and Molecular Medicine. Faculty of Medicine. UANL. Mexico

Introduction and Objectives: The HCV Core protein is involved in metabolic remodeling and, energy reprogramming through enzymatic changes and redistribution of energy resources, promoting epithelial-mesenchymal transition (EMT) and liver disease. This study addressed the metabolic changes involved in EMT by evaluating the expression of Vimentin and E-cadherin in a non-cancerous cell model.

Materials and Patients: An expression plasmid for the HCV Core protein genotype 1b (p-Core) was designed. Transient transfection was performed in the THLE-2 cell line, characterized by a morphology similar to non-tumorigenic human hepatocytes and the expression of differentiated hepatocyte markers, making it ideal for metabolic assays due to its ability to express and regulate proteins involved in metabolism more effectively than primary hepatocyte cultures. For the transfection, p-Core concentrations of 0.5 - 2.0 μg were used, and the cells were cultured for 72 hours. Subsequently, total proteins were extracted and quantified using PKR buffer. The expression levels of Core, Vimentin, and E-cadherin proteins were evaluated by Western Blot, using 40 μg of protein. The relative expression of the

proteins was calculated in relation to the endogenous expression of GAPDH using ImageJ software, and the analysis was performed in triplicate.

Results: The expression of the viral Core protein (21 kDa) was detected in THLE-2 cells transfected with the p-Core plasmid at 72 hours. It was observed that the expression of the E-cadherin protein (120 kDa) decreased by 80% (in cells transfected with 0.5 μg) and by 25% in cells transfected with 2.0 μg of p-Core. Lastly, an increase in the expression levels of the Vimentin protein (57 kDa) was observed in relation to the concentration of p-Core, doubling with 0.5 μg and increasing sixfold with 2.0 μg of p-Core.

Conclusions: The expression of the viral Core protein modulates the translational expression levels of E-cadherin and Vimentin in THLE-2 cells, suggesting its possible involvement in cell adhesion, mobility, and metabolism by HCV. However, detailed studies of the implicated metabolic pathways are required to establish the activation pathways involved.

Ethical statement: This work is original and has not been previously published.

Declaration of interests: None.

Funding: The resources used in this study were funded by the Center for Research and Innovation in Medical Virology of the Faculty of Medicine at UANL without additional funding

https://doi.org/10.1016/j.aohep.2025.101808

Degrees of Liver Stiffness and Steatosis as Predictors of Preeclampsia Complications

Andrés T. Flores-y-Flores[1],
Orestes de J. Cobos-Quevedo[2],
José L. Perez-Hernández[2], Jesús C. Briones-Garduño[3],
Daniel Santana-Vargas[4]

[1] *Obstetrics and Gynecology, High Specialty South Central Hospital, Mexico*
[2] *Division of Hepatology, General Hospital of Mexico, Mexico*
[3] *Obstetrics and Gynecology Department, General Hospital of Mexico, Mexico*
[4] *Research Department, General Hospital of Mexico, Mexico*

Introduction and Objectives: Liver damage in preeclampsia is caused by antiangiogenic factors such as soluble tyrosine kinase, placental growth factor, and soluble endoglin. These induce endothelial injury and fibrin deposits in the hepatic microcirculation, thus modifying the physical characteristics of the liver parenchyma and its stiffness. This study aims to evaluate the correlation between the degree of liver stiffness and the severity of patients with preeclampsia.

Materials and Patients: An observational, analytical, cross-sectional, and prospective study. Pregnant women from week 20 of gestation were included, and divided into 3 groups: normal pregnancy, pre-eclampsia, and pre-eclampsia with severity features; They were recruited from February 2023 to August 2023 in Mexicoś City General Hospital, Obstetrics department. Transient elastography was performed on all of them. Pregnant women with chronic systemic arterial hypertension and pre-existing liver diseases were excluded. Descriptive statistics measures of central tendency were performed, and univariate analysis was carried out considering kilopascals (kPa) as a dependent univariable and the group (without preeclampsia, preeclampsia, and preeclampsia with severity criteria) as fixed factors and BMI as a covariate.

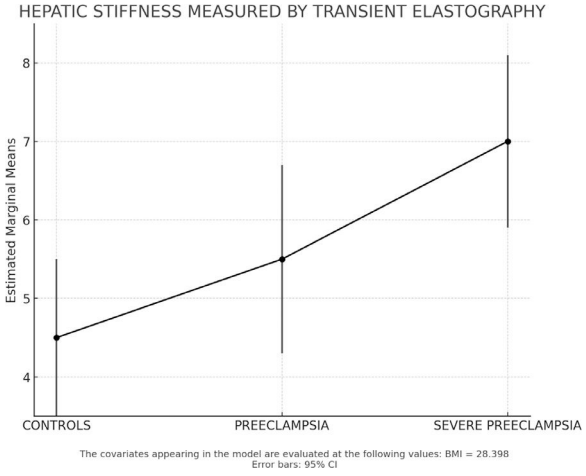
Results: 34 patients were included, 9 in the control group, 12 in the preeclampsia group and 13 in the preeclampsia with severity features group. The mean gestational age was 32 $\pm$ 5.8 weeks. The mean age was 27.26 $\pm$ 7.73 years. The mean BMI was 28.88 $\pm$ 4.83. The mean kPa in the control group was 4.35 $\pm$ 0.98, in the preeclampsia without severity features group 5.05 $\pm$ 0.87, and in the preeclampsia with severity features group 6.67 $\pm$ 1.84. The mean control group CAP was 202.82 $\pm$ 21.26 db/m2, in the preeclampsia without severity features group was 227.81 $\pm$ 47.81 db/m2, and in the preeclampsia with severity features group was 215.28 $\pm$ 37.41 db/m2. Univariate contrasts were significant for preeclampsia with severity criteria features versus preeclampsia F (2 of 23) = 7.679, p = 0.011. Preeclampsia with severity features versus control F (2 of 22) = 11.134, p = 0.003

Conclusions: Liver stiffness significantly increases in patients with preeclampsia and preeclampsia with severity features measured by transient elastography. This increase is due to intrahepatic fibrin deposition, but not by fibrosis (collagen) itself. Transient elastography could be useful as a predictor of severity in patients with preeclampsia.

Ethical statement: Study approved by the research ethics committee of the General Hospital of Mexico registration key DI/23/310-E/03/37.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.



https://doi.org/10.1016/j.aohep.2025.101809

Portal cholangiopathy secondary to cavernomatous transformation of the portal vein. Case report

Karla J. Arroyo García, Luis A. Esquivel-Pacheco,
Alexis V. Hinostroza-Pezo, Adolfo Gamiño-Morfín,
Alejandro D. Mendoza-Rea, Luis R. Alvarez-Martín,
Carlos A. Galvan-Castro

Internal medicine / Gastroenterology department, High Specialty Regional Hospital, Yucatan, Mexico

Introduction and Objectives: Portal cholangitis is a set of alterations that appear in the bile duct secondary to portal hypertension (PH). It is extremely rare and its main etiology is cavernomatous transformation of the portal vein (CPVT). The objective is to present the case of a patient with portal cholangiopathy secondary to TCVP.

Materials and Patients: A 17-year-old man with no relevant history began with hemorrhoidal bleeding, requiring hemorrhoidectomy. After 3 weeks, he presented abdominal pain and constipation. Abdominal computed tomography revealed free abdominal fluid, splenomegaly, and portal dilation. A diagnostic paracentesis was performed with GASA 3.1 and liver Doppler ultrasound with a 9mm portal vein, collateral veins, thrombosis and portal cavernomatosis.

Initial endoscopy showed small esophageal varices. Hepatotropic infections, HIV and thrombophilias were ruled out, concluding prehepatic PH secondary to TCVP and Child-Pugh A chronic liver disease (CLD).

At 3 years of follow-up, jaundice, generalized pruritus, direct hyperbilirubinemia asadded, with CA 19.9, normal IgG, negative ANA and AMA, and cholangio resonance with stenosis of the common bile duct and dilation of the intrahepatic and extrahepatic bile ducts.

In 2023, at 24 years of age, he had advanced decompensated CLD secondary to probable portal cholangiopathy due to TCVP, with persistent ascites, large esophageal varices, encephalopathy and recurrent cholangitis, so it was decided to place percutaneous drainage with biochemical improvement but presenting new episode of severe acute cholangitis associated with septic shock and acute-on-chronic liver failure, with a torpid evolution despite management with meropenem and ceftriaxone.

Results: TCVP is characterized by the formation of dilated collateral venous pathways in the portal vein, secondary to portal thrombosis, causing PH. A rare complication of both is portal cholangiopathy.

In the clinical case presented, what is notable is the patient's evolution characterized by cholestasis and CLD secondary to cavernomatosis due to portal thrombosis of unknown cause with progression of complications derived from portal hypertension. As part of the approach, hepatic infectious and hepatic autoimmune processes are ruled out and CA 19.9 is requested to assess the risk of cholangiocarcinoma. Subsequently, a magnetic resonance cholangiography was performed which showed a stenosis of the common bile duct.

Therefore, a portal cholangiopathy was considered due to the history of TCVP and the clinical, biochemical and imaging data that supported the diagnosis despite its low frequency. There are various theories about PH and its involvement of the bile duct, but it is considered to be due to compression of the bile duct walls secondary to the cavernoma, dilation of the venous plexuses of the common bile duct and ischemia, the latter being the reason for the failure. of bile duct diversion in some patients, as in this case presented.

Conclusions: Portal cholangiopathy should be considered in patients with cholestasis and portal hypertension; its origin should also be investigated in order to provide timely management that reduces the risk of complications and disease progression.

Ethical statement: Under bioethical principles of beneficence, non-maleficence, justice and autonomy, consent is provided to a legal representative, who voluntarily and informedly accepts the use of their information without publication of personal data, certifying by all authors their participation in the development of this project. holding us responsible for its content and declaring it to be true, not duplicated, without fraud or fabrication.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101810

Autoimmune hepatitis with overlap of primary biliary cirrhosis as the cause of esophageal varices in a geriatric patient, case report.

Martha A. López-Hernández[1], José A. Novoa-Búrquez[1], Vanessa Camacho-García[1], Alma E. Enríquez-Valeriano[1], Francisco A. Félix-Téllez[2], Juan M. Díaz-Castillón[1], Daniela G. Fausto-Murillo[1], Margarita Ortiz[3], Santos González-Luna[3], Diego A. Zúñiga-Tamayo[3], Héctor I. Cruz-Neri[1]

[1] *Geriatrics department, Guadalajara Civil Hospital Fray Antonio Alcalde, Mexico*
[2] *Gastroenterology department, Guadalajara Civil Hospital Fray Antonio Alcalde, Mexico*
[3] *Anatomical Pathology, Guadalajara Civil Hospital Fray Antonio Alcalde, Mexico*

Introduction and Objectives: A case is presented of an elderly female patient, without risk factors or comorbidities, who debuts with apparent gastrointestinal bleeding, leading to a diagnosis of autoimmune pathology. The aim is to highlight the importance of a comprehensive approach to pathologies in functional geriatric patients.

Patients and Methods: A female patient in the seventh decade of life, housewife, with reference to unspecified leukemia in hereditary family history. Denies having tattoos. In her past medical history, the only notable are a cholecystectomy performed 25 years ago without complications and a right breast cyst resection done 30 years ago with histopathological study negative for malignancy. Denies alcohol consumption, denies history of blood transfusion, and no use of non-steroidal anti-inflammatory drugs. With cervico-vaginal cytology performed 4 months ago with a normal report. Functional and independent for activities of daily living, with depressive disorder associated with recent unresolved grief, unestimated weight loss in the last 2 years.

She attends a geriatric outpatient consultation due to sporadic episodes of evacuations with melenic characteristics starting 3 months ago, with the last episode occurring 3 weeks prior. Denies episodes of epistaxis, gingival bleeding, abnormal uterine bleeding, petechiae, or bruises; denies night sweats or fever; presents to medical evaluation with evidence of unspecified-grade anemia; iron and folic acid oral supplementation is initiated. In our service consultation, hemoglobin is reported as 5 g/dl, leading to the decision for admission for further management.

Results: Endoscopy was performed with a report of upper esophageal varices descending to the distal third. Management continues with a joint approach with the Gastroenterology service. Serologies for hepatitis C and B viruses are negative, liver function tests show a cholestatic pattern, and a CT scan reveals reactive changes in the liver as well as splenomegaly. Due to the absence of risk factors, a comprehensive approach for autoimmune hepatitis is initiated, with positive antinuclear and anti-mitochondrial antibodies at a titer of 1:3200, IgG 4734, IgM 887, and anti-SP100 224. Hepatic Doppler ultrasound with elastography shows moderate fibrosis (Metavir score 3). Liver biopsy reports portal lymphoplasmacytic hepatitis with damage to the limiting plate, ductular proliferation, intense lobular damage (binucleation, ballooning, and hepatocyte degeneration), and portal fibrosis (F1). Based on this, a diagnosis of autoimmune hepatitis with overlap of primary biliary cholangitis is made, and targeted management is initiated.

Conclusions: Emphasizing the importance of continuing to address pathologies in patients regardless of age group and in an interdisciplinary manner is crucial. In our study population, functionality in basic and instrumental activities of daily living plays a significant role.

Ethical statement: All authors listed declare their participation in the process of describing the clinical case. This summary has not been previously accepted for digital or print publication. Additionally, informed consent with the patient's authorization for the publication of personal information for scientific and academic purposes has been obtained.

Declaration of interests: I declare that I was not subject to any direct influence from any manufacturer, merchant, or corporate entity during the completion of this project.

Funding: Without public or private funding.

https://doi.org/10.1016/j.aohep.2025.101811

Prevalence of polypharmacy in patients with a diagnosis of liver cirrhosis treated in the Gastroenterology service of the La Raza National Medical Center

Martín Rivera-Huizar[1], Javier I. Carrillo-Rojas[1], Francisca Martinez-Silva[1]

[1] *Gastroenterology, Specialty Hospital, La Raza National Medical Center, Mexico*

Introduction and Objectives: The need for multiple drugs to treat the complications associated with liver cirrhosis, as well as its comorbidities, places patients with chronic liver disease at high risk of polypharmacy with the possible use of unnecessary drugs and drug interactions. We propose to evaluate the prevalence of polypharmacy in patients with liver cirrhosis in our unit.

Materials and Patients: In a descriptive, observational, retrospective study with the aim of evaluating men and women with a diagnosis of liver cirrhosis in follow-up by the gastroenterology service of the Hospital de Especialidades del CMN la Raza in the year 2023.

The prevalence of polypharmacy will be evaluated, taking as the definition established by the World Health Organization as the consumption of 5 or more drugs.

Drug interactions will be recorded and evaluated using the Lexicomp-online formulary tool, classifying them as X (said drug should be avoided), D (consider modification of therapy), C (requires therapy monitoring), B (no action required) A (no known interaction).

For qualitative variables, descriptive statistics will be used through measures of central tendency and measures of dispersion. To know the association between these variables, it will be evaluated using Pearson correlation and to know the level of association between variables, it will be evaluated with cross tables and Chi square. The analysis will be carried out through the SPSS25 program.

Results: A total of 100 patients were recruited, of which 35% were men and 65% were women, the average age was 57 years, the most frequent etiological entity associated with liver cirrhosis was MASLD, representing 45%, followed by 18% by primary biliary cholangitis and in third place chronic HCV infection with 13%. Among the most frequent comorbidities is type 2 diabetes (48%), followed by systemic arterial hypertension (32%), and hypothyroidism (18%). The classification of liver dysfunction found a predominance of Child Pugh B with 49%. The diagnosis of polypharmacy (use of more than 5 drugs) had a prevalence of 44%. The analysis of probable pharmacological interactions found a percentage of D and C interaction of 18% and 60%, with no X or A interactions reported.

Through Chi square analysis, no association was found between MASLD etiology and polypharmacy. By degree of liver dysfunction, an association was found between the Child Pugh C classification and polypharmacy with a P value of 0.002 and a relative risk of 6.25 (CI 1.73-25.27). The association between drug interactions D, and C were associated with polypharmacy with a statistically significant P with a RR of 9.1 and 9.7 respectively.

Conclusions: The prevalence of polypharmacy in our population was higher than that reported in the international literature, placing patients with liver cirrhosis at high risk of adverse effects and drug interactions, with up to 60% reported in our population with classification D. This should prompt a thorough review of the drugs consumed as well as close monitoring.

Ethical statement: This project has been carried out based on the ethical principles for medical research on human beings, in accordance with the Declaration of Helsinki of the World Medical Association, protecting the personal information of the participants in this research, protecting the information obtained through the clinical record as well as the results of the present study.

This observational, descriptive and retrospective study is classified as risk-free based on the Regulations of the General Health Law on research, so it does not require informed consent.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Age Mean (years)		Standard deviation	
57		12.04	
Gender	Count	N (%)	
Male	35	35%	
Female	65	65%	
Etiology			
Etiology	Count	N (%)	
Hepatitis C chronic infection	13	13%	
MASLD	45	45%	
Biliary primary colangitis	18	18%	
Alcohol abuse disorder	9	9%	
Hepatitis autoinmune	5	5%	
AIH-PBC overlap síndrome	6	6%	
Primary sclerosin colangitis	1	1%	
Cryptogenic	3	3%	
Comorbidities	Count	N (%)	
Type 2 Diabetes	48	48%	
Hypertension	32	32%	
Hypothyroidism	18	18%	
Chronic kidney disease	9	9%	
Liver dysfunction for Child Pugh			
	Count	N (%)	
Child Pugh A	36	36%	
Child Pugh B	49	49%	
Child Pugh C	15	15%	
MELD			
Mean		Standard deviation	
15		6.6	
Farmacology interactions			
Classification		N (%)	
D		18%	
C		60%	
B		2%	
Association with polypharmacy			
Variable	**RR**	**CI**	**P**
MASLD	0.744	0.3-1.65	0.46
Child Pugh A	0.22	0.88-0.56	0.001
Child Pugh B	1.48	0.67-3.29	0.325
Child Pugh C	6.6	1.73-25	0.002
Association with type D interactions			
Polifarmacia	9.1	2.4-30	0.001

https://doi.org/10.1016/j.aohep.2025.101812

Acute Liver Failure Triggered by Idiosyncratic Drug-Induced Liver Injury Associated with Ibuprofen Consumption. Case Report.

Luis R. Alvarez-Martín[1], Luis A. Esquivel-Pacheco[1], Alexis V. Hinostroza-Pezo[1], Karla J. Arroyo-García[1], Montserrat D. Moreno-Huesca[2], Adrian Z. Feria-Avendaño[3], Carlos A. Galván-Castro[4]

[1] *Internal Medicine: High Specialty Regional Hospital Yucatán, Mexico*
[2] *Internal Medicine: High Specialty Medical Unit "Lic. Ignacio Garcia Téllez" IMSS, Mexico*
[3] *Internal Medicine: Regional General Hospital 12, IMSS, Mexico*
[4] *Gastroenterology Department: High Specialty Regional Hospital Yucatán, Mexico*

Introduction and Objectives: Drug-induced liver injury (DILI) refers to hepatic function alterations associated with drugs. The idiosyncratic form can progress from remission to acute liver failure (ALF).

The objective is to present the case of a patient with ALF secondary to idiosyncratic DILI due to ibuprofen consumption.

Materials and Patients: A 43-year-old woman with no history of alcohol, herbal, or drug consumption. She presented with asthenia, adynamia, and unquantified fever, self-medicating with ibuprofen 1.2 g/day. Subsequently, she developed right hypochondrium pain and generalized jaundice without discontinuing ibuprofen. Four weeks after the onset of symptoms, she developed choluria, acholia, and hyporexia, with laboratory findings showing mild thrombocytopenia (platelets 109,000 u/L), transaminasemia (aspartate aminotransferase 890 U/l, alanine aminotransferase 1183 U/l, alkaline phosphatase 311 U/l), direct hyperbilirubinemia (total bilirubin: 7.8 mg/dl, direct: 6.8 mg/dl), and prolonged prothrombin time. Hepatotropic virus and HIV infections were ruled out, as well as autoimmune liver diseases. Hepatic ultrasound showed a starry sky pattern and splenomegaly. Magnetic resonance cholangiopancreatography revealed only hepatosplenomegaly. Liver biopsy showed intense inflammation with polymorphonuclear and lymphocytic infiltrate, total acinar involvement, cholestasis, and hepatocellular necrosis, compatible with acute severe hepatitis and accentuated cholestasis probably secondary to DILI. Management with ursodeoxycholic acid and prednisone (50 mg/day) was initiated without improvement, with a torpid evolution due to the development of hepatic encephalopathy, coagulopathy, and upper gastrointestinal bleeding.

Results: DILI has an estimated annual incidence of 2.5 cases/100,000 inhabitants, considered a diagnosis of exclusion, with complementary studies useful to increase diagnostic suspicion. In this context, the R factor should be calculated to characterize the type of liver injury. Liver biopsy is useful and shows three patterns: necroinflammatory, cholestatic, and mixed. Idiosyncratic reactions occur in susceptible individuals, are dose-independent, and mostly occur 5-90 days after drug intake. Ibuprofen is associated with a mixed pattern in this presentation. DILI is one of the main causes of ALF, defined by the appearance of hepatic encephalopathy between 7-28 days after the onset of jaundice, with coagulopathy and moderate elevation of transaminases and bilirubin. In this case, a woman with no history of liver disease, recent ibuprofen intake, and acute liver damage was observed. During her evaluation, alcoholic, infectious, and autoimmune pathologies were ruled out, revealing a mixed pattern of liver injury (necroinflammatory and cholestatic) on imaging and histopathological studies. In patients with ALF secondary to DILI, early liver transplantation should be considered due to the high risk of irreversible damage and complications.

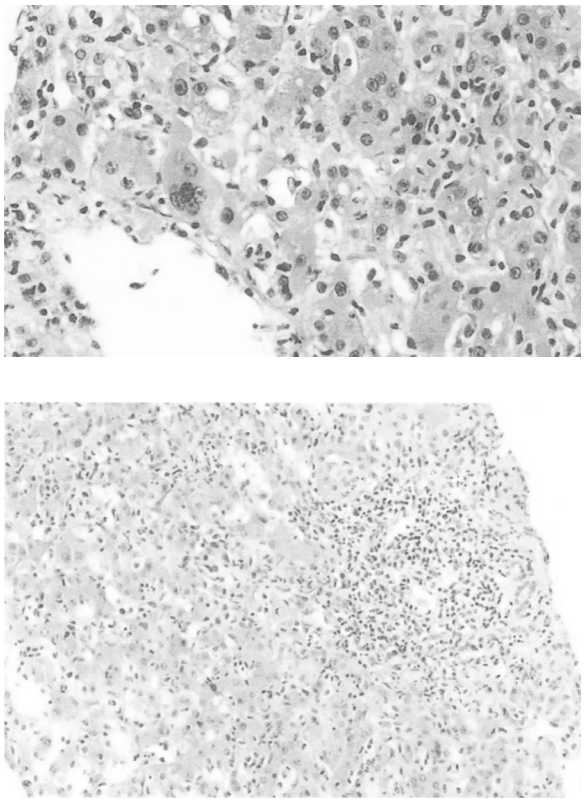
Conclusions: In patients with recent-onset liver failure, it is essential to rule out recent drug intake that may cause DILI to detect it early and initiate timely supportive management, considering liver transplantation due to the high risk of associated complications.

Ethical Statement: This case report has been prepared following the highest ethical standards and respecting the principles of integrity and transparency. All relevant ethical guidelines have been followed, ensuring the privacy and confidentiality of the individuals involved.

Conflict of Interest: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Figure 1. Liver biopsy from the patient



Giant cells, cholestasis, Kupffer cells and hepatocelular necrosis were identified

https://doi.org/10.1016/j.aohep.2025.101813

Acute Liver Failure: Cohort of patients treated at the La Raza National Medical Center Specialty Hospital.

Karenn Garcia-Campos, Francisca Martinez-Silva

Gastroenterology Service, "Antonio Fraga Mouret" Specialty Hospital, La Raza National Medical Center, Mexico

Introduction and Objectives: Identify the clinical, biochemical behavior, complications and mortality of patients with acute liver failure admitted to the hospital.

Materials and Patients: A descriptive, cross-sectional and retrospective observational study was carried out on all patients who entered the gastroenterology service of the CMN La Raza Specialty Hospital from April 2022 to April 2024 with a diagnosis of Acute Liver Failure. Information was taken from the electronic medical, radiological and laboratory care records. Taking demographic data, clinical and biochemical behavior of the patients, the presence of complications, comorbidities and the outcome. The results were analyzed using measures of central tendency to obtain percentages and arithmetic mean.

Results: 78 patients admitted to the service in this period were registered, of them 11 women (14%) and 67 men (85.4%). The average age was 34.7 years (18-64 years). The most frequent cause was attributable to Hepatitis A virus (61%), autoimmune hepatitis (9.75), acute fatty liver of pregnancy (7.3%); However, in 9.7% of patients, no cause was determined (Graphic 1). More than half of the patients presented without other comorbidity (58.5%). Of the patients with comorbidities, Systemic Arterial Hypertension was the most frequent in 17%. The most frequent complications were acute kidney injury (78%), ascites (14.6%), metabolic acidosis (14.6%); upper gastrointestinal bleeding (12.1%) and diffuse cerebral edema (9.7%). Some patients required some type of renal function replacement therapy, such as Hemodialysis (19.5%). 7.3% required therapy with PRISMA and 34.1% with MARS. Mortality is significant in 48.7% of patients despite therapy. Of the patients, 28.2% met transplant criteria, and only 25% of these were transplanted (Table 1).

Conclusions: We have noticed an increase in the incidence of Acute Liver Failure in general, highlighting this in young patients of economically productive age and reproductive age, which emphasizes enhancing prevention campaigns in vaccination against virus A in this population, being the cause, of more frequent in our cohort.

Ethical statement: Information taken from electronic files without data that invades privacy; therefore, ethical conflicts are not generated.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

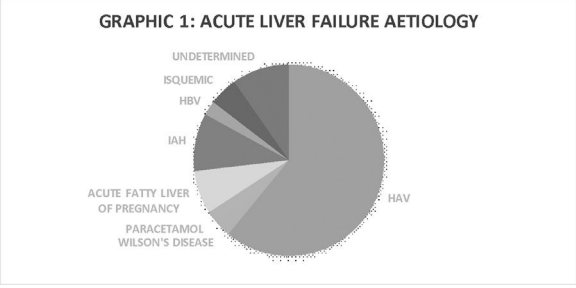


Table 1
Demographic data of the population

SEX	
WOMEN	13 (31.7%)
MEN	28 (68.3%)
AVERAGE AGE	34.7 YEARS OLD (18-64 AÑOS)
COMORBILITIES	NONE 58.5%
	17%
COMPLICATIONS	ACUTE KIDNEY INJURY78%
	ASCITES 14.6%
	METABOLIC ACIDOSIS 14.6%
	DIGESTIVE HEMORRHAGE12.2%
	BRAIN EDEMA 9.7%

https://doi.org/10.1016/j.aohep.2025.101814

Prevalence of fibrosis and steatosis determined by transient elastography and controlled attenuation parameter (Fibroscan®) in diabetic patients

Kevin S. Vázquez-Hernández[1],
Andres Burak-Leipuner[1], Alfredo I. Servin-Caamaño[2],
Javier A. Romero-Bermúdez[2],
Laura E. Ceceña-Martínez[2], José L. Pérez-Hernández[1],
María C. Castañeda-Aguilar[3],
Fátima Higuera-de la Tijera[1]

[1] *Gastroenterology, General Hospital of México Dr Eduardo Liceága, Mexico*
[2] *Internal Medicine, General Hospital of México Dr Eduardo Liceága, Mexico*
[3] *Clinical Nutrition, Hospital, General Hospital of México Dr Eduardo Liceága, Mexico*

Introduction and Objectives: Globally, a higher prevalence of metabolic dysfunction-associated fatty liver disease (MAFLD) has been reported in diabetics (55.5%) compared to the general population (25%). In Mexico, there is a lack of studies on diabetes (DM2) in this subgroup. Objective: To determine the prevalence of hepatic fibrosis and steatosis determined by FibroScanâ in patients with DM2.

Materials and Patients: An observational, descriptive, cross-sectional study included patients who attended the clinic for DM2 between August 2018 and March 2024 and underwent FibroScan® to determine the absence/presence and degree of fibrosis and steatosis. Patients were excluded if they had risky alcohol consumption, hepatitis B/C, any type of previously diagnosed hepatopathy or cirrhosis, or consumption of medications other than those for metabolic syndrome (MS). Descriptive statistics were used, and the prevalence of FibroScan® determined steatosis and fibrosis was estimated.

Results: A total of 298 patients were evaluated, 195 (64.5%) women, with a mean age of 55.6±10.8 years. Of these, 284 (95.3%) agreed to undergo FibroScan® examination, none had risky alcohol consumption, 146 (51.4%) were smokers, 114 (40.1%) were overweight, 75 (25.6%) had grade I obesity, 34 (12%) had grade II obesity, and 14 (4.9%) had grade III obesity. 106 (56.3%) were hypertensive, 177 (62.3%) had dyslipidemia, and 168 (59.2%) met the criteria for MS. Regarding the FibroScan® parameters, 109 (38.4%) had steatosis: S1 in 34 (12%), S2 in 33 (11.6%), and S3 in 42 (14.8%). There was fibrosis in 155 (56.4%): F1 in 42 (14.8%), F2 in 40 (14.1%), F3 in 26 (9.2%), and F4 in 47 (16.5%). The biochemical parameters of this cohort are shown in Table 1. There was no relationship between the duration of DM2, the stage of disease control, recent adherence to treatment, and the presence or stage of steatosis or fibrosis (p=N.S.).

Conclusions: The prevalence of MASLD associated steatosis and fibrosis is high in Mexican diabetic patients and occurs independently of disease control, disease duration, and recent adherence to treatment.

Ethical Statement: This study was conducted following the principles and ethical standards of our institution in accordance with the Declaration of Helsinki.

Declaration of Interests: None.

Funding: This project was financed through the “Young Researchers Scholarship” awarded to Dr. Kevin Sergio Vázquez Hernández by Grupo Medifarma S.A. de C.V.

Table 1
Biochemical Characteristics of the Cohort of Patients with Diabetes.

Variable	Mean (± Standard Deviation)	Range
Glucose (mg/dL)	129 ± 48	51 – 360
HbA1c (%)	7.42 ± 2	4 – 16.7
Creatinine (mg/dL)	0.88 ± 0.46	0.4 – 4.08
Aspartate Aminotransferase (U/L)	28 ± 18.5	10 – 180
Alanine Aminotransferase (U/L)	29.5 ± 20.3	8.8 – 139
Gamma-glutamil transferase (U/L)	61.5 ± 79.2	9 – 508
Body Mass Index (kg/m^2)	29.88 ± 5.07	18.88 – 48.99
Triglycerides (mg/dL)	185.9 ± 147.8	40 – 1385
Total Cholesterol (mg/dL)	172.42 ± 44.24	39 – 295
High Density Lipoproteins (mg/dL)	44.56 ± 12.65	2 – 132
Low Density Lipoproteins (mg/dL)	104.46 ± 35	22 – 230

https://doi.org/10.1016/j.aohep.2025.101815

Prevalence of high-risk metabolic dysfunction-associated fatty liver disease (MASH) according to the FAST® index in a group of diabetic patients

Kevin S. Vázquez-Hernández[1], Andres Burak-Leipuner[1], Alfredo I. Servin-Caamaño[2], Javier A. Romero-Bermúdez[2], Laura E. Ceceña-Martínez[2], José L. Pérez-Hernández[1], María C. Castañeda-Aguilar[3], Fátima Higuera-de la Tijera[1]

[1] *Gastroenterology, General Hospital of México Dr. Eduardo Liceága, Mexico*
[2] *Internal Medicine, General Hospital of México Dr. Eduardo Liceága, Mexico*
[3] *Clinical Nutrition, Hospital, General Hospital of México Dr. Eduardo Liceága, Mexico*

Introduction and Objectives: Diabetes is a high-risk condition for the progression of metabolic-associated fatty liver disease (MASLD). The FAST index combines the FibroScan® and AST to predict the risk of high-risk metabolic dysfunction-associated steatohepatitis (MASH). Objective: determine the proportion of diabetic patients at high risk of MASH according to the FAST index.

Materials and Patients: Observational, cross-sectional study to estimate prevalence. Diabetic patients who agreed to undergo FibroScan® and liver biochemistry profile were included. The FAST® index was calculated (<0.35 no risk; 0.35 to 0.67 indeterminate; ≥ 0.67 high-risk NASH). Descriptive statistics were used, and a correlation matrix was performed using Pearson's test, with a p value < 0.05 considered significant.

Results: 298 patients were evaluated, 195 (64.5%) women, mean age 55.6±10.8 years, of whom 284 (95.3%) agreed to undergo FibroScan® study, 109 (38.4%) presented steatosis: S1 in 34 (12%), S2 in 33 (11.6%) and S3 in 42 (14.8%). 155 (56.4%) had fibrosis: F1 in 42 (14.8%), F2 in 40 (14.1%), F3 in 26 (9.2%) and F4 in 47 (16.5%). 261 (87.6%) patients had recent determination of aminotransferases; according to the FAST® index: without risk= 200 (76.6%), indeterminate= 31 (11.9%), and with high risk= 30 (11.5%). There was a strongly positive correlation between a higher FAST index and a higher probability of having a higher degree of fibrosis (r=0.702, p<0.0001). The correlation matrix is shown in Table 1

Conclusions: The prevalence of MASH is considerable in patients with diabetes; the factors that determine this risk in this population are not yet clear. FAST® appears to be a non-invasive tool for making decisions regarding MASH.

Ethical Statement: This study was conducted following the principles and ethical standards of our institution in accordance with the Declaration of Helsinki.

Declaration of Interests: None.

Funding: This project was financed through the "Young Researchers Scholarship" awarded to Dr. Kevin Sergio Vázquez Hernández by Grupo Medifarma S.A. de C.V.

Table 1
Correlation Matrix to Determine the Correlation between FAST® Score and Clinical Characteristics in a Cohort of Diabetic Patients

Covariate	Correlation Coefficient	P
Sex (women)	0.161	0.009*
Adherence to Treatment	-0.162	0.009*
Steatosis Stage	0.115	0.063
Fibrosis Stage	0.702	0.000*
Metabolic Syndrome	0.056	0.369
Smoking	-0.022	0.719
HbA1c (±7)	0.124	.056

*The correlation is significant with p<0.05

https://doi.org/10.1016/j.aohep.2025.101816

Serum Immunoglobulin M levels and neutrophil/lymphocyte index as predictors of treatment response in patients with primary biliary cholangitis

Anel Y. Avila-Franco, Rodrigo Guirao-Perez, Eumir I. Juárez-Valdes, Scherezada MI. Mejía-Loza

Department of Gastroenterology, Juarez Hospital, Mexico

Introduction and Objectives: Primary biliary cholangitis (PBC) involves chronic inflammation of the bile ducts, with a high risk of progression to cirrhosis in non-responders to treatment. Identifying the relationship between immunoglobulin M (IgM) levels and neutrophil/lymphocyte index as predictors of response to treatment could optimize clinical outcomes.

Materials and Methods: A retrospective, longitudinal, analytical, and observational study was conducted that included the review of 71 records of patients diagnosed with PBC. Baseline serum IgM levels were recorded, and the neutrophil/lymphocyte index (NLI) was calculated. Response to treatment with ursodeoxycholic acid (UDCA) at doses of 13-15mg/kg was assessed after one year of follow-up, according to the Barcelona criteria. Subsequently, Pearson's correlation coefficient was determined to identify the relationship between the variables.

Results: A total of 67 patients diagnosed with PBC were included. The mean age reported was 55.5 years and the highest frequency was recorded in females, representing 91% of cases. The main comorbidities reported were hypothyroidism (20.8%), systemic sclerosis (11.9%) and Sjögren's syndrome (7.4%). Clinical portal hypertension was identified at diagnosis in 22 patients (32.8%). An adequate response to treatment was observed in 35 patients (52.2%), while 32 (47.8%) did not show a satisfactory response. The mean neutrophil/lymphocyte index value in the response group was 2.3 (range: 0.7-8.6), while in the non-response group, it was 2.5 (range: 0.8-18.5). Additionally, 42 patients (62%) were identified with IgM levels >240mg/dl. Subsequently, a Pearson correlation analysis was performed between IgM and NLI levels with treatment response, yielding a value of 0.04 (p>0.05) and -0.18 (p>0.5), respectively.

Conclusions: A considerable percentage of patients presented failure to treatment with UDCA and according to the results, there was no significant association between IGM levels and NLI and therapeutic response.

Ethical statement: The study was conducted in accordance with the ethical principles set forth in the Declaration of Helsinki and informed consent was obtained from all participants.

Declaration of Interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101817

Exploring the diagnostic accuracy of MAFLD, MASLD and metabolic syndrome in individuals with and without steatosis.

Mariana M. Ramírez-Mejía[1,2], Stephany M. Castañeda-Castillo[1,3], Mohammed Eslam[4], Nahum Méndez-Sánchez[1,5]

[1] *Liver Research Unit, Medica Sur Clinic & Foundation, Mexico City, Mexico City, Mexico*
[2] *Plan of Combined Studies in Medicine (PECEM-MD/PhD), Faculty of Medicine, National Autonomous University of Mexico, Mexico City, Mexico*
[3] *Medical, Dental and Health Sciences Master and Doctorate Program, National Autonomous University of Mexico, Mexico City, Mexico*

[4] *Storr Liver Centre, Westmead Institute for Medical Research, Westmead Hospital and University of Sydney, NSW, Australia*
[5] *Faculty of Medicine, National Autonomous University of Mexico, Mexico City, Mexico*

Introduction and Objectives: The renaming of non-alcoholic fatty liver disease (NAFLD) to metabolic dysfunction-associated fatty liver disease (NAFLD) and metabolic dysfunction-associated steatotic liver disease (MASLD) marks a crucial milestone in the understanding of this complex disease, recognizing the role of metabolic dysfunction beyond the simple exclusion of excessive alcohol consumption. However, despite these advances, the redefined criteria have generated significant debate around their diagnostic accuracy. This debate centers on several key issues, such as the breadth of the criteria, their applicability in different populations, and the risk of overdiagnosis. The aim of this study is to explore the application of the MAFLD, MASLD and metabolic syndrome criteria in the identification and categorization of individuals with and without hepatic steatosis, with the objective of determining the suitability of both criteria for clinical use.

Materials and Patients: A retrospective study was conducted with 600 individuals who attended routine check-ups at Medica Sur Clinic and Foundation, Mexico City, Mexico. Data were collected from clinical evaluations, imaging studies and laboratory tests. The diagnosis of hepatic steatosis was made using vibration-controlled transient elastography. The diagnosis of MAFLD, MASLD and metabolic syndrome was made according to the criteria established for each definition.

Results: Among individuals with hepatic steatosis, prevalence rates were 89.4% for MASLD, 81.5% for MAFLD (81.5%), and 32.8% for metabolic syndrome. Interestingly, a higher proportion of individuals without hepatic steatosis met MASLD criteria (53.2%) compared with MAFLD (28.1) and MetS (8.2%) criteria. Sensitivity and specificity analysis revealed a balanced performance of MAFLD, whereas MASLD showed higher sensitivity but lower specificity. Sensitivity and specificity analysis revealed a balanced performance of MAFLD, whereas MASLD showed slightly higher sensitivity but much lower specificity. When assessing the metabolic risk profile, individuals with MAFLD and metabolic syndrome were found to be at higher risk than those with MASLD.

Conclusions: MAFLD emerges as a balanced diagnostic framework, offering reliable sensitivity and specificity. Although MASLD exhibits higher sensitivity, its lower specificity

Ethical statement: All procedures performed were carried out in accordance with the ethical standards of the Ethics Committee of the Clinica Medica Sur Foundation (protocol code 2021-EXT-552) and with the 1964 Declaration of Helsinki and its subsequent amendments or other comparable ethical standards.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101818

Neutrophil/lymphocyte index as a prognostic predictor in patients with primary biliary cholangitis

Carlos S. Tinitana-Jumbo,
Viridiana López-Ladrón-De Guevara,
Karina Cazarín-Chávez, Paloma M. Diego-Salazar,
Santiago Camacho-Hernández,
María F. Higuera-De la Tijera

Department of Gastroenterology and Hepatology, Hospital General de México "Dr. Eduardo Liceaga", Mexico

Introduction and Objectives: There is an inadequate response to first line treatment in 40% of patients with primary biliary cholangitis (PBC). The neutrophil/lymphocyte (N/L) index has been associated with poor long-term prognosis. Our objective was to evaluate the relationship of N/L index with prognosis at 1 year of treatment in patients with PBC.

Materials and Patients: This is an observational, retrospective, and analytical study of patients diagnosed with PBC, evaluating the prognosis according to the response to treatment measured by the GLOBE scoring system and its relationship with the N/L index at the time of diagnosis. Qualitative data are expressed as percentages and quantitative data as mean±SD. Statistical comparison was performed with the two-tailed unpaired Student's t-test or chi-square, as appropriate. Alpha=0.005.

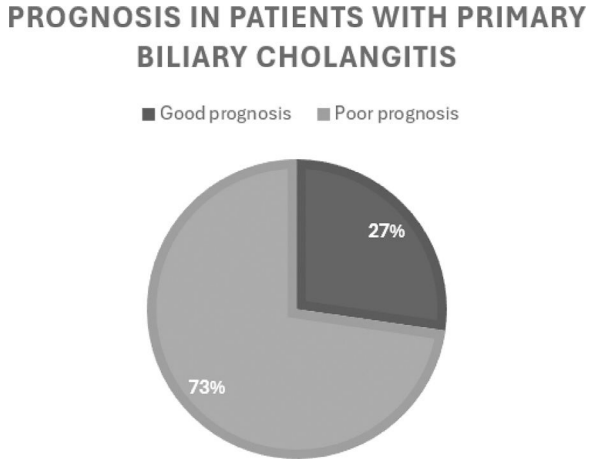
Results: A total of 128 patients (54.21±10.26 years, 93.8% women) with PBC were included. According to the GLOBE score, 27.3% were classified as "good prognosis" and 72.7% as "poor prognosis". The N/L index was lower in the good prognosis group (2.29± 0.99) compared to the poor prognosis group (3.06±1.48, p=0.005), also the Meld-Na scoring system was higher in the poor prognosis group (11.57±4.96 vs. 7.62±1.33, p=0.005). Mortality in the population was 9.4% all belonging to the poor prognosis group.

Conclusions: The N/L index in patients diagnosed with PBC is related to the prognosis after one year of treatment as measured by the GLOBE score. It is necessary to prospectively assess the findings in order to be able to determine their prognostic utility at the time of diagnosis.

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

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.



https://doi.org/10.1016/j.aohep.2025.101819

Spontaneous Fungal Peritonitis versus Fungiascites

Carlos F. Fajardo – Felix[1],
Elda V. Rodríguez – Negrete[2],
Patricia Manzano – Gallosso[3],
Francisca Hernandez – Hernandez[4]

[1] *Specialties Hospital Dr. Bernardo Sepúlveda, National Medical Center Century XXI, Gastroenterology Department, Mexico*
[2] *Specialties Hospital Dr. Bernardo Sepúlveda, National Medical Center Century XXI, Gastroenterology Department, Mexico*

[3] *Mycology Unit, Department of Microbiology and Parasitology, Faculty of Medicine, National Autonomous University of Mexico, Mexico*
[4] *Mycology Unit, Department of Microbiology and Parasitology, Faculty Medicine, National Autonomous University of Mexico*

Introduction and Objectives: Infections in patients with liver cirrhosis (LC) are the cause of most decompensations, leading to a high mortality rate in 54% of cases. Describe the characteristics of the patients with spontaneous fungal peritonitis or fungiascites.

Materials and Patients: Three cases are presented. Patient A is a 58 years male with liver cirrhosis resulting from Metabolic Dysfunction Associated Steatotic Liver Disease (MASLD), Child-Pugh (CHP) B, MELD 3.0 score of 29 points, intractable ascites in secondary prophylaxis due to spontaneous bacterial peritonitis (SBP), systemic arterial hypertension, and chronic kidney disease KDIGO IIIa, biochemically with lymphocytes of 0.55 10^3mcL; The patient B is a 58-year-old female with liver cirrhosis due to MASLD, CHP B, and MELD 3.0 score of 16 points, intractable ascites, type 2 diabetes mellitus, and systemic arterial hypertension, biochemically with lymphocytes of 0.88 10^3mcL; The patient C is a 66-year-old male with LC secondary to alcohol use disorder and MASLD, CHP C, and MELD 3.0 score of 38 points with grade III acute on chronic liver failure with a history of hepatocellular carcinoma not eligible for oncological treatment. The ascites sediment underwent processing in the Mycology unit laboratory of the Faculty of Medicine at the National Autonomous University of Mexico (UNAM), where phenotypic and molecular identification of fungal agents was conducted.

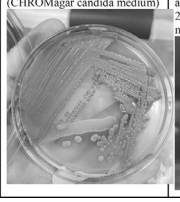
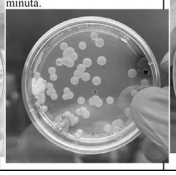
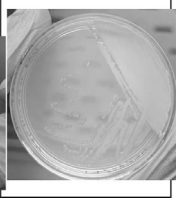
Results: Candida Parapsilosis was isolated in patient A, cytologically without SBP data and negative bacterial culture of ascites (BCA). Days later, he presented to the emergency room with acute-on-chronic grade II liver failure with SBP data associated with healthcare. Following the previous culture showing growth, treatment with caspofungin was administered for 14 days before discharge. However, 15 days later, he was readmitted due to severe clostridioides difficile enterocolitis and esophageal candidiasis, ultimately passing away during hospitalization. Patient B exhibited isolation of Candida Albicans and Rhodotorula minuta, cytologically without SBP data and negative BCA, reporting abdominal pain and ascites grade II. The patient received intravenous Caspofungin for 7 days and Fluconazole for 10 days and emergency dialysis was required, hemodialysis was performed. The patient was hospitalized for 10 days. Patient C was diagnosed with Rhodotorula minuta, had a positive procalcitonin, lymphocytes at 0.61 10^3mcL, and no biochemical cytological data of ascites for SBP. Bacterial culture of ascites was negative. Imaging showed left pleural effusion on chest x-ray and ascites on abdominal x-ray. The family requested discharge for palliative care, and the patient passed away.

Conclusions: Patients with a MELD score higher than 15 points, ascites, lymphopenia, and positive fungal culture of ascitic sediment, absence of spontaneous bacterial peritonitis in ascitic cytology, and negative bacterial culture results may indicate a grim survival outlook. Further research is needed to delineate the features of PFE or Fungiascites.

Statement of ethics: Consent was from the patient or from there legal guardian.

Declaration of interest: None.

Funding: Mycological study conducted by the Mycology Unit, Department of Microbiology and Parasitology, School of Medicine, National Autonomous University of Mexico.

Patient	A	B	C
Mycological diagnosis	Candida Parapsilosis (CHROMagar candida medium) 	1.White colony: Candida albanics. 2. Pink colony: Rhodotorula minuta. 	Rhodotorula minuta 

https://doi.org/10.1016/j.aohep.2025.101820

Association between malnutrition determined by hand grip strength and the presence of minimal hepatic encephalopathy in women with liver cirrhosis

Valeria Rangel-Espinosa[1], Marlene López-Sánchez[1], Aldo Allende-López[1], Nayeli Ortiz-Olvera[2], Aleida Bautista-Santos[2], Rosalba Moreno-Alcántar[2], Segundo Morán[1]

[1] *Gastro-Hepatology Laboratory of the Pediatric Hospital at the National Medical Center Siglo XXI, Mexico*
[2] *Gastroenterology Service, Specialties Hospital at the National Medical Center Siglo XXI, Mexico*

Introduction and Objectives: Minimal hepatic encephalopathy (MHE) represents the initial stage within the spectrum of hepatic encephalopathy (HE). Its presence has been linked to muscular alterations: a reduction in the Skeletal Muscle Index was observed in 84% of MHE patients. Moreover, between 41-49% of individuals with MHE exhibit muscle depletion, as indicated by their mid-arm muscle circumference (MAMC) falling below the 5th percentile. Hand grip strength (HGS) serves as a marker of muscle functionality; however, the relationship between HGS values and the presence of MHE remains uncertain. Therefore, this study aims to achieve two primary objectives: 1) to establish a cut-off value for classifying malnutrition based on HGS measurements and 2) to investigate the association between malnutrition, as determined by HGS and the presence of MHE.

Materials and Patients: This cross-sectional study enrolled 241 female participants from the Gastroenterology department at Hospital de Especialidades of Centro Médico Nacional Siglo XXI. Eligible participants were aged between 18 and 76 years and diagnosed with liver cirrhosis of any etiology, excluding cases related to excessive alcohol consumption. Exclusion criteria included recent antibiotic use (<1 month), chronic kidney disease, elevated creatinine levels, hepatocellular carcinoma, illiteracy, and a history of hepatic encephalopathy (HE) or current decompensation due to variceal hemorrhage. Various parameters, including chronometric, clinical, biochemical, anthropometric, and dietary factors, were assessed. The determination of the malnutrition cut-off point based on hand grip strength was established using tertiles, and the association between these values and Minimal Hepatic Encephalopathy (MHE) was evaluated through logistic regression analysis. Statistical calculations were performed using the SPSS© 27 software.

Results: The median age of the participants was 59 years (interquartile range 52-63). Among subjects, 168/241 (50.8%) individuals with liver cirrhosis had hepatitis C virus as an associated factor, while

136/241 (56.4%) were classified as stage 2 cirrhosis, and 37/241 (15.4%) presented with ascites. Furthermore, 36/ 241 (14.9%) participants were diagnosed with MHE. The threshold for identifying malnutrition based on HGS was established as the values falling within the lowest tertile of the sample (<16.5 kg), resulting in 76/241 (31.5%) individuals being classified as malnourished. Malnutrition showed an association with the presence of MHE, OR: 2.214 (95% CI: 1.077-4.552, p=0.031). Adjustment of models for the presence of hyponatremia, BMI, CAMB, triceps skinfold, and Child-Pugh score did not alter this association. However, when accounting for albumin levels (g/dl), both malnutrition and albumin levels were independently associated with the presence of MHE [Malnutrition OR: 2.104, 95% CI 1.014-4.364, p=0.046 / Albumin OR: 0.512, 95% CI 0.282-0.932, p=0.028].

Conclusions: Reduction of the hand grip is associated with an increased risk of MHE, supporting the role of muscle tissue in the development of MHE.

Ethical Statement: Approval for the study was obtained from the local ethics committee (R-2024-3601-045).

Declaration of Interests: None.

Financing: This study received partial funding from project No. SALUD-2014-1-233823 of CONACyT (National Council of Science and Technology).

https://doi.org/10.1016/j.aohep.2025.101821

Skeletal muscle as a source of IGFBP-2 in a murine model of metabolic dysfunction associated with steatotic liver disease.

Miriam G. Bautista-Ubaldo[1], Bryan M. Ata-Calixto[1], Diana Paola Osnaya-Burgos[1], Ignacio González-Sánchez[2], Gabriela Gutiérrez-Reyes[1], Carolina Guzmán[1]

[1] *Liver, Pancreas, and Motility Laboratory, Experimental Medicine Unit, General Hospital of Mexico*
[2] *Faculty of Chemistry, Department of Biology, National Autonomous University of Mexico (UNAM)*

Introduction and Objectives: Insulin-like Growth Factor Binding Protein (IGFBP)-2 is lower in serum during obesity and metabolic dysfunction. We have previously shown that the decrease in serum IGFBP-2 follows a diminished expression in liver and heart, both associated with the progression of steatotic liver disease. We aimed to identify, in a murine model, the synthesis of IGFBP-2 in extrahepatic tissues involved in metabolic dysfunction: skeletal muscle and adipose tissue.

Materials and Patients: Samples of hamstring muscle, and epididymal adipose tissue were obtained from male C57BL/6 mice, fed a high-fat diet supplemented with sucrose and fructose (42g/L) in the beverage during 6 months. All procedures were approved by the Institutional Committee of Care and Use of Laboratory Animals at the School of Medicine, UNAM (FM/DI/005/2022). Four groups were included: Control; Metabolic dysfunction (MD), exhibiting increased bodyweight and adiposity; MD with steatosis (MD+SS); and MD+SS with fibrosis (MD+SS+F). Total protein was isolated in a protease inhibitor cocktail. Protein integrity was assessed by SDS-PAGE. IGFBP-2 was assayed by ELISA. Data was shown as Mean±SD, analyzed by one-way ANOVA; Student's t test was applied to compare 2 groups. P<0.05 was considered significant.

Results: IGFBP-2 expression was 6-fold increased in control skeletal muscle compared to control adipose tissue. In epididymal adipose tissue, IGFBP-2 expression significantly decreased in MD+SS+F compared to Controls, and MD. In contrast, the hamstring showed increased IGFBP-2 expression in mice showing metabolic dysfunction associated with steatotic liver disease: MD+SS and MD+SS+F. The percentage of adiposity significantly increased in MD subjects whereas no changes were observed regarding muscle mass, suggesting hypertrophy might be key.

Conclusions: Our results show that metabolic dysfunction (MD) associated with MASLD have a role in inhibiting IGFBP-2 expression in adipose tissue. In contrast, skeletal muscle increases its synthesis. These results suggest a role for skeletal muscle in the reversion of MASLD through IGFBP-2 expression. More studies are needed to identify the roles of skeletal muscle and its hypertrophic state in MASLD.

Ethical statement: All procedures were approved by the institutional Committee for the Care and Use of Laboratory Animals (CICUAL) from the Medicine School, UNAM (FM/DI/005/2022).

Declaration of interests: None.

Funding: This study was supported by the Research Direction from General Hospital of Mexico (DI/12/UME/4/20).

https://doi.org/10.1016/j.aohep.2025.101822

Mortality and outcome of acute kidney injury in hospitalized patients with cirrhosis, kidney injury and bacterial infection.

Karina Cazarin-Chávez, Paloma M. Diego-Salazar, Diego F. Abendaño-Rivera, Santiago Camacho-Hernández, Fatima Higuera-De la Tijera, José L. Pérez-Hernández

Department of Gastroenterology and Hepatology, General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico

Introduction and Objectives: Acute kidney injury (AKI) in hospitalized patients with cirrhosis occurs in 60%, is often precipitated and one cause is bacterial infections (BI), worsening the course of cirrhosis. The aim of this work is to report mortality and renal function outcomes in patients with cirrhosis, AKI and IB.

Materials and Patients: We analyzed a retrospective cohort from August 2022 to January 2023 with 201 patients (55.42±10.41 years, 52.7% men). We included patients with a diagnosis of decompensated cirrhosis secondary to different precipitants, including IB, who did or did not develop AKI. We report the frequency of AKI associated with IB and divide the population between those who presented with IB and those who did not. Qualitative data are expressed as percentages and quantitative data as mean±SD. Statistical comparison was performed with the two-tailed unpaired Student's t-test or chi-square, as appropriate Alpha=0.05.

Results: The 73 patients with IB (54.48±9.58 years. 54.8% male) did not differ in age or sex compared to the 128 patients without IB (55.95±10.85 years, 51.6% male, p=0.65) (Figure 1). Patients with IB had a higher risk of mortality at 28 (42.5% vs. 6.3%, p<0.0001) and 90 days (50.7% vs. 10.9%, p<0.0001) (figure 2). Of the total patients who developed AKI with IB (78.1% vs. 43%), it was observed that they had the worse outcome of renal function (complete resolution 37%, incomplete resolution 9.6% and no resolution 31.5% vs 32.8%, 2.3% and 7.8%, p=0.0036), more days of in-hospital stay (7.64±5.31 days vs. 4.23±3.29, p<0. 0001) and analyzing risk factors, they also had significantly higher creatinine numbers (2.26±1.38 vs. 1.43±1.01, p<0.0001), as well as Child Pugh scores (A=1. 4%, B=15.1% and C= 83.6% vs. 18.8%, 46.1% and 35.2%, p<0.0001), MELD Na (27.22± 8.38 vs. 18.85±8.7, p<0.0001) and ACLF grades (1=20.5%, 2=32.9% y 3=13.7% vs. 14.1%, 7.8% y 1.6%, p<0.0001). Urinary tract infection 32 (43.8%) was the most frequent type of infection.

Conclusions: In patients with cirrhosis, AKI associated with IB increases mortality and worsens renal function outcome. Therefore,

IB is not only a precipitant of cirrhosis decompensations but also represents a significant risk factor for a severe clinical course.

Ethical statement: The research was conducted in accordance with the Helsinki statement of the World Assembly 2013.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

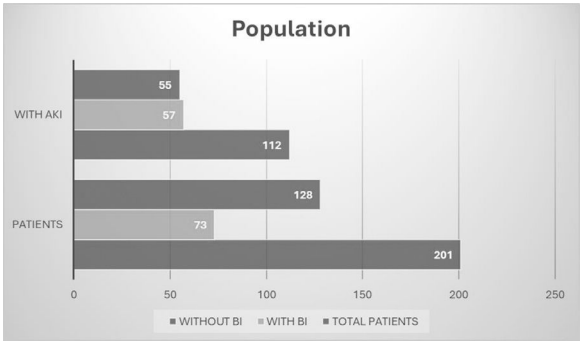


Figure 1

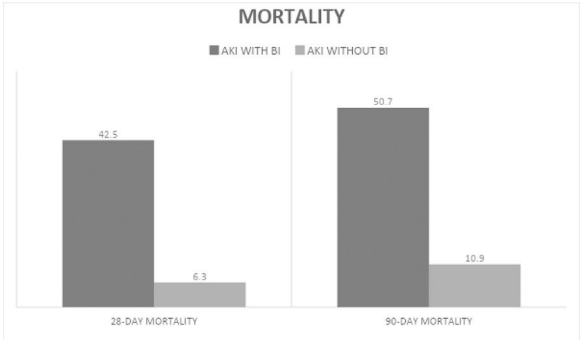


Figure 2

https://doi.org/10.1016/j.aohep.2025.101823

Seroprevalence of hepatitis b and c viruses in blood donors in a third level hospital from 2019 to 2023.

Karina Cazarin-Chávez[1], Yadira L. Béjar-Ramírez[2], José A. Pérez-González[2], Claudia G. Solís-Hernández[1], María F. Higuera-De la Tijera[1], José L. Pérez-Hernández[1]

[1] *Gastroenterology and Hepatology Department of the General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico*
[2] *Blood bank service of the General Hospital of México "Dr. Eduardo Liceaga", Mexico*

Introduction and Objectives: Hepatitis B virus (HBV) and C virus (HCV) infection are public health problems and risks for transfusion medicine, which have been reduced by routine serological screening. The aim of this work is to describe the prevalence of these infections in blood donors in a tertiary hospital.

Materials and Patients: An observational, descriptive, retrospective and analytical study was conducted from 2019 to 2023 in blood donors in a third-level hospital, a total of 99,393 donors; only the complete records of the donors who resulted with reactivity and later confirmation for HBV and HCV were reviewed, The data were analyzed using the Statistical Program SPSS. Qualitative variables are expressed as percentages and quantitative variables as mean±SD, as appropriate.

Results: A total of 370 donors who tested positive for some virus were included, despite having been classified as suitable to donate blood products following an official questionnaire with no relevant history and laboratory tests with no alterations. The mean age was 42.02±11.88 years; 54% were men; 135 patients were reactive for HBV and 235 for HCV; however, the true seropositivity found was 2 (1.4%) cases with HBV and 11 (4.6%) cases for HCV (figure 1); the rest of the donors with reactive serology had negative confirmatory studies. The overall seroprevalence observed in our population was 0.002% for HBV, 100% for men and, 0.011% for HCV, 45.4% for women and 54.4% for men. The frequency was 5.5 times higher for HCV than for HBV.

Conclusions: In people with no apparent risk factors, the prevalence of HBV and HCV infection is very low, with HCV being more frequent. However, if the "fit" is infected, it is necessary to optimize the health system to offer universal screening that includes those with risk factors.

Ethical statement: The research was conducted in accordance with the Helsinki declaration of the World Assembly 2013.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

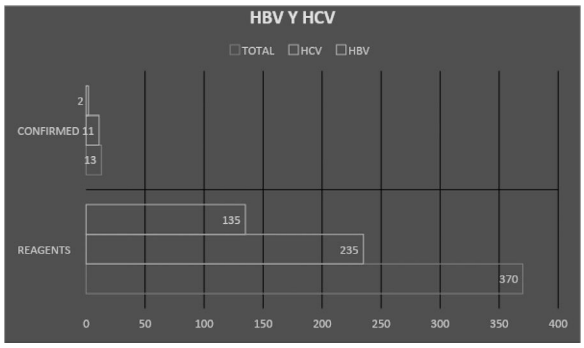


Figure 1.

https://doi.org/10.1016/j.aohep.2025.101824

Experience in the treatment of simple hepatic cysts in a tertiary care hospital

Jessica Mejía-Ramírez[1], Ana P. Escobedo-Zúñiga[1], Rocío Enríquez-García[2], Jorge R. Perez-Pastrana[2], Fátima Higuera-De La Tijera[1], José L. Pérez-Hernández[1]

[1] *Gastroenterology and Hepatology Service of the General Hospital of México "Dr. Eduardo Liceaga", Mexico*
[2] *Interventional Radiology Service of the General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico*

Introduction and Objectives: Simple hepatic cysts have a low prevalence. Most are diagnosed by finding, some produce pain, are characterized by ultrasound or tomography and the indications for treatment are pain and risk of rupture. **This study aims t**o report experience in the treatment of patients with simple liver cysts over a 5-year period.

Materials and Patients: Retrospective, descriptive, observational study of a cohort of patients with simple liver cysts with an indication for drainage and sclerosis. Descriptive statistics with measures of central tendency and dispersion were used.

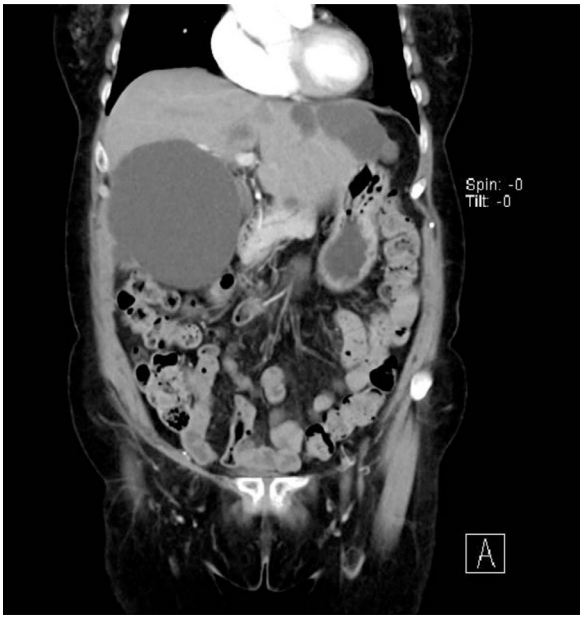
Results: 75 patients with hepatic cysts were included, 35 men (46.6%), age 48‡ 10.3 years, 40 Women (53%) age 45+ 8 years; the average number of cysts per patient treated was 1.3, with a mean cyst size of 13+ 3 cm, By location were similar in any of the two lobes, the most frequent presenting symptom was pain in 70 patients (93.3%), the rest were due to risk of rupture to the abdominal cavity and/or thorax; 90 cysts were drained and sclerosed guided by ultrasound, using absolute alcohol in a volume of 20% in relation to the size of the cyst, in 100% a decrease of the cyst was observed until remission, no complications were reported, The average follow-up was 15 months and there was recurrence in only 3 cases (4%).

Conclusions: The drainage and excision of simple hepatic cysts in expert hands represents an effective and safe alternative in the treatment of symptomatic cysts or with a risk of rupture; recurrence in this treatment is infrequent. No complications were observed.

Ethical Statement: This study was conducted in accordance with the ethical principles of our hospital center. All data were handled with strict confidentiality and for research purposes only.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.



https://doi.org/10.1016/j.aohep.2025.101825

TSH and its Correlation in the Development of Fibrosis in Patients with Hypothyroidism in a Tertiary Care Hospital

Aranzazu G. Pérez Castañeda[1],
Jose A. Velarde Ruiz Velasco[1],
José R. Barrientos Ávalos[2], Juan M. Aldana Ledesma[1],
Edgar S. García Jiménez[1]

[1] *Gastroenterology, Guadalajara Civil Hospital Fray Antonio Alcalde, Mexico*
[2] *Endocrinology, Guadalajara Civil Hospital Fray Antonio Alcalde, Mexico*

Introduction and Objectives: Fatty liver disease and hypothyroidism are two prevalent conditions in Mexico that pose significant public health challenges. The increase in their incidence over the past decades is due to changes in lifestyle, diet, and access to healthcare. Although hypothyroidism does not directly cause hepatic fibrosis, it is related to the body's metabolic function. Hypothyroidism can slow down metabolism and lead to lipid accumulation in the liver, a condition known as hepatic steatosis or fatty liver. This condition can progress to steatohepatitis and eventually to hepatic fibrosis, characterized by scar tissue formation. If left untreated, fibrosis can advance to liver cirrhosis with severe complications. Hypothyroidism and fatty liver disease share common risk factors such as obesity, type 2 diabetes, and metabolic disorders. Proper treatment of hypothyroidism and early identification of fatty liver are crucial to prevent progression to fibrosis. It is essential for individuals with hypothyroidism to monitor their liver health and adopt a healthy lifestyle to avoid liver complications. Currently, there are enough studies that validate the association between hypothyroidism and the development of fatty liver with varying degrees of hepatic fibrosis. To identify clinical-demographic characteristics in patients with hypothyroidism evaluated in the endocrinology service and to identify the presence of fibrosis through non-invasive evaluation.

Materials and Patients: Patients with hypothyroidism aged 18 to 80 years of both sexes evaluated by the Endocrinology service with a complete medical record, who do not have risk of alcohol consumption, hepatotropic virus infections, or use of drugs causing hepatotoxicity.

Results: A review of 85 patients with complete medical records was carried out, and a correlation analysis with numerical variables in the SPSS system found that TSH levels do not correlate with the development of hepatic fibrosis, with a Pearson's $r = -0.074$ ($p = 0.519$), which is not significant.

Conclusions: In this case series, we report that there is no direct correlation between TSH levels and the development of hepatic fibrosis. However, it is important to highlight that metabolic comorbidities favor the development of fatty liver and, consequently, the possibility of developing hepatic fibrosis. In this series of cases, four cases of advanced fibrosis were found, so it is important to emphasize requesting complete studies in patients with hypothyroidism and to complement with imaging studies.

Ethics Statement: This is a risk-free study in which no intentional interventions nor modifications of the physiological, psychological, and social variables of the individuals participating in the study were performed.

Declaration of Interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101826

Acute Hepatitis A-Induced Autoimmune Hepatitis: A Case Report

Brenda N. Loza-Hernández[1],
Héctor M. Herrera-Martínez[1],
Erika G. Salgado-Parra[1], Arturo-Rodríguez Guajardo[1],
Violeta López-Gutierrez[2], Mauricio Old-Morales[3]

[1] *Gastroenterology department, Regional Hospital Lic. Adolfo López Mateos. ISSSTE, Mexico*
[2] *Pathological anatomy Regional Hospital Lic. Adolfo López Mateos. ISSSTE, Mexico*
[3] *Internal Medicine, General of Tlahuac Dra. Matilde Petra Montoya Lafruga, Mexico*

Introduction and objectives: Autoimmune hepatitis is a chronic immune-mediated inflammatory disease characterized by hypergammaglobulinemia, the presence of autoantibodies and histologically lymphoplasmacytic portal inflammation (interphase hepatitis).[1,2] Its pathogenesis is unknown and it occurs in 3% of cases associated with hepatitis A virus infection.[3,4]

Materials and Patients: 29-year-old woman with no relevant medical history. She presented with acute hepatitis due to virus A in

February 2024 (symptomatic clinical pattern with jaundice), corroborated by serology (IgM + antibodies) remission with supportive treatment in April. In May, she presented a new jaundice event, general malaise, and asthenia, so she underwent evaluation. On examination, jaundice and hepatomegaly were observed. Laboratory studies: BT 23.5mg/dL, BD 19.9mg/dL, ALT 534U/L, AST 827U/L, FA 128U/L; suggestive of acute hepatocellular injury (R factor=14). Hepatobiliary ultrasound rules out the obstruction and reports a diffuse increase in echogenicity; Serology: IgM HAV non-reactive, IgG HAV+ (ruling out a prolonged course of hepatitis A). Consumption of drugs, alcohol, and infections by other viruses (B, C, E, Epstein Barr, and HIV) are ruled out. The measurement of serum globulins reports hypergammaglobulinemia (IgG x 1.6 ULN); in addition, increased levels of antinuclear antibodies (ANAs, dilution 1:80) are detected by Immunofluorescence (IF); histopathological report of liver biopsy: chronic interface hepatitis, portal lymphoplasmacytic infiltrate and lobular damage, (fibrosis: F2); meeting all suggested criteria for the diagnosis of autoimmune hepatitis defined by the International Autoimmune Hepatitis Group Criteria.[5] Due to all of the above, it was decided to start treatment with parenteral steroid at a dose of 1 mg/kg/day (prednisone equivalent), with a good response to medical management, observing a gradual reduction in the levels of bilirubin, liver enzymes, and immunoglobulin G levels after the first 72 hours of medical treatment.

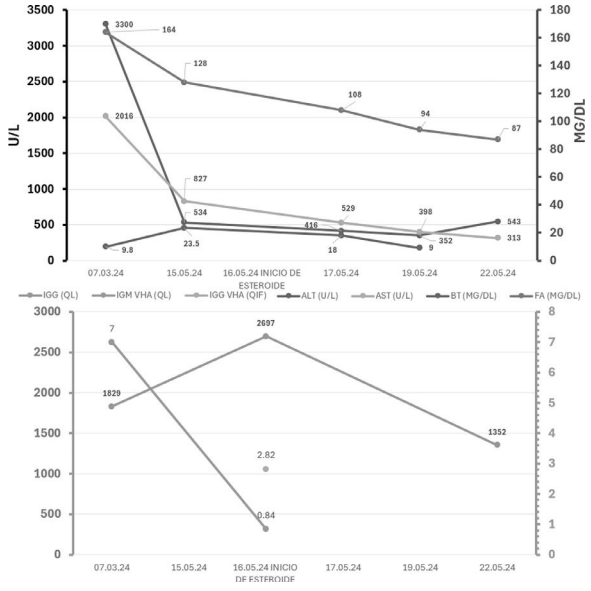
Results: Several triggers have been identified for the appearance of outbreaks of autoimmune hepatitis among them viral infections, which are reported in the literature. In rare cases, the hepatitis A virus can precede an outbreak of autoimmune hepatitis type 1. The treatment to induce immune remission is based on the administration of steroids, which usually guarantees a good response, as in the reported clinical case.

Conclusions: Hepatitis A virus infection is associated with altered immunotolerance with subsequent activation of lymphocytes and the production of specific antibodies that trigger molecular mimicry, which is directly involved in the pathophysiology of autoimmune hepatitis. Exposure to external factors is considered necessary to trigger the autoimmune reaction against hepatic structures.

Ethics statement: The procedures indicated above are under the General Health Law on Research in Human Beings regulations, as as well as the Declaration of Helsinki and subsequent amendments.

Conflict of interest statement: None.

Financing: Regional Hospital Lic. Adolfo López Mateos ISSSTE.



https://doi.org/10.1016/j.aohep.2025.101827

Cholestatic Injury Induced by Naproxen: A Rare Cause of NSAID-Induced Hepatotoxicity. Case Report.

Héctor M. Herrera-Martínez[1], Erika G. Salgado-Parra[1], Brenda N. Loza-Hernandez[1], Arturo Rodriguez-Guajardo[1], Byron I. Argoti-Mosquera[2]

[1] *Gastroenterology, Regional Hospital Licenciado Adolfo Lopez Mateos ISSSTE, Mexico*
[2] *Anatomic Pathology, Regional Hospital Licenciado Adolfo Lopez Mateos ISSSTE, Mexico*

Introduction and Objectives: Naproxen-induced liver injury is very rare (1-3 cases per 100,000 exposed individuals), typically occurring 1-6 weeks after ingestion[1]. The damage can manifest with or without immunoallergic features and varying degrees of hepatocellular injury and cholestasis[2]. We illustrate a case of a patient who developed cholestatic injury.

Materials and Patients: A 51-year-old man, with the only relevant history being self-prescribed ingestion of 220 mg gel capsules of naproxen sodium two weeks prior for post-exercise muscle pain, presented on 04/05/24 with asthenia, vague abdominal pain in the right hypochondrium, jaundice, acholia, and dark urine. He sought medical emergency services two days later, where pronounced mucocutaneous jaundice, hepatomegaly, and hepatodynia were observed. Paraclinical tests showed hyperbilirubinemia: total bilirubin (TB) elevated due to direct bilirubin (DB), marked elevation of alkaline phosphatase (AP) and gamma-glutamyl transferase (GGT), and slight elevation of aspartate aminotransferase (AST) and alanine aminotransferase (ALT) (R factor = 2 mixed). Hepatic and biliary tract ultrasound reported diffuse increased hepatic echogenicity, ruling out biliary tract obstruction. Serological testing for hepatotropic viruses and TORCH screen were negative, as was the serological profile for autoantibodies. A percutaneous ultrasound-guided liver biopsy was performed; biopsies demonstrated intrahepatic cholestasis, minimal and focal lobular and portal interface hepatitis, macrovesicular steatosis; special stains negative for hemosiderin and glycogen deposits, fibrosis and copper-bound proteins; suggested of drug induced liver damage **(Figure 1)**.

Results: Drug-induced liver injury is a diagnosis of exclusion, only to be suspected when major causes of liver damage have been ruled out. Naproxen, a non-steroidal anti-inflammatory drug (NSAID) derived from propionic acid, has been reported to cause hepatotoxicity phenotypes of hepatocellular injury (acute hepatitis) and cholestasis through metabolic, immunoallergic and idiosyncratic mechanisms[3]. In this patient, the toxicity was non-dose-dependent, with an acute presentation characterized by a predominant elevation of cholestatic markers. Only supportive measures were provided, with close clinical and biochemical monitoring to identify early signs of liver dysfunction. The patient showed favorable evolution towards remission, characterized by symptomatic improvement and a progressive decrease in cholestatic markers within the first few days **(Figure 2)**. After nine days of hospitalization, discharge was decided due to improvement, with a follow-up appointment for continued monitoring.

Conclusions: In suspected naproxen-induced cholestatic injury, a liver biopsy is not required for diagnosis[4] but is useful for understanding etiology, severity, extent, and prognosis. Discontinuing the causative agent is the first measure, and medical treatment should be directed solely by the clinical and biochemical evolution of the patient.

Ethical statement: The procedures performed comply with the regulations of the General Health Law on Research in Humans and the Declaration of Helsinki of 1975 and subsequent amendments. According to Article 5 of the General Health Law, this research

contributes to the prevention and control of health problems of interest. The research was conducted by health professionals under the supervision of competent health authorities.

Declaration of interests: None.

Funding: Hospital Regional Lic. Adolfo López Mateos ISSSTE.

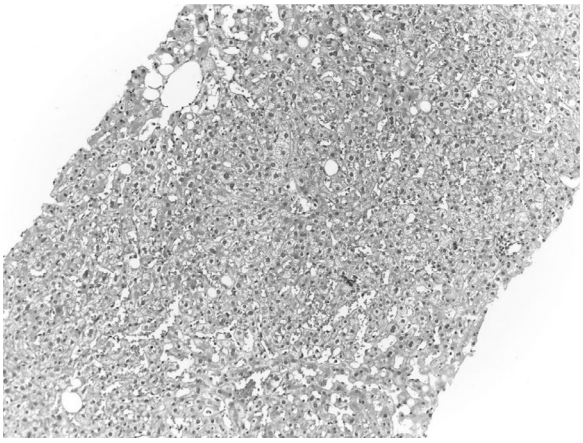


Figure 1.

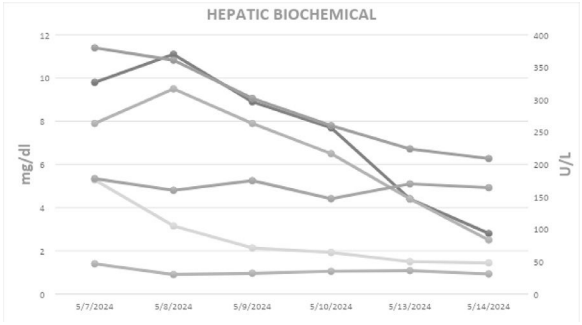


Figure 2.

https://doi.org/10.1016/j.aohep.2025.101828

Oxidative damage to lipids improves with Omega-5 fatty acid supplementation treatment in patients with severe alcoholic hepatitis

Moisés Martínez-Castillo[1], Jacqueline Cordova-Gallardo[2], Abigail Hernandez-Barragan[1], Marisela Hernández-Santillán[1], Diana Mungía-Ramos[2], Froylan Martínez-Sánchez[2], Daniel Santana-Vargas[1], Gabriela Gutiérrez-Reyes[1]

[1] *Liver, Pancreas, and Motility Laboratory (HIPAM), Experimental Medicine Research Unit, Faculty of Medicine, UNAM, General Hospital of Mexico, Dr. Eduardo Liceaga, Mexico*
[2] *Department of Surgery, Faculty of Medicine, UNAM, Mexico City, Mexico. Dr. Manuel Gea González General Hospital, Mexico City, Mexico*

Introduction and Objectives: Chronic and excessive alcohol consumption causes alcoholic liver disease (ALD). Alcoholic hepatitis (AH) is a severe clinical event that develops in patients with ALD and active alcohol consumption, and it has a high mortality rate within 30 days. Inflammation and redox imbalance play a crucial role in promoting the dysfunction of hepatocytes and reducing patient survival. Glucocorticoids have a transient beneficial effect in AH; however, it is necessary to understand the effect of antioxidant therapy in this pathology. To evaluate oxidative stress of lipids in patients with alcoholic hepatitis whose treatment included Omega-5

Materials and Patients: The randomized, double-blind clinical study included two groups of patients (men and women) with severe alcoholic hepatitis: 1) Patients treated with Prednisone (40 mg/day) + oral administration of Omega-5 (0.64 g/day) (n=20; 10% women and 90% men), and 2) Prednisone + Placebo group (n=20; 15% women, 85% men). Both groups received treatment for 28 days. Alcohol consumption was calculated in g/day. Biochemical and hematological laboratory test were performed. The MELD, Glasgow, ABIC, and Lille scales were evaluated, as well as serum levels of lipid oxidation through malondialdehyde (MDA) at 7, 14, and 28 days. The data was analyzed by Kruskal-Wallis, Mann-Whitney U and ANOVA statistical tests by SPSS v.22, significance of $p<0.05$.

Results: Both groups had similar characteristics; there was no difference in severity and alcohol consumption. After 7 days of treatment, both groups of patients showed similar levels of MDA, with the highest determination of MDA observed at this point. However, a reduction in serum MDA levels was observed at 14 days (5%) in the Omega-5 group; similarly, a 22% reduction in MDA was observed at 28 days. In contrast, the placebo group showed a continuous increase in MDA levels: 19.6% and 35% at 14 and 28 days, respectively. However, there were no statistical differences, indicating the need for further studies to evaluate changes in MDA levels over six months, as well as the effects of different doses and Omega-5supplementation time.

Conclusions: The oral administration of Omega-5 fatty acid in combination with prednisone can reduce oxidative stress of lipids at the systemic level. The use of antioxidant therapy as an adjuvant may improve the redox state and inflammation, which could decrease infectious events and, consequently, mortality in alcoholic hepatitis.

Ethical statement: Clinical trial registration at NIH (ClinicalTrials.gov Identifier: NCT03732586). The protocol was approved by the Ethics and Research Committees of the General Hospital Dr. Manuel Gea González and the Faculty of Medicine at UNAM. All participants provided written informed consent, and the study was conducted in accordance with the provisions of the Declaration of Helsinki

Declaration of interests: None.

Funding: Partial support from Distribuidora Biolife S.A. de C.V.

https://doi.org/10.1016/j.aohep.2025.101829

Differences in the progression of liver disease in male and female rats induced by TAA: considerations in the development of pharmacological therapies

Jesús Dorantes-Alvarez, Moisés Martínez-Castillo, Adrián Flores-Sánchez, Ángel García-López, Luz Castro-Hernández, Abigail Hernandez-Barragan, Marisela Hernández-Santillán, Gabriela Gutierrez-Reyes

Liver, Pancreas, and Motility Laboratory (HIPAM), Experimental Medicine Research Unit, Faculty of Medicine, UNAM, General Hospital of Mexico, Dr. Eduardo Liceaga, Mexico

Introduction and Objectives: Thioacetamide (TAA) is a hepatotoxic agent that causes fibrosis, cirrhosis, and cancer. Various doses and regimens of TAA have been tested in different murine models to validate hepatoprotective compounds. To date, only two studies have reported differences in TAA susceptibility according to sex in murine models. To compare the progression of liver disease in male and female Wistar rats induced by TAA.

Materials and Patients: Male and female Wistar rats (250 g) were grouped into two conditions: treated with thioacetamide (TAA) and saline solution (CT) intraperitoneally. TAA group (n=12, males=6, females=6): dose 200 mg/kg/3 times per week for 6 weeks; CT group (n=12, males=6, females=6): rats treated with saline solution. Water and food were provided *ad libitum*, and the animals were monitored daily, with weight recorded weekly. At the end of the treatment, euthanasia was performed with pentobarbital, and an exploratory laparotomy and liver recovery were conducted, with photographic records and macroscopic descriptions for each rat. Statistical analysis and mortality curve were performed using a two-way ANOVA and Log-Rank test.

Results: TAA administration caused weight loss in female rats during the first 2 weeks of treatment, but they showed recovery and stabilization from the third week onwards, while males showed progressive weight gain. Unexpectedly, the mortality rate in males by the third week was 66.6%, which remained until the sixth week, compared to 0% mortality in females and control animals. Macroscopic analysis of TAA-treated animals showed no alterations in adjacent organs but revealed evident morphological changes in liver tissue in males, such as heterogeneous dark brown coloration, irregular edges, and tissue nodulation. In contrast, female rats showed more discreet morphological changes of damage after 6 weeks of treatment.

Conclusions: The TAA model in Wistar rats demonstrated greater susceptibility to damage in male rats than in female rats. These findings should be considered in future studies, such as exploring new pharmacological therapies and/or biomarker development.

Ethical statement: The protocol was approved by the Ethics and Research Committees of the "Dr. Eduardo Liceaga" General Hospital of Mexico (CI/314/15) and the Faculty of Medicine of UNAM (DI 115/2015).

Declaration of interests: None.

Funding: Partial funding was received by Medifarma S.A. de C.V

https://doi.org/10.1016/j.aohep.2025.101830

Regression of hepatic fibrosis due to hepatitis C virus (HCV) infection and its associated factors in Mexican population treated with direct-acting antiviral agents. A preliminary study.

Raúl Ramírez-Marcial, Scherezada M. Mejía-Loza, María del Rosario Herrero-Maceda, Eumir Israel Juárez Valdes

Gastroenterology Department, Juarez Hospital, México

Introduction and Objectives: After achieving a sustained viral response with AAD, regression of fibrosis is not always achieved. Studies have been conducted to determine factors that may be involved such as age, BMI, diabetes, dyslipidemia, and steatosis, among others. OBJECTIVE: To determine the factors associated with regression of hepatic fibrosis in patients treated with AAD at the Juarez Hospital in Mexico.

Materials and Patients: A retrospective, observational, cross-sectional study was conducted from January 2019 to March 2024 on patients diagnosed with hepatitis C virus infection. The following inclusion criteria were considered: Patients aged 18 or more who underwent treatment with sofosbuvir/velpatasvir 400mg/100mg for 12 weeks or glecaprevir/pibrentasvir 100mg/40mg for 8 weeks and had significant fibrosis (>F2) determined by FIB-4 score and APRI score before the treatment. Exclusion criteria: patients under 18 years of age, co-infection with HBV, and/or incomplete treatment. Patients were divided into 4 groups: GROUP 1: patients without hepatic cirrhosis and without associated comorbidities, GROUP 2: patients without hepatic cirrhosis but with associated comorbidities, GROUP 3: patients with hepatic cirrhosis without associated comorbidities, and GROUP 4: patients with hepatic cirrhosis and associated comorbidities. For each group, FIB-4 score and APRI score were measured at the beginning and after treatment to evaluate differences in fibrosis regression between groups.

Results: 51 patients were recruited, of whom: 5 patients were part of Group 1. From this group, 40% achieved a decrease in stage APRI and FIB-4 stage after treatment. Group 2: 11 patients, 45% decreased one stage of APRI and FIB-4 score. Group 3: 19 patients, no patient achieved a decrease in APRI and FIB-4 score after treatment. Group 4: 16 patients, only 18.74% achieved a decrease in both APRI and FIB-4 stages after treatment, and the 25% of this group achieved a decrease just in APRI stage..

Conclusions: In this preliminary study, a major percentage of patients with and without hepatic cirrhosis plus another associated comorbidity (diabetes, hypertension, dyslipidemia, and/or hepatic steatosis) did not achieve a decrease in APRI and FIB-4 stages after treatment. Therefore, an analysis of variances should be performed to determine which of these factors impact fibrosis regression, and the sample size should be expanded to achieve significant results.

Ethical statement: This research is clinical, observational, and retrospective. Information was obtained from the direct review of clinical records. According to the Mexican General Health Law in its article number 17, this research is classified as type 1: Without risk.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101831

DILI and Dress syndrome secondary to treatment with DoTbal, in a patient with tuberculosis at the rural hospital from Papantla – IMSS Bienestar

Yajzeel Estevez-Lopez[1], Sury Z. Palma-Motte[1], Raquel Ramirez-Carrillo[1], Maria F. Reyes-Romero[2], Jose E. Lopez-Ruiz[3], Maria L. Avila-Guerra[4], Kristell I. Perez-Ramirez[5], Alberto Rodríguez-Gallardo[5], Andrea I. García-Ramírez[5]

[1] *Internal Medicine, Hospital Pdte. Adolfo Ruiz Cortines. IMSS, Mexico*
[2] *Autonomous University of Tamaulipas, Mexico*
[3] *University of the Valley of Mexico*
[4] *Autonomous University of Tlaxcala, Mexico*
[5] *Veracruzana University, Mexico*

Introduction and Objectives: The DRESS corresponds to dermatological manifestations associated with drugs and DILI corresponds to liver injury caused by drugs. Antiphymics are part of both entities, however, it is not common to find the coexistence of both syndromes and their management is even less described in a rural hospital.

Materials and Patients: This is a male patient who is arrived from his community because he has presented dermal lesions that began in April 2024. He reports that he has been under treatment with dotbal since January 2024 in the intensive phase and in March he continue in the support phase. He also lives with diabetes being treated with pioglitazone at a dose of 15 mg every 24 hours started this drug in January 2024. The lesions began as erythematous, scaly lesions in the lower extremities and subsequently spread throughout the body's economy, covering more than 90%, there is limited mobilization in flexion sites as well as with limitation to the oral feeding, has

presented fever higher than 39°°C and is accompanied by itching predominantly in the extremities. For this reason we decided to carry out a diagnostic approach in our unit, where complementary studies are carried out that included BHC, QS, ES, PFH, these being the only resources our unit has.

Results: We evaluated a patient who attended a rural unit due to generalized erythema, fever and scaly lesions that occurred in the first 90 days after starting treatment with Dotbal, and was also accompanied by pruritus, fever and jaundice with data compatible with febrile erythroderma or DRESS syndrome (Drug Reaction with Eosinophilia and systemic symptoms), once this dermatological diagnosis was established, we proceeded to evaluate laboratory studies and evidenced data of DILI (Drug Induced Liver Injury) with a hepatocellular pattern, elevated transaminases more than 10 times their normal value, complying 6 points of RUCAM criteria for DILI and with an R factor of 9 points. During his hospitalization he progressed to acute kidney injury and medications were immediately discontinued. Hemodynamic support treatment was given and he is currently in the recovery phase. Exposure to isoniazid, a drug that has been described as a producer of DRESS and DILI, was established as the causal agent.

Conclusions: We present the case of care in a rural hospital, where resources are low. The importance corresponds to identifying the coexistence of DRESS and DILI, this action allows timely management and avoids serious complications of these diseases such as shock and acute liver failure.

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.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

IMAGE 1:

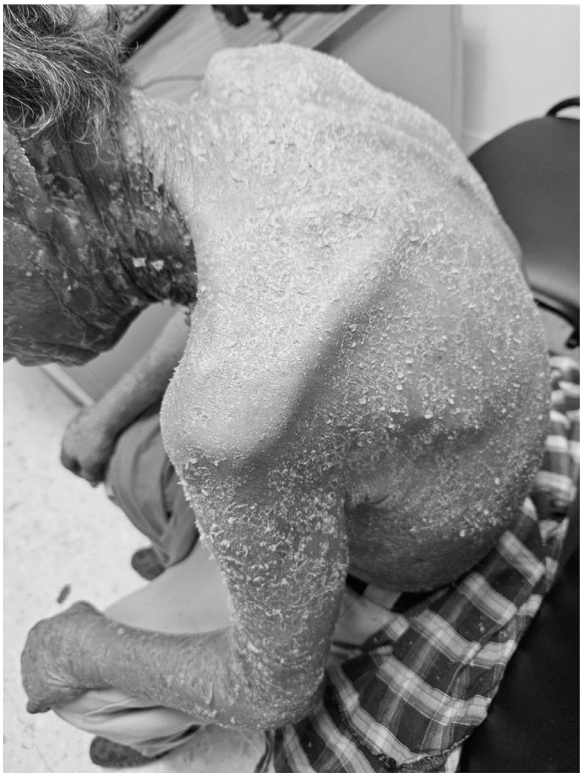


Table 1
Laboratory values before and three months after treatment

Laboratories	Start Treatment	Three months after treatment
Hemoglobine	11g/dl	10.5g/dl
Platelets	490,000	150,000
Leukocytes	6900	5300
Total bilirubin	0.8 mg/dl	3mg/dl
Direct bilirubin	0.5 mg/dl	2.5mg/dl
Indirect Bilirubin	0.3 mg/dl	0.5mg/dl
ALT	9 UI	399 UI
AST	10 UI	203 UI
ALBUMIN	3.0g/dl	1.7 g/dl
ALKALINE PHOSPHATASE	218UI	369UI
GGT	102UI	155UI
DHL	359U	377U
BUN	6.8mg/dl	14 mg/dl
UREA	14 mg/dl	30 mg/dl
CREATININE	0.4 mg/dl	1.2 mg/dl

https://doi.org/10.1016/j.aohep.2025.101832

Adverse effects of the use of terlipressin infusion compared to boluses in patients with liver cirrhosis and variceal hemorrhage. TERMEX study.

Luis R. Antuna-Villaseñor, Germán A. Roman-Lugo, Jose Pérez-Sánchez, Alexis E. Chavarín-Meza, Yvonne Tadeo-Jiménez, Rosalba Moreno-Alcántar, Aleida Bautista-Santos

Specialties Hospital, National Medical Center Siglo XXI. IMSS, Mexico

Introduction and Objectives: Cirrhosis is a worldwide health problem as it is a leading cause of mortality. The development of complications in cirrhosis is directly related to the presence of portal hypertension. The risk of annual variceal hemorrhage is 5% for small varices and 15% for large varices. Terlipressin represents a useful drug for this group of patients; classically it has been used in bolus but recent studies have shown that its use in infusion may be superior in bleeding control and with fewer adverse effects. The aim of this study is to define whether there are fewer adverse effects with the use of terlipressin infusion compared to bolus.

Materials and Patients: We include patients in the care of the gastroenterology department from July to December 2023 who met the inclusion criteria were included: >18 years, diagnosed with liver cirrhosis and variceal hemorrhage, who had received terlipressin infusion or bolus. Statistical analysis: descriptive statistics, frequencies and percentages were calculated with Student's t and Mann-Whitney U according to the distribution of the variables; Student's t was used to show differences between groups and chi-square to determine the risk of adverse events with bolus respect terlipressin infusion. Wilcoxon test was applied to show differences between groups.

Results: 58 patients were included, all received endoscopic treatment in addition to terlipressin: 16 patients received infusion (27.6%) and 42 (77.4%) received terlipressin in bolus. Female gender predominated with 30 (51.7%), mean age was 55.8 ±10.93 years; the most frequent etiologies of liver cirrhosis were: (MASLD) steatotic liver disease associated with metabolic dysfunction 19 (32.8%), primary biliary cholangitis 12 (20.7%) and MASLD with significant alcohol consume (MetALD) 8 (13.8%). The median MELD was 16 (12-20) points, and the median Child-Pugh Turcotte score was 7 (6-9). Rebleeding occurred in 8 (13.8%) patients and one patient required rescue TIPS (transjugular portosystemic shunt). The percentage of adverse effects was 27.6% (n=16) and therapy was changed to

octreotide in 15 (25.9%) patients. The bolus group had 31% (n=13) adverse effects compared to the infusion group where only 3 (18%). The main adverse effect was abdominal pain in 15.5% (n=9). Mortality was 6.9% in our study(n=4).

Conclusions: Adverse effects of terlipressin infusion compared to bolus had no significant difference in the group analyzed. However, there is a tendency in favor of infusion since only 3 patients had adverse effects, we consider that by increasing the sample size, there could be difference in favor of the infusion group.

Ethical declaration: The authors declare that the TERMEX study was submitted to hospital ethics committees, has not been previously published and its publication is authorized by all authors. All of them participated in its preparation to a sufficient extent to be responsible for its content, which is true, not duplicated, without fraud or fabrication.

Declaration of Interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1. Characteristics of patients with cirrhosis and variceal bleeding.

	n= 58
Women, No. (%)	30 (51)
Age, years, mean, SD.	55.8 (±10.93)
BMI kg/m, mean, SD	25.8 (±4.19)
Child Pugh median, percentiles	7(6-9)
MELD median, percentiles	16 (12-20)
Diabetes mellitus (%)	24 (41.4)
Etiology (%)	
MASLD	19(32.8)
Primary biliary cholangitis	12(20.7)
MetALD	8(13.8)
ALD	5 (8.6)
Chronic HCV infection	4 (6.9)
Other	11 (17)
Total bilirubin µmol/L median, percentiles	1.61 (0.96-2.06)
Sodium mEq/L median, percentiles	137 (136-139)
Albumin g/dL, median, percentiles	2.7 (2.15-3.2)
INR median, percentiles	1.41(1.25-1.63)
Creatinine mg/dL, median, percentiles	0.86 (0.70-1.13)
Smoking (%)	24 (41.4)

SD=standard deviation. BMI=body mass index MASLD: metabolic dysfunction-associated steatotic liver disease ALD: alcoholic liver disease MetALD: MASLD plus heavy alcohol consumption.

https://doi.org/10.1016/j.aohep.2025.101833

Liver donor with hepatitis c virus false positive in negative recipient. A case report

Yenni J. Cruz-Ramírez, Reina S. Velez-Ramírez, Fancisco I García-Juarez, Norma N. Parra-Holguin

Mexican Society of Gastroenterology & Mexican Association of Hepatology, México

Introduction and Objectives: The growing disparity that exists between the number of available donors and patients on the waiting list, transplant centers have presented initiatives to take into account patients diagnosed with hepatitis C virus (HCV), the objective of liver transplantation being the extension of the patient's life.

Materials and Patients: 62-year-old female patient, with a diagnosis of liver cirrhosis diagnosed in 2012, secondary to primary biliary cholangitis (PBC). Evaluated in August 2023, a clinical approach was performed identifying uncontrolled liver cirrhosis, reporting in the last year she had three episodes of hepatic encephalopathy West Haven (WH) II and III, plus two events of upper gastrointestinal bleeding secondary to grade III esophageal varices performing 3-bundle variceal ligation, prognostic scales were calculated, Child Pugh B 8 points, MELD NA 15 POINTS, biochemistry: TORCH negative, profile for non-reactive hepatitis A, B and C viruses, non-reactive human immunodeficiency virus (HIV), positive PPD purified protein derivative skin test, evaluated by infectious disease who reports that he has latent tuberculosis with a plan to start treatment. Liver sonographic ultrasound (USG) was performed, reporting chronic liver disease, ascites, no portal hypertension, magnetic resonance imaging (MRI) of the liver: reported diffuse chronic liver disease, no evidence of tumor activity, ascites, decompensated portal hypertension, panendoscopy reported Dagradi III esophageal varices plus ligation of 3 variceal bundles. The liver transplant protocol is completed and presented to the liver transplant (LT) committee, referring the patient to be enlisted to be a liver recipient.

Results: Anti HCV 1.40 S/40 CO= REACTIVE Viral load of hepatitis c virus: RNA not detected.

Conclusions: In the following case, the donor presents positive antibodies for hepatitis C virus, a viral load is done reporting undetectable RNA, considering a false positive result, it is emphasized that if positive, there is no contraindication for the transplant, since previous studies have shown results similar to those of organ transplantation from HCV negative donors.

Ethics statement: Protection of people and animals: The authors declare that no experiments have been carried out on humans or animals for this research. **Data confidentiality**: The authors declare that no patient data appear in this article. **Right to privacy and informed** consent: The authors declare that no patient data appears in this article.

Funding This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of interests: None.

https://doi.org/10.1016/j.aohep.2025.101834

Evaluation of oxidative stress according to the pattern of alcohol consumption and in alcoholic liver disease.

Adrián Flores-Sánchez[1], Abigail Hernández-Barragán[1], Daniela Colector-Sesatti[1], Andrea Garcia-Avalos[1], Moisés Martínez-Castillo[1], Marisela Hernández-Santillan[1], Jaqueline Córdova-Gallardo[3], José L. Pérez-Hernandez[2], Fátima Higuera-De la Tijera[2], Gabriela Gutiérrez-Reyes[1]

[1] *Liver, Pancreas, and Motility Laboratory (HIPAM), Experimental Medicine Research Unit, Faculty of Medicine, UNAM, General Hospital of Mexico, Dr. Eduardo Liceaga, Mexico*
[2] *General Hospital of México Dr. Eduardo Liceaga, Mexico*
[3] *Dr. Manuel Gea González General Hospital, Mexico City, Mexico*

Introduction and Objectives: Alcohol and its metabolites induce damage in the liver, such as: activation of the immune response and oxidative stress. Objective: To evaluate the redox state through markers of oxidative stress in patterns of alcohol consumption and alcohol-related liver disease (ALD).

Materials and Patients: A cross-sectional and multicenter study was conducted, with the inclusion of individuals displaying various patterns of alcohol consumption. Participants were categorized based on responses to questionnaires (AUDIT and DSM-IV), as well as an individualized survey, along with clinical and biochemical data. Six distinct groups were established: Risk (RI), Abuse (Ab), Alcoholism (OH), as well as ALD: alcohol liver cirrhosis (CiOH) and alcoholic hepatitis (HA), in addition to a control group (CT). Stress markers, including reduced glutathione (GSH) and oxidized glutathione (GSSG), were assessed in peripheral blood and we calculated GSH/GSSG ratio, lipid peroxidation via malondialdehyde formation, and protein oxidized by carbonylated protein were quantified. Statistical analysis

was performed utilizing the Mann-Whitney U test, with statistical significance set at $p<0.05$.

Results: The subjects were classified into RI (22), Ab (4), OH (28), CiOH (76), HA (16), and CT (100). The GSH was found to decrease significantly in the EHA groups vs CT. In contrast, GSSG increased in the RI, Ab, OH, and CiOH groups compared to CT, indicating that alcohol consumption favors an oxidizing state, confirmed by the negative GSH/GSSG ratio. Additionally, the GSH/GSSG ratio in the OH group showed a greater imbalance than in patients with EHA. On the other hand, protein oxidation increased in EHA, with high levels of carbonylated proteins observed in OH, CiOH, and HA compared to CT, Ab, and RI. Furthermore, lipoperoxidation measured by Malondialdehyde showed increased levels of OH and CiOH compared to the other study groups.

Conclusions: Excessive alcohol consumption, with or without liver damage, promotes the oxidation of proteins and lipids. Additionally, alcohol favors the oxidized form of the main endogenous antioxidant, GSH. Therefore, it is necessary to control the redox balance through antioxidant treatment.

Ethical statement: The protocol was approved by the Ethics and Research commissions of the General Hospital of México "Dr. Eduardo Liceaga" (DI/16/107/03/031) and from the UNAM, Facultad de medicina (FM/DI/135/2017).

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101835

Prevalence and evaluation of sleep disturbances in Mexican patients with hepatic cirrhosis through the application of the Pittsburgh sleep questionnaire

María I. Badillo-Vázquez[1], Raúl Contreras-Omaña[2]

[1] *School of Medicine, Autonomous University of the State of Hidalgo, Mexico*
[2] *Center for Study and Research of Hepatic and Toxicological Diseases (CEIHET), Hidalgo, Mexico*

Introduction and Objectives: According to the literature, patients with cirrhosis have a high prevalence of sleep disturbances, which increase as the disease progresses. There are few studies conducted in this patient group, with a small number of samples, reflecting alterations in sleep quality and rest. The Pittsburgh Sleep Quality Index (PSQI) is a tool that allows us to evaluate sleep quality and the level of disturbances it may present. To assess the type and prevalence of sleep disturbances in a Mexican group of patients with cirrhosis through the application of the Pittsburgh questionnaire.

Materials and Patients: A prospective, cross-sectional, and epidemiological study was conducted with 300 individuals, of whom 266 did not have hepatic diseases and 74 were diagnosed with cirrhosis.

The Pittsburgh questionnaire was administered to them, which consists of 7 components that generate a total score. Total scores were interpreted as follows: 1-4 without sleep disturbances, 5-7 with mild disturbance, 8-14 with moderate disturbance, and 15 or more indicating severe disturbance.

Results were compared using Odds Ratio (OR) to assess the effect.

Results: Of the individuals evaluated, 74 (24.66%) were diagnosed with cirrhosis, with 42 women (56%) and 32 men (43.24%). The remaining 226 participants (75.33%) did not have liver diseases, with 150 women (66.3%) and 75 men (33.1%). When comparing the total scores, it was observed that 57 people without sleep disturbances, 18 (31.57%) were in the cirrhosis group, while 39 (68.42%) were not. Additionally, of the 102 individuals with mild alterations, 20 (19.60%) were in the cirrhosis group and 82 (80.39%) were not. Of the 131 individuals with moderate alterations, 32 (24.42%) had cirrhosis and 99 (75.57%) did not. Finally, of the 10 individuals with severe alterations, 4 (40%) had cirrhosis and 6 (60%) did not. The calculation of the Odds Ratio was 1.09, indicating that patients with cirrhosis had a similar risk of sleep disturbances as those without cirrhosis.

Conclusions: In our study, it seems to demonstrate that contrary to previous reports in the literature, no difference was found in the prevalence of sleep disturbances between our population without cirrhosis and patients with cirrhosis.

This study is the first to apply this validated and translated questionnaire in Spanish to a Mexican population of patients with cirrhosis and healthy individuals to evaluate their sleep quality and the first to have a significant sample.

Ethical statement: Patients' identity was protected. Consentment was obtained directly from patients.

Declaration of interests: None

Funding: CEIHET - Center for the Study and Research of Hepatic and Toxicological Diseases.

https://doi.org/10.1016/j.aohep.2025.101836

Autoimmune hepatitis developed after acute liver failure due to hepatitis A. A case-report

Reina S. Velez-Ramirez[1],
Yenni Joseline Cruz-Ramirez[2],
Francisco I. Garcia-Juarez[2]

[1] *Mexican Society of Gastroenterology, México*
[2] *Mexican Association of Hepatology, México*

Introduction and Objectives: In this report, the relationship between Hepatitis A Virus (HAV) and Autoimmune Hepatitis (HAI) will be analyzed, demonstrating the presence of HAI after an acute HAV infection, highlighting the time between diagnoses and seroconversion with antibodies, as well as clinical characteristics and evolution.

Materials and Patients: 30-year-old male patient, with no personal pathological history who presents with general malaise, fever and jaundice. The clinical examination was within normal limits except for slight jaundice. The admission biochemical analyzes were as follows: Hb 14.2 g/dL, Leukocytes 8,550 /mm3, Total bilirubin 9.5 mg/dL Direct bilirubin 2.2 mg/, ALT 6155 UI/L, AST 3940 UI/L, Alkaline Phosphatase 1 15U /L. and Prothrombin time 51.0 seconds; INR 4.95. a viral hepatitis profile with positive anti-HAV IgM antibodies and an imaging examination of the liver and bile ducts with inflammatory changes. The diagnosis of hepatitis A and acute liver failure was made.

The patient suffers rapid clinical and biochemical deterioration, with multiple organ failure requiring admission to an intensive care unit and advanced life management area due to acute respiratory failure syndrome, general support stockings and three sessions of single-step albumin dialysis were indicated. He showed stabilization and improvement in his general condition.

Results: 27 days after initial evaluation, fatigue and fever of unknown origin were present. Liver function test with BT 25.58 mg/dl, BD 17.55.0 mg/dl, ALT 38 U/l, AST 100 U/l and ALP 105 U/l and INR 1.5. He presented positive antinuclear antibodies with a cytoplasmic pattern with a titer of 1:80, SMOOTH MUSCLE 3+ intermediate filament pattern. DILUTION 1:80 immunoglobulin G 3260 mg/dl. A liver biopsy was performed, which showed changes compatible with autoimmune hepatitis (fig. 1). In the previous context, the diagnosis of autoimmune hepatitis triggered by HAV was made and treatment was started with prednisone 50 mg every 24 hours PO in a reduced dose of azathioprine 50 mg every 24 hours.

At one month of follow-up, PFH was found to have decreased and the established treatment continued.

Conclusions: Atypical courses of hepatitis A virus infection have a global prevalence of 7(1). Some case reports of HAI indicate that viruses that cause acute hepatitis, such as hepatitis A virus (HAV), hepatitis of hepatitis B (HBV) and Epstein-Barr virus, can trigger HAY (2) studies suggest a deficiency of suppressor T cells specific for the asialoglycoprotein receptor that would be involved in immunological abnormalities, including antigen presentations, were involved in the appearance of HAI after acute HA.(3)

Failure to normalize liver tests after OAB should raise concern for HAI, particularly in those with seroconversion to SMA positivity. (4) always having cholestasis that could arise after an acute episode of HAV infection.

Ethics statement: Protection of people and animals the authors declare that no experiments have been carried out on humans or animals for this research.

Data confidentiality the authors declare that no patient data appear in this article. Right to privacy and informed consent the authors declare that no patient data appears in this article.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of interests: None.

https://doi.org/10.1016/j.aohep.2025.101837

Correlation in estimating the degree of liver fibrosis using elastography and biochemical predictors of fibrosis, APRI and FIB-4 in a Mexican population from the National Medical Center of the West with chronic Hepatitis C Virus (HCV) infection.

Gerardo González-Macedo,
Christian Jaramillo-Buendía,
Jose Francisco Aguayo-Villaseñor,
Manuel Osiris Hernández-Ceballos,
Álvaro Ismael Calleros-Camarena

Gastroenterology Service, High Specialty Medical Unit, National Medical Center of the West (HEU NMCW), Guadalajara, Jalisco, Mexico

Introduction and Objectives: Liver fibrosis is common in HCV infection, leading to clinically significant portal hypertension and decompensated cirrhosis with high morbidity and mortality. Transient elastography is a validated study for the measurement of liver fibrosis with good predictive value, but it is not available in most public institutions. There are non-invasive measurement methods for fibrosis available, such as the FIB-4 and APRI indices. To analyze the correlation between the degree of liver fibrosis measured by elastography with the APRI and FIB-4 indices in a Mexican population with chronic HCV infection.

Materials and Patients: Cross-sectional, analytical, retrospective diagnostic test study. Information was obtained from the clinical records of HCV patients treated during the period from January 2017 to January 2019 in the Gastroenterology service of UMAE CMNO.

Results: A total of 467 patients were retrospectively analyzed; 281 met the inclusion criteria, 66.2% female and 32.8% male. Median age was 60 years, with an interquartile range of 16 years. Median weight was 62.5 kg, BMI of 24.8. The predominant HCV genotype was 1a, corresponding to 64.5%, genotype 1b was 24.7%. Genotypes 2, 3, and 4 represented 5.4%, 4.6%, and 0.8% of the population respectively. 2.2% had HIV co-infection and 0.7% had hepatitis B co-infection. 58% had a fibrosis grade of F4, 17.1%: F1, 12.1%: F2, 11%: F3, and 1.8% without evidence of fibrosis (F0) according to the elastography results. There were no statistically significant differences between male and female participants (p=0.131). Sex did not impact the development of liver fibrosis. Spearman's correlation between APRI and FIB-4 indices with liver elastography was evaluated (Figure 1). A Rho value of 0.56 and a p-value < 0.001 was obtained for the APRI index and elastography. Similarly, the FIB-4 index also obtained a Rho value of 0.56 and a p-value < 0.001 with respect to elastography. For the APRI index, the calculated cutoff point for each ROC curve was the same (0.75), regardless of the degree of fibrosis. It was considered a good predictor of fibrosis. For the FIB-4 index, the calculated cutoff points matched in the subgroups of F0–F2 with an optimal cutoff value of 2.645, and in the subgroups of F3-F4 with an optimal cutoff point of 2.665. This suggests that this index is a good marker for distinguishing between grade F1 and advanced fibrosis grades (F3-F4) (Table 1).

Conclusions: The APRI and FIB-4 indices are reliable and accurate predictors for estimating the degree of liver fibrosis in patients with chronic HCV infection, with a statistically significant correlation of the degree of liver fibrosis between the predictive indices and liver elastography.

Ethics Statement: Complies with the regulations in health research according to the General Health Law and the Declaration of Helsinki, respecting the principles of beneficence, non-maleficence, justice, respect, and autonomy.

Declaration of Interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Figure 1 Correlations between the APRI and FIB-4 indices and liver elastography.

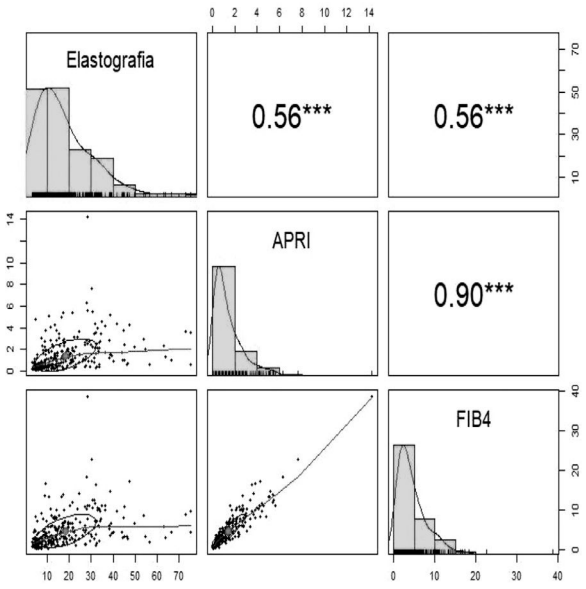


Table 1
Cutoff points obtained for each grade of fibrosis (METAVIR classification)

Cutoffs points.				
Índice	*F0 vs. F1-F4*	*F0-F1 vs. F2-F4*	*F0-F2 vs. F3-F4*	*F0-F3 vs. F4*
APRI	0.75	0.75	0.75	0.75
FIB-4	2.645	2.645	2.665	2.665

https://doi.org/10.1016/j.aohep.2025.101838

Assessment of Cardiovascular Risk in Patients with Fatty Liver: Impact of Hepatic Cirrhosis

Arely Gayosso-Godinez, Raúl Contreras-Omaña

Center for Study and Research of Hepatic and Toxicological Diseases (CEIHET), Hidalgo, Mexico

Introduction and Objectives: According to the literature, cardiovascular events have been described as the leading cause of death in patients with fatty liver associated with metabolic dysfunction (MASLD). The main objective of this study is to assess and compare cardiovascular risk in two groups of patients: those diagnosed with fatty liver without cirrhosis and those with liver cirrhosis attributable to fatty liver. The aim is to determine if there is a significant difference in cardiovascular risk between these groups, identify the most relevant cardiovascular risk factors, and explore possible associations between progression to liver cirrhosis and increased cardiovascular risk.

Materials and Patients: A retrospective cross-sectional study was conducted from 2020 to 2024, involving a total of 289 patients, of whom 165 were diagnosed with MASLD without cirrhosis and 125 patients were diagnosed with cirrhosis associated with fatty liver. In the first group, the grade of hepatic steatosis was determined by imaging methods, and cardiovascular risk assessment scales such as GLOBORISK and PREVENT were applied to both groups, conducting a comparative analysis between these study groups. Additionally, variables such as sex, age, weight, height, obesity, sedentary lifestyle, glomerular filtration rate, smoking, diabetes, hypertension, total cholesterol levels, LDL, HDL, and triglyceride levels were evaluated.

Results: In the present study, 165 patients diagnosed with MASLD were evaluated using two cardiovascular assessment scales: PREVENT and GLOBORISK. According to the PREVENT scale, 86 patients (52.1%) exhibited a low cardiovascular risk, with 50.9% also showing mild hepatic steatosis confirmed by imaging studies. Using the GLOBORISK scale, it was determined that 117 patients (70.9%) had a low level of cardiovascular risk. On the other hand, a total of 124 patients with hepatic cirrhosis associated with fatty liver were included. According to the evaluation using the PREVENT scale, it was found that 64 patients (51.6%) had an intermediate cardiovascular risk, and according to the GLOBORISK model, 45 patients (36.2%) were classified with a moderate risk. When contrasting between the group of patients with cirrhosis and those with only fatty liver, the first group has a 3.6 times higher likelihood (OR 3.6) of presenting a moderate to severe cardiovascular risk compared to those without cirrhosis (P=0.00).

Conclusions: This study demonstrates that patients with cirrhosis associated with fatty liver have a 3.6 times higher prevalence of moderate to severe cardiovascular risk compared to patients without cirrhosis but with fatty liver. This suggests a need for closer monitoring of cardiovascular events alongside liver disease monitoring.

Ethical statement: The informed consent for the use of personal data was obtained from all study participants.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101839

Autoinmne hepatitis associated with hepatitis A virus infection, a case report

J. Ugalde-Zanella, L. Martínez-Martinez, M. Saldaña-Barnard, L. Beltran-Rascon

Internal Medicine, Ignacio Morones Prieto Central Hospital, Mexico

Introduction and Objectives: Hepatitis due to Hepatitis A Virus (HAV) is an entity that has been described as a causal factor of HAI, the prevalence and course of which is reported to be 1% - 3%. The diagnosis is associated with AIH is usually made in the acute event; a time criterion is not well defined.

Materials and Patients: 41-year-old male, with a history of DM2, systemic arterial hypertension and rheumatoid arthritis, onset in June 2023 with fever and gastrointestinal symptoms (vomiting, nausea and stools with reduced consistency), associated with jaundice of 1 week after his symptoms. Diagnosis of Acute Liver Injury due to HAV is confirmed on 06/22/23, with Ac. IgM VHA (8.7 +), Transaminases >2000U/L and INR 2.4; support therapy and symptom control began with partial resolution on 09/2023. He subsequently reentered the emergency area 11/2023 with jaundice, abdominal pain, and excessive fatigue. Acute Hepatitis was again determined with transaminases >2000 U/L, a 3F CT scan was performed and was normal, and the approach for autism was complemented with the following panel: negative ANAS and positive ASMAs 1:100, IgG 2780. Liver biopsy confirmed AIH. morphological changes compatible with autoimmune hepatitis. Treatment was started with Prednisone 0.5mg/kg, with subsequent maintenance based on Azathioprine, achieving biochemical remission 04/2024

Results: It has been postulated that HAV infection, as occurs with other viral infections, may be a triggering factor for latent AIH in susceptible individuals, considering multiple pathways of inflammation and immunotolerance defects. Most of the reported cases are diagnosed 5 months after the acute event HAV; in the case of our patient, it was 6 months after the acute event, completing a score of 7 points by the simplified system. In case reports of OAB-associated AIH, treatment has been initially established with oral Prednisone 0.5 to 1 mg/kg day, with maintenance of Azathioprine or Mycophenolate Mofetil with comparable response rates. The goal of treatment is biochemical and histological remission with the goal of avoiding progression of liver damage and mortality.

Conclusions: Viral infections have been associated with the development of autoimmune hepatitis, HAV in up to 3% based on case reports due to the rarity of the presentation. The pathophysiology of presentation triggered by OAB is poorly defined. Biopsy and differential diagnoses are the mainstay in the approach to these patients.

Ethics statement: the ethics statutes dictated by the scientific committee of the Ignacio Morones Prieto Central Hospital were followed.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101840

Acute-on-chronic liver failure due to hepatitis A infection in a patient with Metabolic Dysfunction-Associated Fatty Liver Disease. Case report.

Omar Ocampo-Espinosa, Mariana Jacinto-Ruiz

Internal Medicine, Zone General Hospital 50, SLP, México

Introduction and Objectives: Metabolic Dysfunction-Associated Fatty Liver Disease (MAFLD) has steadily increased its prevalence, making it the most common liver disease in Western industrialized nations, affecting one billion people worldwide. Hepatitis A is a necro-inflammatory liver disease caused by the hepatitis A virus (HAV). Less than 1% develop acute liver failure, where 30% will require a liver transplant and 70% will require supportive therapy until recovery. Hepatic steatosis is recognized as a risk factor for

developing the severe variant of HAV disease. We present this case of acute liver failure due to HAV in a patient with MAFLD.

Materials and Patients: 37-year-old male with a history of systemic arterial hypertension and morbid obesity. He presented headache, fever, asthenia, adynamia, choluria and acholia with a positive viral profile for hepatitis A virus (IgM +, IgG +). Two days later, with an attack on general condition, in addition to neurological deficit with gradual deterioration of alertness. Simple computed axial tomography of the skull without alterations. Hepatosplenic Doppler ultrasound: Chronic diffuse liver disease, Doppler criteria for grade I venous restrictive liver disease, splenomegaly. He presented multiple organ failure due to coagulopathy, acute liver failure and kidney injury and was sent to a third-level unit for Molecular Adsorbent Recirculating System (MARS) therapy.

Results: It was classified as grade 3B acute-on-chronic liver failure without being a candidate for transplant. During his hospitalization, MARS therapy was performed on two occasions: single-session hemodialysis, hypertonic solution for cerebral edema, and treatment for hyperammonemia. He was started on carvedilol, vitamin E and lipophilic statin. Without organ failure, creatinine levels normalized, mild transaminasemia persisted and as well as hyperbilirubinemia at the expense of direct bilirubin. Continuing follow-up by external consultation.

Conclusions: The complex interaction between hepatic steatosis, hepatitis A infection and acute-on-chronic liver failure is highlighted, noting the importance of comprehensive evaluation and multidisciplinary management. The increasing prevalence of hepatic steatosis poses additional challenges in the management of hepatitis A, increasing the risk of severe forms of the disease. Timely and specialized treatment are essential to address this complex clinical condition.

Ethical statement: Patient identity is protected. Informed consent was obtained.

Declaration of interests: None

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101841

Aggressive intrahepatic cholangiocarcinoma in pregnancy: Case report and literature review

Alan Galindo-Félix[1], Laura Sánchez-Reza[1], Emma I. González-Bravo[1], Jorge A. Ortega-Tecuátl[1], Ana P. Escobedo-Zúñiga[2]

[1] *High Specialty Medical Unit, National Medical Center "General Division Manuel Ávila Camacho," Puebla. IMSS, Mexico*
[2] *General Hospital of Mexico Dr. Eduardo Liceaga, Mexico*

Introduction and Objectives: Cholangiocarcinoma is a very rare type of hepatobiliary cancer and extremely rare reported during pregnancy. Its early and timely diagnosis is complicated. To report a rare and poorly studied case of aggressive intrahepatic cholangiocarcinoma during pregnancy in a 30-year-old patient.

Material and Patients: Female patient, 30 years old, with antecedent of 2 cesarean sections, one 2 years ago and the second one 1 and a half year ago, without complications and occupational exposure to unspecified pesticides. The clinical picture begins at 32 weeks of gestation characterized by nausea and vomiting of gastric contents, dull pain in the right hypochondrium and weight loss of 7 kg in 2 months, to which generalized jaundice, choluria, acholia, pruritus, nocturnal diaphoresis and ecchymosis; A simple magnetic resonance image was performed and a large liver lesion was identified at the level of liver segments IV and VIII with a maximum diameter of 10.3 cm, suggestive of malignancy associated with the presence of satellite lesions suggestive of infiltration to the rest of the liver parenchyma. It was decided to resolve the pregnancy at 35 weeks of gestation by cesarean section without apparent complications. During the mid-surgical postpartum period simple and contrasted tomography of the abdomen is performed where hepatic, pulmonary, pleural and bone tumor activity and dilation of the intrahepatic bile duct are reported; tumor markers ACE 1.91, CA 19-9 30.89, AFP 149.4; liver biopsy reports metastasis of moderately differentiated adenocarcinoma (g2) consistent with primary bile duct (cholangiocarcinoma); Immunohistochemistry with positivity for ck7, ck19, negative for ck20, gata 3, cdx2, pax8 and hepar1.

Results: During his in-hospital stay, she presented sinus tachycardia evidenced by ECG, associated with risk factors, and pulmonary thromboembolism was suspected. The ICU service was consulted and they accepted the case, evaluated by cardiology performing an echocardiogram discarding the diagnosis. The general surgery, oncological surgery and oncology services were consulted and commented that she was not a candidate for surgical or systemic treatment for advanced disease clinical stage IV.

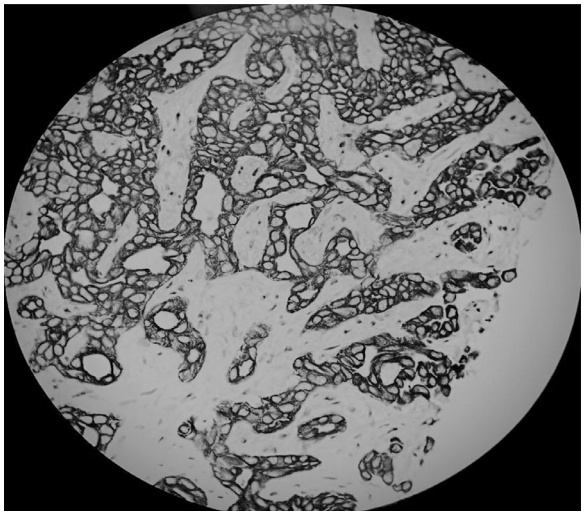
She was discharged from the hospital with palliative measures and two weeks later she was re-admitted to the emergency department due to generalized tonic-clonic seizures advanced airway manage was performed and vasopressor support was decided; simple skull tomography without metastatic activity; presented clinical deterioration and progression of the disease leading to multiple organ failure. The patient died 4 days later. The baby is being monitored by ophthalmology for a diagnosis of retinopathy of prematurity.

Conclusions: Cholangiocarcinoma is the second most common liver neoplasm, it encompasses neoplasms that depend on the bile duct. It has an incidence in pregnancy of 10 cases/10,000 pregnancies, making it a very uncommon pathology and only 12 cases reported from 1998 to 2023 are known. Its prognosis is lethal due to its aggressiveness and diagnosis in advanced stages. The treatment is only surgical, however the procedure carries high rates of morbidity and mortality.

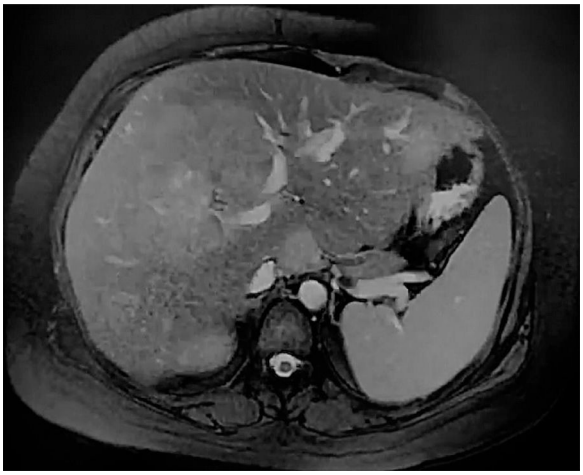
Ethical statement: The patient's identity was protected. Consentment was obtained directly from the patient.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.



Annex 1. Liver biopsy with immunohistochemistry



Annex 2. Simple magnetic resonance imaging

https://doi.org/10.1016/j.aohep.2025.101842

Pirfenidone Prevents Myocarditis by Restoring Metabolic Hormone Levels in a Mouse MASH Model and its Effect on H9c2 Myoblast Viability under Glucolipotoxicity

Daniel López-Cifuentes[1],
Ana S. Sandoval-Rodríguez[1],
Ángel O. Vázquez-Esqueda[1],
Jonathan S. Rodríguez-Sanabria[1],
Juan Armendáriz-Borunda[1,2],
Jorge Gutiérrez-Cuevas[1]

[1] *Department of Molecular Biology and Genomics, Institute for Molecular Biology in Medicine and Gene Therapy, University of Guadalajara, CUCS, Guadalajara, Jalisco, Mexico*
[2] *Tecnologico de Monterrey, EMCS, Campus Guadalajara, Zapopan, Jalisco, Mexico*

Introduction and Objectives: Obesity, global epidemic, can cause metabolic dysfunction-associated steatohepatitis (MASH) and cardiovascular diseases. Pirfenidone (PFD) has anti-inflammatory and antifibrotic properties. We investigated the effects of PFD on metabolic hormones expression and myocarditis in a mouse MASH model and its effect on H9c2 cells viability under glucolipotoxicity.

Materials and Patients: Twenty-week-old male C57BL/6J mice were divided into two groups: one group was fed a normal diet (ND, 3.1 kcal/g plus normal water, n=7), while the other group was fed a high-fat, high-carbohydrate diet (HFHC, 5.1 kcal/g plus water containing 2.31% fructose, 1.89% sucrose; n=14) for 16 weeks. At week 8, seven HFHC mice were administered PFD at a dosage of 300 mg/kg/day by gavage. Insulin tolerance tests (ITT), dry chemistry analysis, ELISA, histological staining (Hematoxylin-Eosin and Masson's Trichrome), and morphometric analyzes of the tissues were evaluated. H9c2 cells were treated with the following concentrations: 100 μM, 200 μM, 400 μM PA (PA), 15 mM, 30 mM glucose, and 0.3 mM, 0.5 mM, 1 mM 1.5 mM PFD. H9c2 cells viability under glucolipotoxicity were evaluated by MTT assay and Oil red O staining. The data were analyzed using one-way ANOVA followed by Tukey's post-hoc test in Graphpad Prism v10.0.

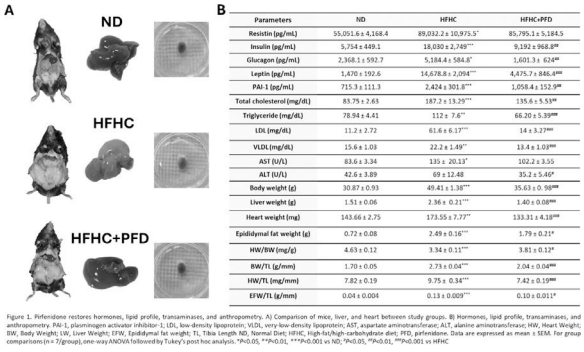
Results: HFHC mice developed MASH, myocarditis and fibrosis ($P \leq 0.05$). Additionally, resistin and AST levels significantly increased ($P \leq 0.05$). PFD prevented elevated parameters in HFHC mice ($P \leq 0.05$), such as body weight, epididymal fat weight, liver weight and heart weight; including body weight/tibia length ratio, heart weight/tibia length ratio and epididymal fat weight/tibia length ratio; hormone levels: insulin, glucagon, leptin, and plasminogen activator inhibitor-1 (PAI-1); lipid profile: total cholesterol, triglycerides, LDL, and VLDL; adipocyte hypertrophy, inflammatory foci, and fibrosis in liver and cardiac tissues. Additionally, PFD reduced ALT expression and tibia length ($P \leq 0.05$). The heart weight/body weight ratio decreased in HFHC mice ($P \leq 0.05$), PFD recovered this ratio ($P \leq 0.05$). H9c2 cells treated with 400 μM PA showed 50% cell viability ($P \leq 0.05$), all other concentrations of the compounds had cell viability > 60% ($P \leq 0.05$), including H9c2 cells treated with 150 μM PA, 15 mM glucosa, and 1 mM PFD ($P \leq 0.05$). H9c2 cells treated with 150 μM and 200 μM PA showed a significant increase in intracellular lipid accumulation ($P \leq 0.001$), and H9c2 cells treated with 150 μM PA and 1.5 mM PDF showed a tendency to reduce intracellular lipid levels.

Conclusions: PFD restores the expression levels of metabolic hormones, which are involved in lipids and carbohydrates metabolism, improving lipid and aminotransferases levels, thus preventing myocarditis and fibrosis in MASH mice. These findings suggest the potential of PFD for the prevention of myocarditis and fibrosis in obesity-induced MASH mice.

Ethical statement: CUCS Research Committee at the University of Guadalajara approved this study (protocol number: CI-01419, CI-02423).

Declaration of interests: None.

Funding: This work was supported by CONAHCYT, Mexico, under grant CF-2023-I-473 to JGC.



Parameters	ND	HFHC	HFHC+PFD
Resistin (pg/mL)	55,051.6 ± 4,168.4	89,032.2 ± 10,975.5*	85,795.1 ± 5,184.5
Insulin (pg/mL)	5,754 ± 449.1	18,030 ± 2,749****	9,192 ± 968.8##
Glucagon (pg/mL)	2,368.1 ± 592.7	5,184.4 ± 584.8*	1,601.3 ± 624##
Leptin (pg/mL)	1,470 ± 192.6	14,678.8 ± 2,094****	4,475.7 ± 846.4###
PAI-1 (pg/mL)	715.3 ± 111.3	2,424 ± 301.8****	1,058.4 ± 152.9##
Total cholesterol (mg/dL)	83.75 ± 2.63	187.2 ± 13.29****	135.6 ± 5.53##
Triglyceride (mg/dL)	78.94 ± 4.41	112 ± 7.6**	66.20 ± 5.39###
LDL (mg/dL)	11.2 ± 2.72	61.6 ± 6.17****	14 ± 3.27###
VLDL (mg/dL)	15.6 ± 1.03	22.2 ± 1.49**	13.4 ± 1.03###
AST (U/L)	83.6 ± 3.34	135 ± 20.13*	102.2 ± 3.55
ALT (U/L)	42.6 ± 3.89	69 ± 12.48	35.2 ± 5.46#
Body weight (g)	30.87 ± 0.93	49.41 ± 1.38****	35.63 ± 0.98###
Liver weight (g)	1.51 ± 0.06	2.36 ± 0.21****	1.40 ± 0.08###
Heart weight (mg)	143.66 ± 2.75	173.55 ± 7.77****	133.31 ± 4.18###
Epididymal fat weight (g)	0.72 ± 0.08	2.49 ± 0.16****	1.79 ± 0.21#
HW/BW (mg/g)	4.63 ± 0.12	3.34 ± 0.11****	3.81 ± 0.12#
BW/TL (g/mm)	1.70 ± 0.05	2.73 ± 0.04****	2.04 ± 0.04###
HW/TL (mg/mm)	7.82 ± 0.19	9.75 ± 0.34****	7.42 ± 0.19###
EFW/TL (g/mm)	0.04 ± 0.004	0.13 ± 0.009****	0.10 ± 0.011#

Figure 1. Pirfenidone restores hormones, lipid profile, transaminases, and anthropometry. A) Comparison of mice, liver, and heart between study groups. B) Hormones, lipid profile, transaminases, and anthropometry. PAI-1, plasminogen activator inhibitor-1; LDL, low-density lipoprotein; VLDL, very-low-density lipoprotein; AST, aspartate aminotransferase; ALT, alanine aminotransferase; HW, Heart Weight; BW, Body Weight; LW, Liver Weight; EFW, Epididymal fat weight; TL, Tiba Length ND, Normal Diet; HFHC, high-fat/high-carbohydrate diet; PFD, pirfenidone. Data are expressed as mean ± SEM. For group comparisons (n = 7/group), one-way ANOVA followed by Tukey's post hoc analysis. *P<0.05, **P<0.01, ***P<0.001 vs ND; #P<0.05, ##P<0.01, ###P<0.001 vs HFHC

https://doi.org/10.1016/j.aohep.2025.101843

Large volume paracentesis: Is there a limit?

Alejandro Tovar-Duran,
Carlos A. Campoverde-Espinoza,
Fatima Higuera-De la Tijera, Jose L. Pérez-Hernández

Hepatology and liver transplantation, General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico

Introduction and Objectives: Ascites is observed in 5-10% of cirrhotic patients. Large volume paracentesis (LVP), where >5 liters are drained, is safe. Albumin is essential to prevent post-paracentesis circulatory dysfunction (PPCD), with the literature indicating that its incidence increases when draining >8 liters in one session, suggesting draining a smaller amount.

Materials and Patients: An observational, analytical, and retrospective study was conducted, which included the clinical records of patients over 18 years of age admitted to the Gastroenterology service of the General Hospital of Mexico "Dr. Eduardo Liceaga" from January 2020 to March 2024 with a diagnosis of Grade II or III ascites, without criteria for acute kidney injury (AKI) according to the International Ascites Club (ICA) and with baseline creatinine available in

the last 3 months before assessment. The amount of ascites that were drained was evaluated, with no limit of liters in a session, and the occurrence of AKI during the following 7 days after paracentesis as a manifestation of PPCD. The definition of AKI was according to the latest definition by KDIGO / ICA. We excluded patients admitted with a diagnosis of AKI or a history of chronic kidney disease (CKD) of any etiology, and those in whom it was not specified whether albumin was administered after paracentesis. Descriptive statistics were performed with measures of central tendency and dispersion. We used X2, Student's T test, and Mann-Whitney U test to compare the variables. A value of $P < 0.05$ was considered statistically significant.

Results: We included 60 patients with a diagnosis of cirrhosis, administered for grade II and grade III ascites, 53.3% were men, with an overall mean age of 51.1 ±10.5 years. Regarding the etiology, 45% were due to alcohol, 21.7% to Fatty Liver Disease Associated with Metabolic Dysfunction (MASLD), as well as the etiology of no filiation; with MELD-Na 17.5 ± 5.7 points. Regarding ascites, 26.7% were grade II and 73.3% grade III, and up to 10% with refractory ascites. The average of liters of ascites drained per session was 8.5 ± 3.8 liters, with a minimum drainage of 5 liters and a maximum of 19.4 liters per session. Of the total patients evaluated, 5% (3) developed AKI after paracentesis, with an elevation of creatinine > 0.3 mg/dl in 48 hours. When comparing groups regarding the presence of ACLF, Child-Pugh, or MELD-Na; Regarding the DPPC, 41.66% (0%) drained less than 8 liters vs 58.34% (8.57%) more than 8 liters, all with refractory ascites, with no significant difference in the development of AKI (p=>0.05).

Conclusions: LVP is safe as long as the albumin dose is adequately replaced at a dose of 6-8 grams per liter of drained ascites in a single session, with caution in patients with refractory ascites, due to the advanced stage of portal hypertension.

Ethical statement: The patients signed informed consent for the PGV, and their data were protected.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101844

Kasabach-Merritt syndrome in an adult treated by embolization prior to liver transplantation: a case report.

Xóchitl García-León, René Malé-Velázquez,
Esteban Martínez-Villaseñor,
Álvaro Calleros-Camarena

Digestive and hepatic Health Institute, Mexico

Introduction and Objectives: Hepatic hemangioma, the most common benign tumor of the liver. Large ones may develop Kasabach Merrit syndrome (KM) if associated with coagulopathy.

Objective: to describe diagnostic approach and treatment of hemangioma with KM syndrome in an adult with complications during pregnancy, treated with embolization and liver transplantation, review of the literature.

Materials and Patients: A 35-year-old woman referred from Durango by angiology to the hepatology department for a failed laparoscopic biopsy attempt due to the presence of unspecified vascular lesions which presented bleeding due to severe coagulation disorders, controlled in her hospital of origin. During the consultation, imaging and biochemical characteristics of thrombocytopenia and anemia were evaluated and KM syndrome was considered, complementing the diagnosis with Leukocytes 5.3 × 103/uL, HB 10.3 g/dL, Hto 29.8%, VCM 99.2 fL, HCM 34.3 pg platelets 111 × 103/uL, Cr 0.61mg/dL, BT 1. 05mg/dl, FA 64 U/L, GGT 55 U/L AST 15 U/L, ALT 20 U/L, albumin 4.82g/dL, fibrinogen 52, dimer D 49.46 ug/dl, AFP 1.21 ng/ml, carcinoembryonic 0.94 ng/ml, Ca 19-9 2. 0 U/ml TP 14.6 INR 1.0, it was decided to perform a biopsy to rule out hemangioepithelioma, presenting severe hemorrhage requiring transarterial embolization on two occasions. Subsequently, she returned to the clinic with a normoevolutive pregnancy and a considerable increase in the size of the lesions, requiring cesarean section due to placenta accrete, again generating hemorrhage and development of ascites. Due to the hepatic deterioration, a protocol for transplantation was established and successfully performed in March 2024, with a total reversal of the coagulation disorders after the procedure and currently with no alterations.

Results: Hepatic hemangiomas are mostly asymptomatic and small; those larger than 10 cm are considered giants and present with non-specific symptoms such as abdominal pain, fatigue, etc. They are diagnosed by tomography (CT) or magnetic resonance imaging (MRI); in CT they are observed as relatively well-defined hypodense nodules, hypoattenuated in relation to parenchyma and centripetal peripheral enhancement with contrast medium, with complete and persistent opacification in late sections. It presents complications such as intralesional hemorrhage, mass effect in adjacent structures, and rupture with intraperitoneal hemorrhage. Some lesions may develop KM syndrome, a vascular disease characterized by thrombocytopenia, microangiopathic hemolytic anemia, coagulopathy and hepatic vascular lesions. The pathogenesis is due to the sequestration of platelets and coagulation factors in the abnormal endothelium of the vascular lesion. It requires biopsy to rule out malignant neoplasms (hemangioepithelioma). Occurs in neonates, rarely in adults. Transarterial embolization and chemoembolization can be used as a treatment for bleeding. Surgical resection is not recommended because of technical difficulty and risk of intraoperative bleeding. When there is severe liver dysfunction or recurrent bleeding, liver transplantation should be considered.

Conclusions: KM syndrome should be suspected in large vascular lesions accompanied by anemia, thrombocytopenia and coagulopathy; it is an uncommon complication that can generate hemorrhage and require management with interventional radiology or liver transplantation as in the case presented. Management should be multidisciplinary.

Ethical statement: The patient's identity was protected. Consentment was obtained directly from the patient.

Declaration of interests: None

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

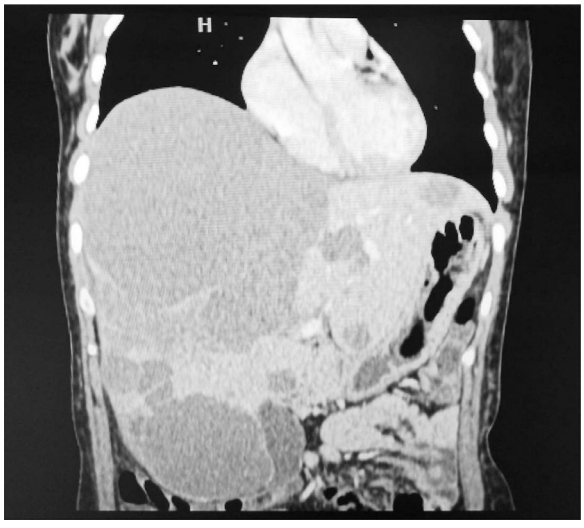


Figure.

https://doi.org/10.1016/j.aohep.2025.101845

Most Common Complications in Patients Post Liver Transplantation at a Hospital in Mexico.

Saúl A. Vera-Nungaray[1], Diego F. Abendaño-Rivera[1], Karina Cazarin-Chavez[1], María F. Higuera-De la Tijera[1], Viridiana López-Ladrón de Guevara[1], Isidoro A. Sanchez-Cedillo[2], Erika F. Rodriguez-Aguilar[2], Victor M. Paez-Zayas[2]

[1] *Department of Gastroenterology and Hepatology, General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico*
[2] *Department of Transplantation, General Hospital of Mexico*

Introduction and Objectives: Liver transplantation worldwide presents a series of complications that need to be identified to adequately treat and prevent them; however, information about these in Mexico is limited. The objective is to report the epidemiology of these complications in a third-level hospital transplant center in Mexico

Materials and Patients: A cohort study was conducted, including post-liver transplant patients from 2019 to 2023. The presence of infectious and postsurgical complications after the event was determined, as well as the rate of both acute and chronic rejection. Data are expressed using descriptive statistics with proportions and percentages for qualitative variables and mean and standard deviation or median and range for quantitative variables.

Results: 110 patients were included, 46 women and 64 men with a mean age of [insert average age]. Complications were classified according to type and timing of presentation after surgery. Regarding rejection rates, a 10.00% acute rejection was observed with a mean presentation of 7.6±6.6 months, and 2.8% chronic rejection (mean time: 17.7±8.1 months). Results are summarized in Table 1 and Figure 1.

Conclusions: Complications in liver transplant recipients are common and jeopardize both patient life and graft function. Although rejection rates remain high, our center presents a favorable epidemiology compared to reported literature, below global rates for acute rejection (15-25%) and chronic rejection (3-17%).

Ethical statement: The research was conducted following the Helsinki Declaration of the World Assembly 2013.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1
Postoperative, Early, and Late Complications Following Liver Transplantation

	Post operative		Early		Late	
Liver Rejection	n	Average	n	Average	n	Average
Acute Rejection	0	0	6	5.454545455	5	4.545454545
Chronic Rejection	0	0	0	0	3	2.727272727
Infections	**n**	**Average**	**n**	**Average**	**n**	**Average**
Pneumonia	0	0	17	15.45454545	0	0
Infectious Diarrhea	0	0	14	12.72727273	0	0
Urinary Tract Infection (UTI)	1	0.90909091	9	8.181818182	0	0
Spontaneous Bacterial Peritonitis (PBE)	0	0	1	0.909090909	0	0
Upper Respiratory Tract Infection (URTI)	0	0	5	4.545454545	0	0
Cytomegalovirus (CMV)	0	0	4	3.636363636	0	0
Cholangitis	0	0	3	2.727272727	1	0.909090909
Abdominal Abscess	0	0	3	2.727272727	0	0
Oropharyngeal/Esophageal Candidiasis	0	0	3	2.727272727	0	0
Soft Tissue Infection	0	0	1	0.909090909	0	0
Osteomyelitis	0	0	1	0.909090909	0	0
Bacteremia	0	0	1	0.909090909	0	0
Postsurgical Complications	**n**	**Average**	**n**	**Average**	**n**	**Average**
Biliary Stricture	0	0	5	4.545454545	2	1.818181818
Hemothorax	1	0.90909091	0	0	0	0
Pneumothorax	1	0.90909091	0	0	0	0
Abdominal Wall Hematoma	1	0.90909091	0	0	0	0
Retroperitoneal Hematoma	1	0.90909091	0	0	0	0
Hemoperitoneum	2	1.81818182	0	0	0	0
Cavo-Suprahepatic Stenosis	0	0	0	0	1	0.909090909
Abdominal Adhesions	1	0.90909091	0	0	0	0
Miscellaneous	**n**	**Average**	**n**	**Average**	**n**	**Average**
Non-inflammatory Diarrhea	2	1.81818182	7	6.363636364	11	10
Acute Kidney Injury (AKI)	11	10	13	11.81818182	11	10
Chronic Kidney Disease (CKD)	0	0	8	7.272727273	5	4.545454545
De novo Primary Biliary Cholangitis	0	0	0	0	1	0.909090909
Portal Vein Thrombosis	0	0	1	0.909090909	0	0
Pleural Effusion	2	1.81818182	2	1.818181818	0	0
Seizures	4	3.63636364	1	0.909090909	0	0
Cancer Relapse	0	0	0	0	1	0.909090909
Non-variceal Upper Gastrointestinal Bleeding	0	0	1	0.909090909	0	0
Anal Fistula	0	0	0	0	1	0.909090909
Pathological Fractures	0	0	2	1.818181818	0	0
Lymphoid Hyperplasia	0	0	1	0.909090909	0	0
Unstable Angina	1	0.90909091	0	0	0	0
Superficial Venous System Thrombosis	0	0	0	0	1	0.909090909

https://doi.org/10.1016/j.aohep.2025.101846

Peripheral cellular immune alterations during excessive alcohol consumption

Karla Z. Medina-Avila[1], Abigail Hernandez-Barragan[1], Marisela Hernández-Santillan[1], Isabel Villagómez-López[1], Adrián Flores-Sanchez[1], Melanie Acosta-Gutiérrez[1], Viridiana Bautista-Nava[1], Isaac B Flores-Islas[1], Jesús A Dorantes-Álvarez[1], Moisés Martinez-Castillo[1], Fátima Higuera-de la Tijera[2], José L Pérez-Hernández[2], Gabriela Gutiérrez-Reyes[1]

[1] *Liver, Pancreas, and Motility Laboratory (HIPAM), Experimental Medicine Research Unit, Faculty of Medicine, UNAM, General Hospital of Mexico, Dr. Eduardo Liceaga, Mexico*
[2] *Gastroenterology and Hepatology Department. General Hospital of Mexico "Dr. Eduardo Liceaga", México*

Introduction and Objectives: The mechanisms that participate in the pathophysiology of chronic alcohol consumption and Alcoholic Liver Disease (ALD) include alterations of the innate and adaptive immune system, until now there is little information about the damage inducing mechanisms and their participation in the development of the disease. The objective was to determine the imbalance of peripheral cellular immunity according to the pattern of alcohol consumption.

Materials and Patients: Cross-sectional study included 5 groups of subjects with different patterns of alcohol consumption using AUDIT and DSM-IV. G1: Control with OH consumption<10g/day (CT); G2: Risk (Ri) and G3: Abuse (A) with AUDIT>8; G4: Alcoholism, without clinical or biochemical stigmata of damage (OH); G5: Patients with alcoholic liver cirrhosis (CiOH). T cells, T-CD4+, T-CD8+, B cells, NK and NKT were determined in peripheral blood by flow cytometry. For statistical analysis we performed U-Mann Whitney, considering $p<0.05$ significant.

Results: In the study, 589 subjects were included, average age 32±11, 30±11, 23±3, 31.5±13 and 47.5±7.7 years CT, Ri, A, OH y CiOH respectively ($p<0.001$). Alcohol consumption (g/day) was higher in OH 158(210,107), and CiOH 293(340,246) ($p<0.001$,both). Cellular determination of NK we found elevated (15.4 and 13.3vs11.1) and NKT (3.7 and 2.5vs1.7) in groups A, OH and CiOH ($p<0.001$), ($p<0.001$), ($p<0.05$) only in NK, during CiOH NKT decrease (1.4vs1.7)($p<0.001$). In T cells we observed a decrease in OH (62.3vs66.5) and CiOH (56.8vs66.5) ($p<0.001$), the percentage of CD4 + cells decreased from the Ri group (35.7vs38.8)($p<0.01$) until OH

(35.1vs38.8)(p<0.01) while during CiOH they increase (41.8vs35.1) (p<0.05). CD8+ cells increase during OH (24.5vs21.1)(p<0.05) and decrease in CiOH (13.9vs21.1)(p<0.001) respectively.

Conclusions: The immune abnormalities presented during risky consumption, abuse, dependence and cirrhosis due to alcohol are differential, the most significant changes are observed in the cytotoxic NK, NKT and CD8+ and regulatory CD4+ populations generating a cellular imbalance that could be related to development and progression of liver damage.

Ethical statement: The protocol was approved by the Ethics and Research Committees of the "Dr. Eduardo Liceaga" General Hospital of México (HG/DI/16/107/03/082) and the School of Medicine of UNAM (FMD/DI/15/2015)

Declaration of interest: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors..

https://doi.org/10.1016/j.aohep.2025.101847

Biliary reconstruction with biodegradable stent in pediatric liver transplantation: long-term follow-up.

Monserrat Arreola Gutiérrez[1], Elizabeth Hernández Chávez[2], Roberto Ortiz Galvan[2], Xitlalli G Tellez[5], Gerardo Luna[6], Yuridia Plascencia Gamboa[3], Sergio Pacheco Sotelo[4], Verónica Paredes[2], Ishtar Cabrera[5], Valeria Ramírez[5]

[1] *Transplant Department Head, Pediatrics Hospital CMNO IMSS, Guadalajara, Mexico*
[2] *Transplant Department, Pediatrics Hospital CMNO IMSS, Guadalajara, Mexico*
[3] *Nephro-Uro Department Head, Pediatrics Hospital CMNO IMSS, Guadalajara, Mexico*
[4] *Gastroenterology and Nutrition Department Head, Pediatrics Hospital CMNO IMSS, Guadalajara, Mexico*
[5] *Pediatric Surgery Department, Pediatrics Hospital CMNO IMSS, Guadalajara, Mexico*
[6] *Transplant Division, Hospital 25 CMNN IMSS, Monterrey, Mexico*

Introduction and Objectives: The biliary complications can limit the survival of both the graft and the patient in the liver transplant (LT). Biliary strictures represent 80% of cases, could appear early; <6 months or late >6 months post-transplant. To present our experience in the use of the biodegradable stent for biliary reconstruction in LT

Materials and Patients: Prospective, non-randomized study, in patients undergoing liver transplantation from a living donor period from February 2023 to 2024 with the use of a biodegradable stent, the biochemical variables of liver function, as well as radio imaging studies will be recorded to evaluate the presence or no biliary complications during the study. The characteristics of the stend were standardized based on the weight and measurements of the patient and native bile duct.

Results: 6 patients met the requirements to be included in the study, 6 stent placements were performed in 6 transplants, all of them were female, the diagnosis prior to transplantation were biliary atresia (BA) 2, hepatoblastoma 2, and acute liver failure (ALF) 2, with a median age of 22.5 months SD +13.2 months and a median of weight 10.7 kg SD +3.8 kg. (image 1). In 4 patients, left bilio-hepatic anastomosis was performed and in two patients, left hepatic anastomosis was performed toward roux. The degradation was demonstrable with a median of 5.3 months with SD 1.2 after placement. Follow-up was carried out for an average of 9.3 months with a minimum of 4 months and a maximum of 14 months. At the time of the study, all patients show adequate tolerance with no evidence of post-transplant biliary complications requiring biliary exploration or reconstruction. (image 2).

Conclusions: The anatomical characteristics of the stend prevent obstruction or stenosis at the level of the biliary anastomosis, corroborated by imaging studies, laboratory results and clinical evolution throughout the follow-up of our study. We present the first world report with long-term follow-up with the use of a biodegradable device in pediatric patients with an open approach in living donor.

Ethical statement: This study completes the ethical statuses established by our hospital ethics committee.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors..

1.- Follow up of biodegrable stend in six patients with liver transplantation

Age at time of transplant *	Weight at time of transplant **	Reason for transplant	Follow up until now *	Presence of the stend on X-ray *	Dilation of the bile duct in US
16 m	9 kg	BA	14 m	6 m	no
21 m	10.9 kg	Hepatoblastoma	14 m	6 m	no
24 m	10.5 kg	Hepatoblastoma	12 m	6 m	no
19 m	7.5 kg	BA	7 m	6 m	no
52 m	15.5 kg	ALF	5m	5 m	no
32 m	17.5 kg	ALF	4 m	2 m	no

* months ** kilograms BA biliary atresia ALF acute liver failure

2.- Demonstration of open approach and follow -up

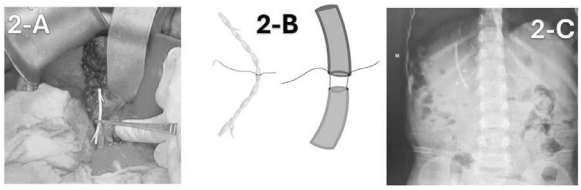


Image A we show the interposition of a stend already placed with left hepatic anastomosis towards the native common bile duct in an open approach during live donor liver transplantation. **Image B** shows part of the open technique placing fixation points with PDS 6 wall suture posterior suture stitches and subsequently fixation of the stend using an internal knot with closure of the anterior wall with separate stitches. **Image C** shows radiological follow-up with the presence of the stend.

https://doi.org/10.1016/j.aohep.2025.101848

Lymphopenia as a risk factor for mortality in patients with liver cirrhosis.

Carlos F. Fajardo–Felix, Aleida Bautista-Santos, Hector H. Gonzalez-Anchondo, Daniela Lilian Andrade-Gonzalez, Rosalba Moreno-Alcántar

Gastroenterology Department, Specialties Hospital Dr. Bernardo Sepúlveda, National Medical Center Siglo XXI, IMSS, Mexico

Introduction and Objectives: Patients with cirrhosis develop immune dysfunction where a decrease in CD4 lymphocytes has been described in up to 65% of patients. The aim of this study is to evaluate if lymphopenia is a risk factor for mortality in patients with liver cirrhosis during hospitalization

Materials and Patients: A retrospective, observational, cross-sectional, and single-center study was carried out in a period from October 2023 to May 2024, which included patients >18 years of age with diagnosis of liver cirrhosis who were admitted to the Gastroenterology service due to some acute decompensation and who died in that hospitalization, who had absolute lymphocyte determination on admission. Descriptive statistics were performed with frequencies and percentages and the variables were analyzed according to their free or normal distribution with Mann-Whitney U or Student's t,

respectively. Chi-square was used to assess the risk of mortality associated with lymphopenia.

Results: 67 patients were included females predominated 39 (58.2%), with a mean age of 58±10 years, the most frequent admission diagnoses were variceal hemorrhage in 29 (43%) patients, followed by the diagnosis of acute over chronic liver disease (ACLF) 13 (19%) and in third place hepatic encephalopathy and acute kidney injury 8 (11%) respectively. The mean MELD 3.0 was 21±9 and most patients were in Child Pugh B 32 (47.8%). Patients with ascites were 48 (71.6%), hepatic encephalopathy 33 (49.3%), acute renal injury 25 (37.3%), and spontaneous bacterial peritonitis 8 (11.9%). 52.2% (35) of the patients had absolute lymphocytes <1000 on admission.

The OR for lymphocytes <500 at admission was 4.1 95% CI (1.04-16.18) for the outcome and mortality.

Mortality in this group of patients was 17.9% (12), with ACLF being the main cause in 11 patients, which is equivalent to 91%, 75% of patients had lymphopenia (9).

Conclusions: The absolute lymphocyte count < 500 at admission is a risk factor for mortality in patients admitted to hospitalization due to an acute decompensation event.

Ethics Statement: It is considered risk-free research and the project was approved by the ethics committee

Declaration of Interest: None.

Funding: This research received no specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Características de los pacientes con linfopenia y cirrosis

Edad, media, DE	58.12 ± 10.92
Género	
Mujeres, No, %	39 (58.2)
Hombres, No, %	28 (41.8)
Child-Pugh-Turcotte	
A, No, %	5 (7.5)
B, No, %	32 (47.8)
C, No, %	30 (44.8)
Diagnósticos de ingreso	
Hemorragia variceal, No, %	29 (43.3)
Falla hepática aguda sobre crónica No, %	13 (19.4)
Encefalopatía hepática No, %	8 (19.4)
Lesión renal aguda No, %	8 (19.4)
Mortalidad No, %	12 (17.9)
Linfopenia	
<1000 linfocitos absolutos No, %	35 (52.2)
Comorbilidades No, %	52 (76.6)
MELD 3.0, media, DE	21±9
Encefalopatía hepática No, %	33 (49.3)
Ascitis No, %	48 (71.6)
Hemorragia variceal No, %	39 (58.2)
Lesión renal No, %	25 (37.3)
Peritonitis bacteriana espontánea No, %	8 (11.9)
Carcinoma hepatocelular No, %	7 (10.4)
Leucocitos totales, media, DE	7630 ± 4417

Characteristics of patients with lymphopenia and cirrhosis

Age, mean, SD	58.12 ± 10.92
Gender	
Woman, No, %	39 (58.2)
Man, No, %	28 (41.8)
Child-Pugh-Turcotte	
A, No, %	5 (7.5)
B, No, %	32 (47.8)
C, No, %	30 (44.8)
Admission diagnosis	
Variceal hemorrhage, No, %	29 (43.3)
Acute on chronic liver failure No, %	13 (19.4)
Liver encephalopathy No, %	8 (19.4)
Acute kidney injury No, %	8 (19.4)
Mortality No, %	12 (17.9)
Lymphopenia	
<1000 absolutes lymphocytes No, %	35 (52.2)
Comorbidities No, %	52 (76.6)
MELD 3.0, mean, SD	21±9
Liver encephalopathy No, %	33 (49.3)
Ascites No, %	48 (71.6)
Variceal hemorrhage No, %	39 (58.2)
Acute kidney injuryNo, %	25 (37.3)
Spontaneous bacterial peritonitis No, %	8 (11.9)
Hepatocellular carcinomaNo, %	7 (10.4)
Absolutes lymphocytes, mean, DE	7630 ± 4417

(*continued*)

https://doi.org/10.1016/j.aohep.2025.101849

Success of a second treatment of direct-acting antiviral therapy in patients with chronic Hepatitis C Virus infection.

Daniela L. Andrade-González, Aleida Bautista-Santos, Rosalba Moreno-Alcántar

Gastroenterology department of National Medical Center Siglo XXI, IMSS, Mexico

Introduction and Objectives: Direct-acting antivirals (DAAs) are associated with a high sustained viral response (>95%) at 12 weeks (SVR12) in patients with chronic hepatitis C virus (HCV) infection.

There is a low percentage of patients who have treatment failure or reinfection in the presence of persistent risk factors. The indicated treatment is a scheme with voxilaprevir but in Mexico we do not have this option so sofosbuvir-velpatasvir and glecaprevir-pibrentasvir are used. The objective is to report the success of a second-line therapy with DAA in patients with chronic HCV infection.

Materials and Patients: Study: retrospective, descriptive, cross-sectional, single center. Study period: April 2017 to December 2023. Patients over 18 years of age in follow-up at the hepatitis clinic of the Hospital de Especialidades del Centro Médico Nacional Siglo XXI were included, before starting treatment, genotyping and new HCV viral load, laboratory and imaging studies were performed to rule out hepatocellular carcinoma and the cases were discussed by a group of experts at the national level as part of the National Hepatitis C Program of the Mexican Social Security Institute to define the treatment: sofosbuvir- velpatasvir or glecaprevir-pibrentasvir. Descriptive statistics were used to analyze the variables with frequencies and percentages and a table was prepared to show the characteristics of the patients.

Results: 900 patients were treated in the study period with reported SVR12 97%; 5 patients with treatment failure were included, total patients received treatment based on sofosbuvir-velpatasvir + ribavirin for 24 weeks, 3 women and 2 men, mean age was 52 years. 3 patients with genotype 1, 1 patient with genotype 3 and only in one patient the genotype was not determined. Forty percent (2) had cirrhosis of the liver. The percentage of adherence to initial treatment was >80% in all patients and none had used a proton pump inhibitor (PPI). The SVR12 percentage was 100%.

(Table 1)

Conclusions: Sofosbuvir-velpatasvir + ribavirin-based treatment is highly effective as a second treatment in patients with a history of first treatment failure, with SVR 12 of 100%.

Ethics statement: Research without risk and approved by the ethics committee.

Declaration of interests: None.

Funding: This research received no specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1
Characteristics of patients with chronic hepatitis C.

Gender	
Female, No. %	3 (60)
Male, No. %	2 (40)
Age, mean, years	52
Genotype	
1,No. %	3 (60)
3, No. %	1 (20)
Pre-treatment viral load, mean, UI/ml	297,542
Pretreatment	
Sofosbuvir-ledipasvir, No, %	1 (20)
Sofosbuvir-velpatasvir, No, %	3 (60)
Glecaprevir-pibrentasvir, No,%	1 (20)
VIH co-infection, No, %	1 (20)
Percentage of adherence to first treatment	>80%
Liver cirrhosis, No,%	2 (40)

https://doi.org/10.1016/j.aohep.2025.101850

Risk factors for sarcopenia in cirrhotic patients under evaluation for liver transplantation.

Karla E. Pérez-Reséndiz, Yvonne Tadeo-Jiménez, Aleida Bautista-Santos, Rosalba Moreno-Alcántar

Department of Gastroenterology, Specialties Hospital Dr. Bernardo Sepúlveda, National Medical Center Siglo XXI, IMSS, Mexico

Introduction and Objectives: Liver cirrhosis is the sixth cause of death in Mexico and is also associated with a significant reduction in quality of life. Malnutrition is common in patients in the final stage of the disease and its presence has been associated with worse clinical outcomes.

Objectives: determine the prognostic factors of sarcopenia in cirrhotic patients in a protocol of liver transplant.

Materials and Patients: Type of study: Retrospective, cross-sectional, analytical, single center. Patients over 18 years of age were included in the evaluation for liver transplantation within the transplant clinic of the Gastroenterology department of the UMAE Centro Médico Nacional Siglo XXI: Study period: January 1, 2022, to June 1, 2023. Statistical analysis It was carried out with dispersion measures for continuous variables and with proportions for categorical variables. Mean and standard deviation or median and interquartile range were used according to the distribution of the variables for normal Student T distribution and for free Mann Whitney U distribution. Dichotomous variables and determining risk were analyzed with the Chi-square test.

Results: 63 patients with liver cirrhosis on a liver transplant protocol were included, with a predominance of female sex (74.6%), whose most frequent etiology was steatotic liver disease associated with metabolic dysfunction (MASLD) (27%), mostly Child- Pugh Functional Class. Pugh B (32%). Median MELD 3.0 was 17(14-22); The most frequent decompensations were ascites in 46 (73%), followed by hepatic encephalopathy in 31 (49%) and variceal hemorrhage in 27 patients (42.9%). Mortality in the evaluated group was 14%, and 3 of them had sarcopenia, which represents 33%. A prevalence of sarcopenia was found in 55.6% of the patients evaluated. In the risk analysis, age > 60 years had an OR of 5.46 95% CI (1.6-17.6)

Conclusions: The risk factor for sarcopenia in patients being evaluated for liver transplantation is age >60 years. Other factors that can influence the development of sarcopenia must be established.

Ethical statement: Risk-free research and approved by the ethics committee.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1
Characteristics of patients undergoing evaluation for liver transplantation. n= 63.

Age, median	52.2 + 11.7
Gender	
Women, No. (%)	47 (74.6)
Men, No. (%)	16 (25.4)
Sarcopenia, No.(%)	35 (55.6)
Etiology	
MASLD, No. (%)	17 (27)
BPC, No. (%)	14 (22)
VHC, No. (%)	7 (11.1)
Overlap Syndrome, No. (%)	7 (11.1)
AIH, No. (%)	6 (9.5)
Other etiology, No. %	12 (20)
Child-Pugh-Turcotte	
A No. (%)	7 (11.1)
B No. (%)	32 (50.8)
C No. (%)	24 (38)
MELD Na, median, percentile	16 (11 - 20)
MELD 3.0 median, percentile	17 (14 - 22)
Diabetes, No. (%)	16 (25.4)
Systemic arterial hypertension, No. (%)	9 (14.3)
Acute decompensation	
Hepatic encephalopathy, No. (%)	31 (49.2)
Spontaneous bacterial peritonitis, No. (%)	5 (7.9)
Ascites, No. (%)	46 (73)
Hemorrhage, No. (%)	27 (42.9)
Thyroid disease, No. (%)	17 (27)
Death, No. (%)	9 (14)
Transplant, No. (%)	4 (6.3)
Body Mass Index, median, percentile	26.17 (23.2 - 29.6)

https://doi.org/10.1016/j.aohep.2025.101851

Response to L-ornitine L-aspartate in a single intravenous dose in cirrhotic patients with overt hepatic encephalopathy.

Yvonne Tadeo-Jiménez, Karla E. Pérez-Reséndiz, Aleida Bautista-Santos, Rosalba Moreno-Alcántar

Gastroenterology department, Specialties Hospital Dr. Bernardo Sepúlveda, National Medical Center Siglo XXI, IMSS, Mexico

Introduction and Objectives: Hepatic encephalopathy (HE) is a neuropsychiatric syndrome that occurs in patients with acute and chronic liver disease; It is associated with a higher risk of new episodes and higher mortality at one year. L-ornithine L-aspartate (LOLA) is a stable salt that acts on two key ammonia detoxification pathways: urea synthesis and glutamine synthesis. Its intravenous administration has been studied with repeated doses and at high doses.

The objective is to describe the response to the administration of a single intravenous dose of L-ornithine L-aspartate in cirrhotic patients with an acute event of overt hepatic encephalopathy.

Materials and Methods: Type of study: Retrospective, transversal, observational, analytical, single-center.

Were included patients over 18 years of age, treated in the continuous admission service for acute event of manifest hepatic encephalopathy grade II to IV according to the West-Haven criteria, who received treatment based on L-ornihine L aspartate in a dose of 20 g. intravenous infusion for 4 hours, with evaluation of the response at the end of infusion. Study period: January 2022 to December 2023. Statistical analysis was performed with frequencies and percentages;

For the quantitative variables Student's t or Mann-Whitney U according to the distribution of the variables and to show the difference between the degree of hepatic encephalopathy on admission and after the infusion of l-ornithine l-aspartate, Wilcoxon was used.

Results: 72 patients with decompensated liver cirrhosis of any etiology were included, mostly Child-Pugh C functional class (56.9%), with a predominance of female sex (75%), and it was found that the most frequent triggering factor was constipation (22.2). %), followed by urinary tract infection (12.5%). Upon admission, the degree of encephalopathy was classified according to the West-Haven clinical scale of which grade II was the most prevalent, the single intravenous dose of L-ornithine, L-aspartate was effective with a significant response $p< 0.05$

Conclusions: The response to a single intravenous dose of 20 g of l-ornithine l-aspartate is effective for the treatment of hepatic encephalopathy, clinically manifesting in an acute episode.

Ethical statement: Risk-free research and approved by the ethics committee.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1
Characteristics of patients with hepatic encephalopathy.

Age	59 (56.25 – 67.75)
Women	54 (75%)
Men	18 (25%)
Etiology	
BPC	19 (26.4%)
MASLD	19 (26.4%)
Alcohol	11 (15.3%)
Child-Pugh C	41 (56.9%)
MELD	20 points (18.25-29)
WHC severity scale	
Grade II	35 (48.6%)
Grade III	31 (43.1%)
Grade IV	6 (8.3%)
Precipitanting factors	
Constipation	16 (22.2%)
UVI	9 (12.5%)
Unidentified	9 (12.5%)

BPC, Primary Biliary Cirrhosis; MASLD, Metabolic dysfunction–associated steatotic liver disease; UVI, Urinary Tract Infection.

https://doi.org/10.1016/j.aohep.2025.101852

Glycogen storage disease, an uncommon cause of portal hypertension in adulthood.

Jessica Valencia Chávez[1], José Luis Moras Villela[1], Aleida Bautista Santos[1], Fany Gabriela Juárez Aguilar[2]

[1] *Department of Gastroenterology Specialties Hospital Dr. Bernardo Sepúlveda, National Medical Center Siglo XXI, IMSS, Mexico*
[2] *Department of Pathology. Specialties Hospital Dr. Bernardo Sepúlveda, National Medical Center Siglo XXI, IMSS, Mexico*

Introduction and Objectives: Glycogen storage diseases are inborn errors of metabolism, with an estimated incidence of 1 in 10,000. Type IV represents 3% of this diseases (GBE1 gene 3p14 involvement), presenting with varied clinical features, including a milder form of hepatic involvement, with hepatic integrity described up to 19 years of age.

Materials and Patients: We present a 22-year-old woman with a history of low weight since childhood, she presented episodes of hematemesis and melena, and she underwent panendoscopy, documenting esophageal varices requiring variceal ligation. Extensive studies demonstrated indirect signs of portal hypertension, partial portal vein thrombosis, and multiple liver lesions, located in segments V, VI and VII, with an irregular heterogeneous morphology, partially defined borders, with a peripheral hypodense halo, the hyperdense center even in simple and porta phases, with the largest lesion being $8.2 \times 7.8 \times 8.1$ cm. A defect in the filling of the left branch of the portal vein was identified, as well as compression of the right branch due to mass effect. Differential diagnoses included cholangiocarcinoma, hepatocellular carcinoma, and hepatic tuberculosis.

Results: Infectious-viral or autoimmune etiologies were ruled out through investigation. Percutaneous liver biopsy guided by ultrasound was performed. The histopathological report showed morphological findings suggestive of metabolic deposit disease. Tiny intracytoplasmic granules, PAS positive, F2 fibrosis on the metavir scale (Masson's trichrome staining); all of these findings consistent with glycogen storage disease type IV (branching enzyme deficiency) with non-progressive hepatic subtype was reached. Based on the history and evolution of the patient she was at the advanced stage of the disease with evidence of fibrosis and portal hypertension. She presented a torpid clinical course, with poor oral tolerance, we identified she had cardiomyopathy with left ventricular hypertrophy, manifesting with cardiac arrhythmia, managed with medical treatment.

This was a challenging case, as the diagnosis was made at an advanced stage of the disease, with multiple complications, limiting the prognosis and therapeutic options for the patient. She was referred to the genetics service for further evaluation.

Conclusions: We present a clinical case of a challenging diagnosis, due to the multiple clinical expressions and variants of glycogen storage disease. It can primarily affect the liver, heart, and neuromuscular system, according to enzymatic deficiency, with milder phenotypes having residual enzymatic activity.

Ethical statement: The patient's identity is protected.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

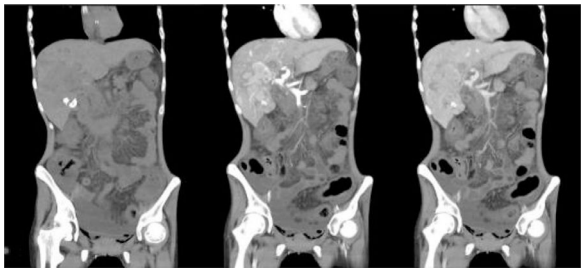


Figure 1. Triphasic abdominal CT scan. Liver, enlarged with multiple lesions located in segments V, VI, and VII, with defined borders, heterogeneous, with peripheral hypodense halo, hyperdense center in all phases, more pronounced in the arterial phase. Left branch of the portal vein, with filling defect attached to the wall, and right branch with decreased caliber.

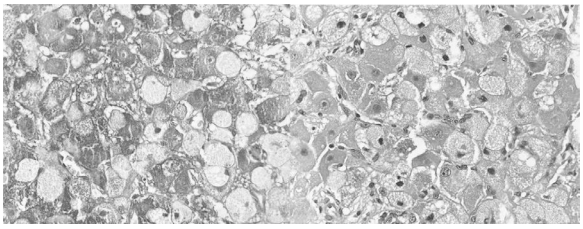


Figure 2. Microphotographs at 40X in H&E and PAS of lobular parenchyma with hepatocytes showing broad, granular cytoplasm, foamy appearance, standing out among normal hepatocytes.

https://doi.org/10.1016/j.aohep.2025.101853

Clinical outcomes in patients with hepatitis A virus infection in a tertiary center: retrospective cohort 2022-2024.

Norma N. Parra-Holguín, Yenni J. Cruz Ramírez, Reina S. Velez Ramírez, Francisco I. García-Juárez

National Medical Center 20 de Noviembre, ISSSTE, Mexico City, Mexico

Introduction and Objectives: In Mexico, the incidence rate of hepatitis A virus (HAV) infection is 3.11/100,000 person/year. 70% of adults develop symptoms, representing 3% of cases of acute liver failure (ALF). This study aimed to evaluate the clinical outcomes obtained in our institution.

Materials and Patients: It is a retrospective, observational cohort study, which included all patients over 18 years of age hospitalized from March 2022 to April 2024. 16 patients with a confirmed diagnosis of HAV infection (IGM) who required hospital management in the Centro Medico Nacional 20 de Noviembre ISSSTE were included. All patients who did not have a confirmatory serological test were excluded. The SPSS v.24 program was used for statistical analysis, using frequencies and percentages for reporting the data.

Results: Of the total of 16 cases included, 31.3% (5) patients were women, and 68.8% (11) were men, with an average age of 35 years old (19-47). The comorbidities they presented were: type 2 diabetes in 18.8% (3), systemic arterial hypertension in 6.3% (1), rheumatoid arthritis in 6.3% (1). Among the clinical manifestations they presented during the evolution were the following: hepatic encephalopathy 31.3% (5), abdominal pain 62.5% (10), fever 3.1% (8), vomiting 3.5% (9), diarrhea 1.6% (4). Of our studied population, 25.0% (4) patients developed acute liver failure requiring attention in the intensive care unit, where they received adjuvant treatment based on n-acetylcysteine and renal replacement therapy. The remaining patients presented alarm symptoms 75.0% (12) without developing liver failure. The mortality reported in our population was 18.8% (3).

Conclusions: The observed mortality was 18.8% (3) of the total included, higher than that reported worldwide. In recent years, an epidemiological transition has been seen in patients with FHA. Among the factors that increased mortality were serious infections, hydroelectrolytic alterations, and limiting the transplant protocol.

Ethical statement: This study follows the ethical principles of clinical research; no intervention was performed on patients and the information is obtained from the clinical record.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101854

Sarcopenia in patients with liver cirrhosis according to hepatic functional reserve

Nayeli X. Ortiz-Olvera[1], Josue G. Junco-Enciso[1], Ricardo Cordova-Ramirez[2], Vanesa J. Gutierrez-Bailon[1], Segundo Moran-Villota[3]

[1] *Gastroenterology Department, Specialties Hospital Dr. Bernardo Sepúlveda, National Medical Center Siglo XXI, IMSS, Mexico*
[2] *Radiology department, Specialties Hospital Dr. Bernardo Sepúlveda, National Medical Center Siglo XXI, IMSS*
[3] *Gastroenterology and hepatology research laboratory, Pediatrics, Specialties Hospital Dr. Bernardo Sepúlveda, National Medical Center Siglo XXI, IMSS, Mexico*

Introduction and Objectives: Computed tomography (CT) is one of the most used and validated methods for the non-invasive diagnosis of sarcopenia; its measurement is not affected by the presence of obesity or ascites. The objective of the study was to know the frequency of sarcopenia in patients with liver cirrhosis with different degrees of liver reserve.

Materials and Patients: Patients who underwent liver function tests and an abdominal CT were included. The Child-Pugh index (CP) was obtained, and the skeletal muscle index (SMI) was calculated from the measurement of the cross-sectional area of the psoas muscle at the level of the third lumbar vertebra and normalized by the height of the patients (reference values for sarcopenia (Men <50cm2/m2; women <39cm2/m2).

Results: 110 patients were included (75 women and 35 men) with an average age of 54±11 years, in CP A (n=21), CP B (n=53), and CP C (n=36); with a history of non-alcoholic fatty liver disease (n=36), hepatitis C virus infection (n=19), primary biliary cholangitis (n=15), excessive alcohol consumption (n=10), and other etiologies (n=30). The SMI was significantly higher in Child-Pugh A patients (48.15±9 cm2/m2) compared to Child-Pugh B (44.19±9 cm2/m2) and Child-Pugh C (41.20±7 cm2/m2) patients. The frequency of sarcopenia was 59% (CP A: 33.3%; CP B: 43.4%; CB C: 66.6%).

Conclusions: The results of the study confirm that sarcopenia is common in patients with liver cirrhosis and increases as liver reserve deteriorates.

Ethical Statement: Approval for the study was obtained from the local ethics committee (R *2022-3601-239*).

Declaration of Interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101855

Metabolic reprogramming induced by fructose promotes therapy's failure in liver cancer cells *in vitro* and *in vivo*.

Lisette Chávez-Rodríguez[1,2], Oscar A. Escobedo Calvario[1,2], Johann Matschke[4,5], Verena Jendrossek[4,5], Felipe Masso[6], Araceli Páez Arenas[6], María C. Gutiérrez-Ruíz[2,3], Luis E. Gomez-Quiroz[2,3]

[1] *Graduate Program in Experimental Biology, DCBS, Universidad Autónoma Metropolitana Unidad-Iztapalapa, Mexico*
[2] *Area of Experimental and Translational Medicine, Department of Health Sciences, Universidad Autónoma Metropolitana-Iztapalapa, Mexico*

[3] *Laboratory of Experimental Medicine, Translational Medicine Unit, IIB/UNAM, National Institute of Cardiology Ignacio Chávez, Mexico*
[4] *Institute of Cell Biology (Cancer Research), University Hospital Essen, Virchowstrasse 173, D-45122, Essen, Germany*
[5] *German Cancer Consortium (DKTK) partner site Essen a partnership between DKFZ and University Hospital, Essen, Germany*
[6] *Translational Cardiology laboratory, Translational medicine unit, IIB, National Institute of Cardiology Ignacio Chávez, Mexico City, Mexico*

Introduction and Objectives: Metabolic reprogramming is a hallmark of cancer cells. Fructose metabolism is decreased in liver cancer cells to counteract the oxidative environment induced by fructose. Ketohexokinase (KHK) A is overexpressed, and its switch confers advantages to cancer cells. The **objective** was to investigate the effect of fructose metabolism on the aggressiveness of liver cancer cells.

Materials and Patients: KHK isoform expression was measured by qRT-PCR in Huh-7 and HepG2 cells. Metabolic characteristics of liver cancer cells (Huh-7 and HepG2) treated with a fructose (1mM) for 48h in a high glucose DMEM media (11mM) was developed using Mito Fuel Flex assay and Glycolysis Rate Assay using SeaHorse technology. To prove the hypothesis that fructose metabolism enhances aggressiveness, we performed proliferation and enzymatic assays. Chemoresistance assays (*in vitro* and *in vivo*) was developed using Huh-7 cells previously treated with Fructose (1mM) for 72h. Then, we applied Fructose (1mM), Cisplatin (CDDP, 22,11μM for in vitro assays or 100μM for in vivo assays) or Fructose (1mM) + CDDP (22,11μM for in vitro or 100μM for in vivo) for 48h.

Results: ***Huh-7 cells expressed higher levels of khk-a compared to HepG2 cells. The isoform switch was*** associated with improved fructose uptake and higher proliferation in Huh-7 cells. We did not detect differences in mitochondrial glucose or fatty acid oxidation capacity, but glutamine oxidation capacity was lower in Huh-7, indicating the overall dependence of this cell line on the glutamine pathway. However, we only detected differences with fructose-treated (Fru-treated) cells with less dependence on fatty acid oxidation in hepatoma cells, suggesting that fructose metabolism has a different effect with respect to the differentiation level of the cells. Next, we evaluated the glycolytic pathway in the aggressive cell line (Huh-7), and the analysis showed that Fru-treated cells contributed less to media acidification, suggesting the activation of alternative pathways by fructose. The pentose phosphate pathway was affected by fructose and inhibition of glutathione reductase abolished the benefits gained. We then assessed survival to CDDP treatment, and found that both, in vitro and in vivo, fructose treatment improved survival and resistance to CDDP therapy.

Conclusions: Fructose promotes a metabolic remodeling leading to the sustained proliferation of liver cancer cells. Specifically, fructose metabolism promotes alternative metabolic pathways that contribute to the aggressiveness of HCC cells. In addition, fructose may increase cancer cell survival and the treatment failure.

Ethics statement: All the cell lines were obtained from the American Type Culture Collection (ATCC). The material was obtained legally, ethically, and with due consideration for the well-being, privacy, and dignity of the donor.

Declaration of interests: None.

Funding: This work was partially funded by a grant from CONAHCYT Frontiers of Science: 1320. CONAHCYT scholarship: 790214. UAM-I: CBS 5/65.

https://doi.org/10.1016/j.aohep.2025.101856

Neutrophil-lymphocyte ratio as a prognostic factor in patients with alcoholic hepatitis.

Moises Coutiño-Flores[1], Jesús I. Mazadiego-Cid[1], Rogelio Zapata-Arenas[3], Katy A. Sánchez-Pozos[2], Antonio Coutiño-Flores[2], María R. Herrero-Maceda[1], Scherezada M.I. Mejía-Loza[1]

[1] *Gastroenterology, Juarez Hospital, Mexico*
[2] *Research Division, Juarez Hospital of Mexico*
[3] *Internal Medicine, General Hospital of Mexico Dr. Eduardo Liceaga, Mexico*

Introduction and Objectives: The neutrophil-lymphocyte ratio (NLR) has been used as a predictor of survival in critically ill patients. However, there are scarce studies that evaluate the relationship between NLR and alcoholic hepatitis. Thus, we aimed to determine the association between NLR with mortality and the degree of acute-on-chronic liver failure (ACLF).

Materials and Patients: Longitudinal, retrospective, observational and descriptive cohort study of a hospital center. Patients who attended from March 1, 2022, to April 30, 2024, to Gastroenterology service were included. The subjects met criteria for alcohol hepatitis established by the National Institute on Alcohol Abuse and Alcoholism: alcohol consumption >40 g/day (women) or >60 g/day (men) for six or more months, jaundice during the previous eight weeks, AST > 50 IU/L, AST/ALT ratio > 1.5, and both values < 400 IU/L, BT > 3.0 mg/dL. Patients with concomitant infections or conditions that could alter the NLR (steroid use, pancreatitis, hemorrhage, neoplasms) were excluded. Statistical analysis was performed with the SPSS version 26 program. To compare clinical values, Student's T-test or Mann Whitney U test were performed according to the distribution of the data. The association analysis between NLR and 30-day mortality, as well as the association between NLR and ACLF degrees, were carried out using a point-biserial correlation. Cohen's d test was performed to determine the effect size.

Results: This study included 58 patients with alcoholic hepatis (98% men). The mean of the INL was 24.3. There was significant difference between patients who died within 28 days compared with those who survived (Table 1). The main differences were observed in the following data: leukocytes ($p < 0.001$), creatinine levels ($p = 0.007$), BT ($p < 0.001$); as well as, in the indexes: INL ($p < 0.001$), CLIF SCORE ($p < 0.001$), MELD ($p = 0.02$) and MELD Na ($p = 0.01$). (Table 1). The mean NLR value in patients who survived was approximately three times the value presented in patients who died within 28 days [23.0 (19.1, 28.6) vs. 8.0 (5.0, 11.0); ($p < 0.001$)]. A gradual increase in severity-dependent NLR was identified based on the CLIF SCORE scale (significant difference among the three groups considering CLIF SCORE 0). In addition, significant associations between NLR and 28-day mortality ($p < 0.001$), and between NLR and the degree of ACLF ($p < 0.001$) were found. According to Cohen's test, the effect size of the NLR was moderate (0.678).

Conclusions: The association between high NLR levels and mortality within 28 days is confirmed. Furthermore, there is an association between NLR and the severity of ACLF. Therefore, the NLR could be a useful prognostic factor in the clinical practice for alcoholic hepatitis. However, more studies with larger sample sizes are required.

Ethical statement: The protocol was registered and approved by the Ethics Committee. Patient confidentiality was maintained, and informed consent was obtained.

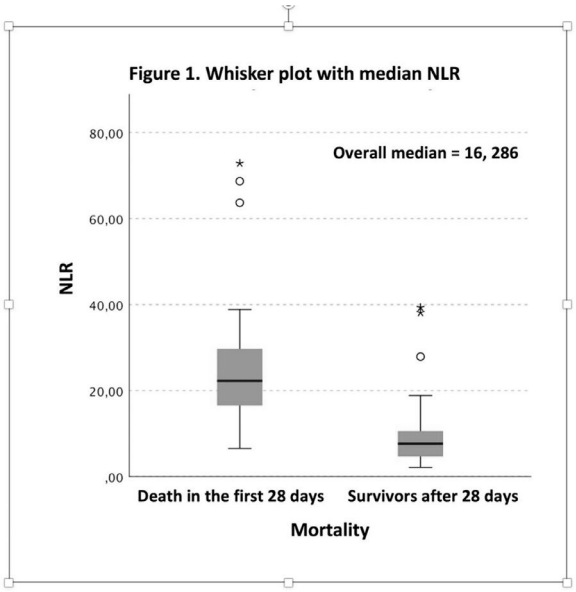
Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1
Comparison of clinical data and severity scales between surviving and non-surviving subjects at 28 days.

Variable	Death in the first 28 days (n=33)	Survivors after 28 days (n=25)	*p*
Age	46.0 ± 8.7	41.8 ± 10.1	0.094
Leukocytes	21.6 (15.0, 29.6)	9.6 (7.7, 13.2)	< **0.001**
Platelets	168.9 ± 97.1	138.8 ± 91.9	0.234
PT	23.0 (19.1, 28.6)	22.2 (17.9, 25.7)	0.236
BT	24.4 ± 9.3	15.0 ± 10.1	< **0.001**
INR	2.00 (1.79, 2.70)	1.94 (1.50, 2.27)	0.118
Cr	2.16 (1.30, 3.19)	1.30 (0.82, 2.09)	**0.007**
NLR	23.0 (18.0, 34.0)	8.0 (5.0, 11.0)	< **0.001**
CLIF SCORE	56.18 ± 6.28	46.88 ± 6.35	< **0.001**
MADDREY	71.3 (55.3, 99.1)	65.6 (33.4, 74.5)	0.059
MELD	35.7 ± 12.5	25.0 ± 8.6	< **0.001**
MELD NA	39.2 ± 15.8	29.7 ± 13.8	**0.021**

BT, Total bilirubin; CLIF SCORE, Chronic Liver Failure score; Cr, Creatinine; INR, International Normalized Ratio; MADDREY, Maddrey's discriminant function; MELD, Model for End-Stage Liver Disease; MELD NA, MELD sodium; NLR, Neutrophil-lymphocyte ratio; PT, Prothrombin Time.



https://doi.org/10.1016/j.aohep.2025.101857

Importance of the profile of inflammatory and anti-inflammatory cytokines in patients with Hepatitis C according to degrees of fibrosis.

Abigail Hernandez-Barragan[1], Moisés Martínez-Castillo[1], Adrián Flores-Sánchez[1], Jesús Dorantes-Alvarez[1], Isabel Villagómez-López[1], Marisela Hernandez-Santillan[1], Andrea Garcia-Avalos[1], José Luis Pérez-Hernández[2], Fátima Higuera-De la Tijera[2], Paula Cordero-Pérez[3], Linda Muñoz-Espinosa[3], Gabriela Gutierrez-Reyes[1]

[1] *Liver, Pancreas, and Motility Laboratory (HIPAM), Experimental Medicine Research Unit, Faculty of Medicine, UNAM, General Hospital of Mexico, Dr. Eduardo Liceaga, Mexico*
[2] *Gastroenterology Department, General Hospital og México "Dr. Eduardo Liceaga" Mexico City, México*
[3] *University Hospital "Dr. José Eleuterio González", Medicine Faculty, UANL, Mexico*

Introduction and Objectives: The cure for chronic Hepatitis C (HCV) is a milestone for humanity, however, patients could still progress toward hepatocellular carcinoma even after receiving direct-acting antiviral treatment [1]. Therefore, determining the inflammatory (IFN-γ, TNF-α), and anti-inflammatory (IL-10- IL-1RA) profiles in patients with different degree of liver fibrosis are the important aim in researching of new biomarkers.

Materials and Methods: Prospective, cross-sectional and multicenter study; approved through the ethics committee of the UNAM, and the Hospital General de Mexico, patients with chronic Hepatitis C (CHC), and healthy subjects (control group) were included. A personalized survey of chronic and recent pathologies, as well as alcohol consumption, was performed in all the subjects. Biochemical and hematological laboratory test were performed, including Fibroscan and/or Fibrotest to determinate the degree of fibrosis. In addition, the cytokine profile (IFN-γ, TNF-α, IL-10 and IL-1RA) was quantified in the serum by multiple suspension array. The data was analyzed by Kruskal-Wallis, Mann-Whitney U and ANOVA statistical tests by SPSS v.22 software, considering $p > 0.05$

Results: A total of 180 CT subjects were included; whereas 90 patients with CHC with different grades of fibrosis: F0=20, F1=15, F2=15, F3=16 and F4=24, were enrolled. As has been studied, Hepatitis C Virus inhibits the activity of IFN-γ, despite of this, its concentration has been controversial in different populations. In our population, the levels were low with the exception for F2 ($p<0.01$). Another important factor of inflammation is TNF-α, which was found increased in all stages: F0-F4 and in F2 up to 6 times more than the CT and F4 groups ($p<0.001$). When analyzing the results of anti-inflammatory cytokines; the highest concentration of IL-10 was observed in F2 (increased up to 7 times) ($p<0.001$), while for IL-1RA in F2 it was found to be increased up to 10 times more than in F1 and F3 ($p<0.05$); what it shows that in F2 the inflammatory/anti-inflammatory microenvironment at the peripheral level has more activity. On the other hand, the highest concentration of IL-1RA was observed in F4, which may be actively participating in the repair due to decreased mediators of inflammation.

Conclusions: The F2 stage is an important turning point, indicating a shift in the microenvironment due to the accumulation of the extracellular matrix, making it clear the importance of measuring inflammation at intermediate stages of fibrosis, which would allow for impacting the limitation of the hepatic fibrogenic process.

Ethics statement: The protocol was approved by the Ethics and Research commissions of the General Hospital of Mexico "Dr. Eduardo Liceaga" (HG/DI/16/107/03/082), and from the Medicine Faculty UNAM (FMD/DI/15/2015)

Declaration of interest: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101858

Nopal and Pirfenidone Ameliorate Epididymal Fat Weight and Anthropometric Parameters in a Mouse Obesity Model with Diethylnitrosamine

Jorge Gutiérrez-Cuevas[1], Daniel López-Cifuentes[1], Ana S. Sandoval-Rodríguez[1], Juan Armendariz-Borunda[1,2]

[1] *Department of Molecular Biology and Genomics, Institute for Molecular Biology in Medicine and Gene Therapy, University of Guadalajara, CUCS, Guadalajara, Jalisco, Mexico*
[2] *Tecnologico of Monterrey, EMCS, Campus Guadalajara, Zapopan, Jalisco, Mexico*

Introduction and Objectives: Obesity is associated with liver diseases. Mexico has a high prevalence of obesity and metabolic

dysfunction-associated steatotic liver disease (MASLD). Nopal and Pirfenidone (PFD) increase insulin signaling and decrease hepatic steatosis in obese mice. We investigated PFD and nopal on anthropometric parameters in obese mice and with diethylnitrosamine (DEN).

Materials and Methods: Five-six-week-old male C57BL/6J mice were treated with a single dose of DEN (25 mg/kg) and fed with a high fat diet (HFD, 60 kcal% from fat: D12492) for 16 weeks. Animals were provided ad libitum access to food and water. The mice were randomly divided into eight groups (n=5 for each group): normal diet (ND), ND plus DEN (ND+DEN), HFD, HFD plus DEN (HFD+DEN), HFD plus DEN plus supplements (cellulose, maltodextrin, and casein; HFD +DEN+SUPPL), HFD plus DEN plus nopal (HFD+DEN+NOP), HFD plus DEN plus PFD (HFD+DEN+PFD), and HFD plus DEN plus NOP plus PFD (HFD+DEN+NOP+PFD). Freeze-dried nopal in fine powder (7%) were mixed with HFD and PFD (300 mg/kg/day) also were mixed with HFD. PFD dosage was adjusted according to body weight and mixed with the diets three times a week. Food intake was measured three times a week, and measurement of body weight each week. Experiments were done according to ARRIVE guidelines. Statistical significance of anthropometric data was determined for parametric data with one-way ANOVA analysis of variance followed by Tukey's post hoc analysis, statistical analyses were performed using SPSS.

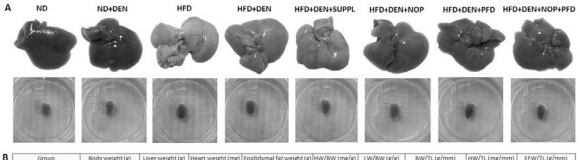
Results: All HFD mice developed obesity (P≤0.05), and PFD and NOP plus PFD reduced body weight (P≤0.05). Liver weight was increased in HFD, HFD+DEN, and HFD+DEN+SUPPL groups (P≤0.05), and epididymal fat was increased in all HFD mice (P≤0.001), but NOP, PFD, and NOP plus PFD reduced liver weight (P≤0.05) and PFD, and NOP plus PFD decreased epididymal fat (P≤0.05). Heart weight was increased in HFD, HFD+DEN, HFD+DEN+SUPPL, and HFD+DEN+NOP groups (P≤0.05), but NOP (p=0.06), PFD, and NOP plus PFD reduced it (P≤0.001). The heart weight/body weight ratio was reduced in all mice with HFD (P≤0.001), and only NOP plus PFD increased the heart weight/body weight ratio (P≤0.05). Liver weight/body weight ratio tended to increase in HFD and HFD plus DEN, but decreased with NOP, PFD, and NOP plus PFD (P≤0.05). Body weight/tibia length ratio was increased in all HFD mice (P≤0.01) and decreased with PFD and NOP plus PFD (P≤0.05). Heart weight/tibia length ratio was increased in HFD, HFD+DEN, HFD+DEN+SUPPL, and HFD+DEN+NOP (P≤0.01), but decreased with PFD and NOP plus PFD (P≤0.001). Epididymal fat weight/tibia length ratio was increased in all HFD mice (P≤0.001) but decreased with PFD (P=0.07) and NOP plus PFD (P≤0.05) (Figure 1).

Conclusions: In this study, we showed that intervention with nopal and pirfenidone improved epididymal fat weight and anthropometrical parameters in obese mice with DEN, this effects observed are possibly due to increased insulin sensitivity and decreased hepatic steatosis by nopal and pirfenidone.

Ethical statement: CUCS Research Committee at the University of Guadalajara approved this study (protocol number: CI-01724).

Declaration of interests: None.

Funding: This work was supported by CONAHCYT, Mexico, under grant CF-2023-I-473 to JGC.



Group	Body weight (g)	Liver weight (g)	Heart weight (mg)	Epididymal fat weight (g)	HW/BW (mg/g)	LW/BW (g/g)	BW/TL (g/mm)	HW/TL (mg/mm)	EFW/TL (g/mm)
ND	28.2 ± 0.66	1.37 ± 0.04	120.6 ± 1.83	0.81 ± 0.05	4.28 ± 0.04	0.04 ± 0.0006	1.57 ± 0.03	6.73 ± 0.11	0.04 ± 0.003
ND+DEN	27.8 ± 0.80	1.27 ± 0.05	115 ± 3.61	0.57 ± 0.04	4.13 ± 0.09	0.04 ± 0.0008	1.53 ± 0.04	6.35 ± 0.20	0.03 ± 0.002
HFD	50.6 ± 1.02***	2.87 ± 0.20***	162.2 ± 6.86***	1.85 ± 0.04***	3.20 ± 0.08***	0.05 ± 0.003	2.76 ± 0.04***	8.84 ± 0.34***	0.10 ± 0.002***
HFD+DEN	49.6 ± 0.74$^{\#\#\#}$	2.32 ± 0.06$^{\#\#\#}$	162 ± 8.27$^{\#\#\#}$	2.08 ± 0.09$^{\#\#\#}$	3.26 ± 0.15$^{\#\#\#}$	0.04 ± 0.001	2.72 ± 0.04$^{\#\#\#}$	8.90 ± 0.43$^{\#\#\#}$	0.11 ± 0.004$^{\#\#\#}$
HFD+DEN+SUPPL	48.2 ± 0.86$^{\#\#\#}$	1.92 ± 0.10$^{\#}$	143.8 ± 1.74$^{\#\#}$	2.11 ± 0.11$^{\#\#\#}$	2.98 ± 0.09$^{\#\#\#}$	0.03 ± 0.003	2.71 ± 0.03$^{\#\#\#}$	8.10 ± 0.08$^{\#\#\#}$	0.11 ± 0.007$^{\#\#\#}$
HFD+DEN+NOP	43.2 ± 2.97$^{\#\#\#}$	1.59 ± 0.19$^{\#}$	140.4 ± 5.71$^{\#\#\$\$}$	1.87 ± 0.04$^{\#\#\#}$	3.28 ± 0.14$^{\#\#\#}$	0.03 ± 0.002*	2.39 ± 0.15$^{\#\#\#}$	7.85 ± 0.33$^{\#\#}$	0.10 ± 0.002$^{\#\#\#}$
HFD+DEN+PFD	41.8 ± 1.46$^{\#\#\$,*}$	1.43 ± 0.09**	121 ± 2.98***	1.73 ± 0.04$^{\#\#\$,*}$	2.90 ± 0.07$^{\#\#\#}$	0.03 ± 0.001$^{\$,**}$	2.31 ± 0.07$^{\#\#\$,*}$	6.71 ± 0.15***	0.09 ± 0.002$^{\#\#\$,\#,\$,\$\$}$
HFD+DEN+NOP+PFD	36.6 ± 1.60$^{\#\#\$,***,\$\$\$}$	1.27 ± 0.09$^{***,\$}$	124 ± 5.64***	1.70 ± 0.09$^{\#\#\$,\$\$}$	3.39 ± 0.06$^{\#\#\$,\$\$}$	0.03 ± 0.001$^{\$,**}$	2.01 ± 0.08$^{\#\#\$,***,\$\$\$,\#}$	6.82 ± 0.18$^{***,\$}$	0.09 ± 0.005$^{\#\#\$,\$\$}$

Figure 1. Effects of Nopal and Pirfenidone on anthropometric values in obese mice. A) Macroscopic comparison of liver and heart between obese mice. B) Anthropometric values in obese mice. HW, Heart Weight; BW, Body Weight; LW, Liver Weight; TL, Tibia Length; EFW, Epididymal fat weight; ND, Normal Diet; DEN, Diethylnitrosamine; HFD, High Fat Diet; SUPPL, Supplements; NOP, Nopal; PFD, Pirfenidone. Data are expressed as mean ± SEM. For group comparisons (n = 5/group), one-way ANOVA followed by Tukey's post hoc analysis. ***P<0.001 vs ND; $^{\#}$P<0.05, $^{\#\#}$P<0.01, $^{\#\#\#}$P<0.001 vs ND+DEN; p=0.07, p=0.06, *P<0.05, **P<0.01, ***P<0.001 vs HFD+DEN; $^{\$}$P<0.05, $^{\$\$}$P<0.01, $^{\$\$\$}$P<0.001 vs HFD+DEN+SUPPS; $^{\$}$P<0.05 vs HFD+DEN+NOP; $^{\$}$P<0.05 vs HFD+DEN+PFD.

https://doi.org/10.1016/j.aohep.2025.101859

Polycystic liver disease in a third level hospital

Luis A. Torrez-Arias, Maria F. Higuera-De la Tijera

Gastroenterology, General Hospital of Mexico "Dr. "Eduardo Liceaga.", Mexico

Introduction and Objectives: Polycystic liver disease is part of a group of rare congenital disorders that result from altered development of the embryonic ductal plate. The prevalence is 1/10,000 to 1/158,000. The objective is to describe the characteristics of patients with polycystic liver disease at the General Hospital of Mexico.

Materials and Patients: Observational, cross-sectional, descriptive study, case series type, during the period from January 2018 to May 2024, carried out in the outpatient clinic of the liver clinic in the Gastroenterology service of the General Hospital of Mexico "Dr. "Eduardo Liceaga." Patients over 18 years of age who had at least one imaging study (ultrasound of the liver and bile ducts, computed tomography of the abdomen, magnetic resonance imaging of the abdomen) where characteristic imaging data of hepatic cysts with a number equal to or greater than 10 were identified. According to findings, it was classified according to Gigot and also as autosomal dominant polycystic liver disease (ADPD) and autosomal dominant polycystic kidney disease (ADPD). The clinical records were collected, the following data were collected: sex, age, body mass index, comorbidities, a history of family members with polycystic liver and/or kidney disease, the presence of high blood pressure, unintentional weight loss, studies were intentionally collected. laboratory tests of liver biochemical tests, extrahepatic symptoms, complications of polycystic disease and previous treatments, if they are in the transplant protocol. The statistics of the liver clinic offices were reviewed. Frequencies and percentages were used to summarize qualitative variables and mean and standard deviation were used for quantitative variables.

Results: During the period from January 2018 to May 2024, 56 patients were included, the majority of women (83.9%). With an average age of 58.8 ±20 years. Of them, 26.8% as EPHAD, and 73.2% are associated with EPRAD. 12 patients with Gigot III. No weight loss in 92.8%. 25% with a family history of polycystic kidney and/or liver disease. The most frequent comorbidity was SAH in 44.6% followed by those who did not present comorbidities in 39.3%. The most frequent symptom was abdominal pain in 26.8%, followed by abdominal distention and early satiety in 14.3 and 12.5% respectively and asymptomatic patients in 44.6%. Complications were presented as cyst infection and bile duct obstruction, which corresponds to 3.6%. The results of the analysis up to 5.4% with alteration of the synthesis function, 5.4% with alteration of the transaminases, in the blood count 5.4% between mild and moderate anemia, 3.6% with leukocytosis, 7.1% with thrombocytopenia, the Renal function was altered in 32.2%, and dyslipidemia was recorded in 17.9 to 35.7%. In statistics of the liver clinic outpatient consultation, 61,493 consultations were granted, and the prevalence is calculated at 0.09%.

Conclusions: Polycystic liver disease is a rare disorder with a prevalence of 0.09% for our institution. Most growth monitoring should be performed with imaging studies and questionnaires for symptoms and quality of life. Gigot III and severe symptoms must be individualized for surgical or definitive treatment by liver transplant.

Ethical statement: The study was carried out in accordance with good clinical practice guidelines and the Declaration of Helsinki.

Declaration of interests: None.

Funding: This study was not funded

https://doi.org/10.1016/j.aohep.2025.101860

Participation of the immune response and oxidative stress in alcoholism and liver cirrhosis due to alcohol

Leonardo S. Juárez-Chávez[1],
José L. Pérez-Hernández[1],
Abigail Hernández-Barragán[2], Zaira Medina-Avila[2],
Marisela Hernandez-Santillan[2],
Moisés Martínez-Castillo[2],
Fátima Higuera-De la Tijera[1],
Gabriela Gutiérrez-Reyes[2]

[1] *Gastroenterology Department, General Hospital of México Dr. Eduardo Liceaga, Mexico City, Mexico*
[2] *Liver, Pancreas, and Motility Laboratory (HIPAM), Experimental Medicine Research Unit, Faculty of Medicine, General Hospital of Mexico, Dr. Eduardo Liceaga, Mexico, UNAM, Mexico City, Mexico*

Introduction and Objectives: The spectrum of alcoholic liver disease (ALD) includes steatosis, steatohepatitis, alcoholic hepatitis, fibrosis, cirrhosis, and hepatocellular carcinoma. The pathophysiology of liver damage due to chronic alcohol consumption is complex. It is partly a result of reactive oxygen species (ROS) and reactive nitrogen species (RNS), products of oxidative stress, which is one of the mechanisms that will activate the immune system creating a pro-inflammatory state, increasing the levels of several cytokines (TNF-α, IL-1, IL-6, IL-8, MCP-1 and TGF-1).

Objective: To study oxidative stress and the production of proinflammatory cytokines that intervene in the different stages of liver damage due to alcohol (alcoholism, alcohol-related liver cirrhosis, and alcoholic hepatitis).

Material and Patients: A cross-sectional, prospective, and analytical study that included patients from the Gastroenterology service and donors from the Blood Bank. Patients at different stages of the disease and a control group of healthy subjects (blood bank donors) were included. They were divided into 4 groups: Alcoholism (OH), alcoholic liver cirrhosis (CiOH), alcoholic hepatitis (HA), and healthy controls (CT). From each participant, 20 ml of peripheral blood was obtained for the relevant determinations. Normally distributed data were obtained and ANOVA and orthogonal analyses were performed to detect group differences. A U-Mann Whitney test was used. $P < 0.05$ was taken as a significant difference.

Results: 236 subjects were included: 67 patients in OH group; 40 patients with CiOH; 39 patients with Alcoholic Hepatitis (AH), and 90 subjects CT. The gender distribution in patients with ALD (CiOH, and HA) was 77.5% men and 22.5% women. The average alcohol consumption was 376.6±151.6 grams. The CiOH and HA groups presented alterations in platelets, bilirubin, and cytolysis markers at the expense of AST with a significant difference ($p<0.05$). Regarding oxidative stress, lipoperoxidation was greater in patients with chronic disease (CiOH) and protein damage (protein carbonyls) was greater in HA with $p<0.05$. Regarding cytokines and chemokines, TNF-α presented a higher level in CiOH and HA ($p<0.5$), IL-6 presented an elevation in CiOH and HA ($p<0.05$); IL-10 was elevated in OH, CiOH and HA, MCP-1 and IL-8 showed greater elevation in HA, $p<0.05$.

Conclusions: Oxidative stress and the elevation of proinflammatory cytokines and chemokines have different behaviors in the various stages of alcohol liver disease, which influences the progression and prognosis of the disease. These findings could be considered as possible therapeutic targets.

Ethical statement: Each patient has explained the research in detail. Those who decided to participate signed the informed consent letter.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1
Demographic and biochemical characterization of the study groups.

	OH (67)	CiOH (40)	AH (39)	CT (90	P*
Gener (n) (%)					
Female	21(31)	2(5)	2(5)	28(26)	
Male	46 (69)	38(95)	37(95)	62(74)	b*, c*
Age	46 ±10	47±8	38±7	38±10	a*, b*, e*
BMI	27±7	27±7	27±5	28±4	
gr OH/day	320±125	350±130	460±200	1.3±2	a*, b*, c*
Hb (gr/dL)	14±4	12±3	11.2±0.5	17±1	a*, b*, c*
Platelets (1000 × 3)	205±95	138±90	93±36	268±65	b*, c*
BT (mg/dL)	2.3±1.1	3±0.4	18.8±2.4	0.8±0.03	a*, b*, c*, f*
BD (mg/dL)	1.4±0.5	1.8±0.2	8.6±1.9	0.7±0.03	a*, b*, c*
AST (U/L)	39±10	63±6	142±17.9	30±1	b*, c*, f*
ALT (U/L)	31±5	37±3	57.1±5.4	28±2	b*, c*, f*
GGT (U/L)	70.8±21.9	206±48.8	254±74.8	29.6±2.8	a*, b*, c*, e*

(OH= Alcoholic, CiOH= alcohol cirrhosis, AH= Alcoholic hepatitis, CT= control). Statistical differences: **a**. OH vs CT, **b**. CiOH vs CT, **c**. HA vs CT, **d**. OH vs CiOH, **e**. OH vs HA y **f**. CiOH vs HA. *p < 0.05

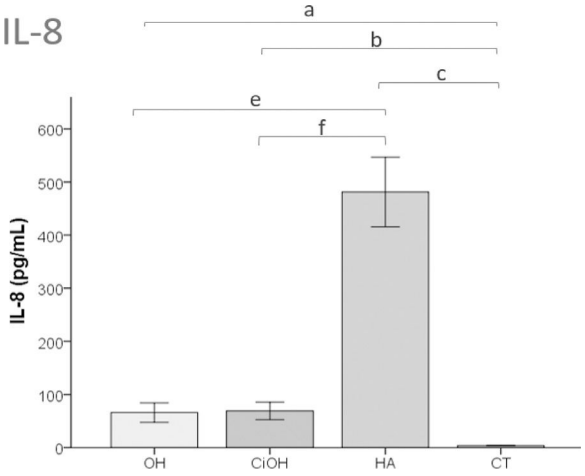


Figure 1. Interleukin IL-8.
(OH= Alcoholic, CiOH= alcohol cirrhosis, HA= Alcoholic hepatitis, CT= control). Statistical differences: a. OH vs CT, b. CiOH vs CT, c. HA vs CT, d. OH vs CiOH, e. OH vs HA y f. CiOH vs HA. *p < 0.05

https://doi.org/10.1016/j.aohep.2025.101861

Patterns of antimicrobial resistance and susceptibility in patients with spontaneous bacterial peritonitis at the General Hospital of Mexico "Dr. Eduardo Liceaga"

Gabriela Rangel-Zavala, Paloma M. Diego-Salazar, Karina Cazarín-Chávez, José L. Pérez-Hernández, Fatima Higuera-de-de-Tijera

Gastroenterology and Hepatology Service at the General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico

Introduction and Objectives: Spontaneous bacterial peritonitis (SBP) is a serious complication in cirrhotic patients, with high morbidity and mortality. Antimicrobial resistance complicates treatment and increases complications. This study aims to determine resistance patterns in microorganisms in SBP to improve treatment efficacy.

Materials and Patients: A descriptive, observational, and retrospective study on patterns of antimicrobial resistance and

susceptibility in patients with spontaneous bacterial peritonitis was conducted at the General Hospital of Mexico "Dr. Eduardo Liceaga" between January 2022 and January 2024. Clinical information was collected from the records of the Gastroenterology Service. Microbiological results were obtained from reports from the Microbiology Service. Patients diagnosed with hepatic cirrhosis and meeting the criteria for SBP were included. Clinical and microbiological data were collected, analyzing variables such as age, sex, etiology of liver disease, and associated decompensations, such as gastrointestinal bleeding and hepatic encephalopathy. Antimicrobial resistance patterns, as well as clinical and microbiological characteristics of patients with SBP, were examined. This analysis aims to contribute to the optimal management of SBP and the development of more effective antimicrobial treatment strategies.

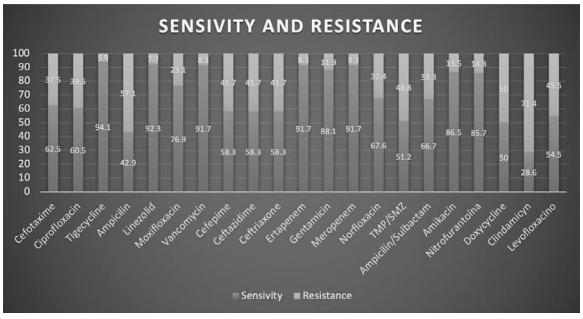
Results: A total of 48 patients were included, 52.1% were men, with a mean age of 52.4 ± 12.7 years. The predominant etiology of cirrhosis was alcohol, present in 56.3% of cases. Among the isolated bacteria, Escherichia coli (56.25%), Klebsiella pneumoniae (12.5%), Enterococcus faecalis (6.25%), Streptococcus spp. (6.25%), Staphylococcus epidermidis (4.16%), Staphylococcus aureus (4.16%), Enterococcus gallinarum (4.16%), Staphylococcus marcescens (2.08%), Acinetobacter sobria (2.08%), and Staphylococcus haemolyticus (2.08%) were prominent. The sensitivity and resistance table to different antimicrobials are presented in Graph 1.

Conclusions: Antimicrobial resistance is increasing in patients with SBP, leaving few effective alternatives, where cephalosporins and quinolones, recommended treatments, are no longer sufficiently useful, which is dangerous in the context of empirical therapy given the high risk of therapeutic response failure.

Ethical statement: This study was reviewed and approved by the ethics committee.

Conflict of Interest: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.



https://doi.org/10.1016/j.aohep.2025.101862

Ceftriaxone versus cefotaxime in the treatment of spontaneous bacterial peritonitis

Carlos A. Campoverde-Espinoza,
Daniel Santana-Vargas, Alejandro Tovar-Durán,
Brenda Govea-Mendoza, Verónica G. Pérez-Pérez,
Fátima Higuera-De la Tijera, José L. Pérez-Hernández

Hepatology and liver transplantation, Hospital General de México "Dr. Eduardo Liceaga", Mexico

Introduction and Objectives: Infections in cirrhotic patients occur in one-third of hospitalized patients. Spontaneous infections (spontaneous bacteremia, spontaneous bacterial peritonitis (SBP), and spontaneous empyema) are the most common and their management with third-generation cephalosporins (cefotaxime or ceftriaxone) is recommended. The effect of albumin on in vitro antimicrobial activity is greater for cefotaxime.

Materials and Patients: This is a retrospective, observational, and analytical study. We included clinical records of patients admitted to the Gastroenterology service of the Hospital General de México "Dr. Eduardo Liceaga" from March 2021 to February 2024 with a diagnosis of SBP ≥ 250 polymorphonuclears (PMN), comparing two different treatments (cefotaxime 2gr c/12 hours vs ceftrixone 1 or 2gr/day) and follow-up one year after the event. We evaluated the response to treatment with a second paracentesis with 48 hours of antibiotic therapy. We determined the recurrence at 12 months and the relationship with serum albumin levels in treated patients. We excluded patients with secondary bacterial peritonitis, tuberculosis or carcinomatosis, and previous antibiotic use (except rifaximin). Qualitative variables were expressed as frequencies and percentages; numerical variables as means and standard deviation. We used X2, Student's t-test, and Mann-Whitney U to compare the variables. To compare the percentages of deaths per treatment, response rate, and recurrences at one year, we used the Z test for contingency tables. The log-rank test and the Kaplan-Meier survival curve were used to evaluate survival per treatment at 30 days. A value of $P < 0.05$ was considered statistically significant.

Results: Out of 950 hospitalized cirrhotic, 6.42% (61) presented SBP. 63.9% were male and aged 52±11.9 years. Etiology of cirrhosis, 39.3% alcohol, 26.2% unfiliated, 14.8% MASLD, and 8.2% autoimmune hepatitis. Comparing groups, 29 patients with cefotaxime and 32 with ceftriaxone, with no differences concerning Child-Pugh, MELD score (23 vs 31, p=0.07), acute on chronic liver failure (ACLF) (56.5% vs 43. 5%, p=0.79), ACFL points (55 vs 53, p=0.52), leukocytes, PMN and DHL levels in ascites fluid (p=0.55, p=0.45 and p=0.52), and serum albumin (2.32g/dl vs 2.26gr/dl, p=0.71). An equal response rate was observed at 28/32 (87.5%) for cefotaxime and 26/29(89.7%) for ceftriaxone with no statistical differences between groups. The recurrence rate was similar with 3 cases for each group with no differences between them. The mortality rate was 14/61(23%); 4/32(12.5%) for cefotaxime and 10/29(34.5%) for ceftriaxone with statistical differences between groups. At 30 days total mortality was 9/61(14.8%) with 2/32(6.2%) for cefotaxime and 7/29 (24.13%) for ceftriaxone with no difference between groups Log-Rank(1) = 3.75 p=0.053.

Conclusions: The ceftriaxone or cefotaxime is equally effective in patients with SBP, with no difference in ACLF, serum albumin level, or ceftriaxone dose(1-2gr/day). The recurrence rate was similar between both treatments, with a tendency towards higher mortality for ceftriaxone without differences in terms of etiology, ACLF, or the severity of cirrhosis.

Ethical Statement: Retrospective study, the identity of the patients was kept secret at all times.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

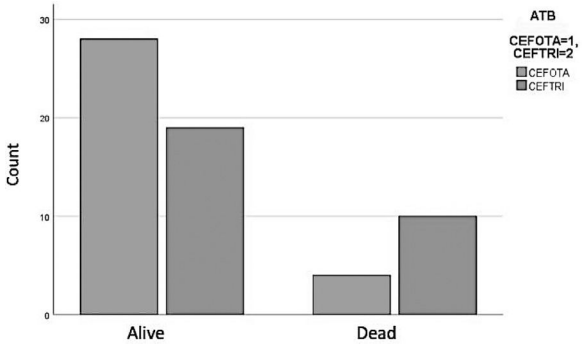


Figure 1. Bars expressing patients who survived or died with respect to type of antibiotic.

Source: Data extracted from records of the Gastroenterology service of the Hospital General de México "Dr. Eduardo Liceaga".

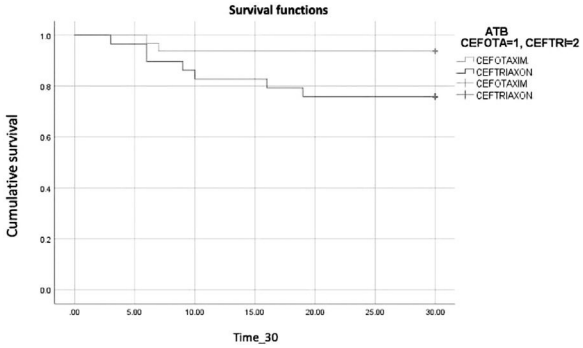


Figure 2. Kaplan Meyer survival curve with respect to type of antibiotic.
Source: Data extracted from records of the Gastroenterology Service of the Hospital General de México "Dr. Eduardo Liceaga".

https://doi.org/10.1016/j.aohep.2025.101863

The role of the prognostic nutritional index as a prognostic factor in patients with hepatocellular carcinoma.

Vilma Hernandez-Garza, Berenice Lorenzo-Valle, Kenia Michel Bastida-Guadarrama, Santiago Camacho-Hernandez, Fátima Higuera-de-la-Tijera

Department of Gastroenterology and Hepatology, General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico City, Mexico

Introduction and Objectives: Immune-nutritional status has been demonstrated to be associated with prognosis in patients with various malignancies. The aim of this study is to determine the association of the nutritional prognostic index (PNI) with survival and assess the correlation between PNI and clinic-pathological parameters in HCC patients.

Materials and Patients: An observational, retrospective, descriptive and case series study was performed. We included 69 patients from a third-level hospital with a diagnosis of HCC from February 01, 2019 to July 24, 2023 and studied their survival 12 months after diagnosis. We determined the association between PNI status and their clinic-pathological characteristics and evaluated the impact of PNI on the HCC patient survival. The following formula was used to determine PNI: $10 \times$ serum albumin (g/dL) $+ 0.005 \times$ total lymphocyte count (per μL). Clinic-pathological characteristics related to disease prognosis included age, sex, body mass index (BMI), alpha-fetoprotein (AFP) value, the presence or not of cirrhosis, tumor size, ECOG score, and BCLC grade. Qualitative data are expressed as percentages and quantitative data as mean±SD. Statistical comparison was performed with two-tailed unpaired Student's t-test or chi-square and Fisher's exact test. Statistical significance was defined as $P<0.05$.

Results: Of the 69 patients diagnosed with HCC, most of the studied population was found to involve males at 56.52% while females were reported at 43.48%, with an age range of 26-81 years and a median age of 61.84, 61.84±9.8 (59.53-64.15). Of the total sample, 10.14% were patients with no diagnosis of cirrhosis while 89.86% were patients with some degree of cirrhosis (Child Pugh Stages: A 37.68%, B 43.48%, C 8.70%). The results indicated that low PNI is associated with poor prognosis while high PNI was found to be beneficial for survival with a 95 % CI=35.48±8.41 (32.42-38.54), 95% CI=40.86±5.42 (39.19-42.54) p=0.0019, respectively. It is also associated with more favorable outcomes, such as lower AFP, lower ECOG grade and lower BCLC staging (p=0.0371, p=0.0303, p= 0.002), respectively. However, we found that age, sex, presence or absence of cirrhosis, BMI and tumor size were not statistically significantly associated with the PNI value.

Conclusions: PNI is an independent predictive indicator of survival and is significantly associated with serum AFP, ECOG score, and BCLC stage in patients with HCC.

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

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101864

Clinical and demographic characteristics of liver transplant recipients who develop steatosis in the liver allograft.

Edgar A. Quezada-Cornejo[1], María F. Hernández-Torres[1], Pedro A. López-Hernández[1], Alma L. Kuljacha-Gastelum[2]

[1] *Department of Gastroenterology, High Specialty Unit 25, Monterrey, NL, Mexico*
[2] *Gastroenterology, Hepatology & Liver Transplant, Ángeles Valle Oriente Hospital, Monterrey, NL, Mexico*

Introduction and Objectives: Liver steatosis (LS) can develop in liver transplant (LT) recipients, with different studies reporting prevalence of 30-60%, our country has a high prevalence of the components of metabolic syndrome. The objective of this study is to describe the characteristics of liver transplant recipients who develop steatosis.

Materials and Patients: Retrospective, transversal and descriptive study in which 28 LT recipients with diagnosis of LS after LT were included, data was retrieved from patients clinical file and the following data were considered: age, sex, history of obesity, arterial hypertension, diabetes mellitus (DM), dyslpidemia and metabolic syndrome (MS) prior and after LT. Other data included were etiology of cirrhosis, immunosuppressive treatment and liver biochemistry at the moment of diagnosis.

Results: A statistic sample of 28 LT recipients who developed LS after LT was analyzed, 12 were male (42.9%) and 16 female (57.1%) with a medium age of 52 (27-74). The medium of post-LT years at diagnosis was 8 years (1-19). Etiology of cirrhosis was autoimmune in 14 (50%) patients, viral in 6 (21.4%), steatosis in 4 (13.8%) and alcohol in 4 (13.8%), the diagnostic method was imaging in 15 (53.6%) patients and biopsy in 13 (46.4%). The medium body mass index (BMI) was 28.6 (22-39), presence of pre-LT DM in 4 (13.8%) patients and post-LT DM in 15 (53.6%), pre-LT and post-LT obesity was found in 5(10.7%) and 15 (53.6%) patients, respectively, pre-LT and post-LT arterial hypertension in 3 (10.7%) and 11 (39.3%) patients respectively, pre-LT and post-LT dyslipidemia in 0 (0%) and 22 (78.6%) respectively, pre-LT and post-LT MS in 0 (0%) and 15 (53.6%) respectively. 24 (85.7%) patients used prednisone at diagnosis with a medium dose of 11.8 milligrams (5-30). Previous to diagnosis, 24 (85.7%) received tacrolimus and 23 (82.1%) sirolimus. Liver biochemistry showed the following mediums: ALT 85.3 (16-406), 50.5 (14-273), ALP 139.8 (38-519), GGT 237 (11-2296) and TBIL 0.7 (0.2-1.5).

Conclusions: This study highlights the frequency with which metabolic comorbidities after LT presented in comparison to the ones presented before LT, especially DM, obesity and dyslipidemia. Concluding, LT recipients should be tightly monitored for these metabolic parameters to prevent LS in a timely manner.

Ethical statement: The identification of patients was protected; informed consent was obtained.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Characteristics of LT recipients who develop steatosis	
Variable	Total (%)
Sex	
Male	12 (42.9)
Female	16 (57.1)
Age (médium)	52
Etiology	
Autoimmune	14 (50)
Viral	6 (21.4)
Steatosis	4 (13.8)
Alcohol	4 (13.8)
Diagnostic method	
Imaging	15 (53.6)
Biopsy	13 (46.4)
BMI (médium)	28.6
DM	
Pre-LT	4 (13.8)
Post-LT	15 (53.6)
Obesity	
Pre-LT	5 (17.9)
Post-LT	15 (53.6)
Arterial hyertension	
Pre-LT	3 (10.7)
Post-LT	11 (39.3)
Dyslipidemia	
Pre-LT	0 (0)
Post-LT	22 (78.6)
MS	
Pre-LT	0 (0)
Post-LT	15 (53.6)

Table 2.

Liver biochemistry of LT recipients who develop steatosis	
Variable	Medium
ALT	85.3
AST	50.5
FA	139.8
GGT	237
BT	0.7

ALT, Alanine aminotransferase; AST, Aspartate aminotransferase; BT, Total bilirubin; FA, Alkaline phosphatase; GGT, Gamma-glutamyl transferase.

https://doi.org/10.1016/j.aohep.2025.101865

Ischemic Hepatitis and Cardiac Tamponade, a rare association.

María E. Hernández-Ortega,
Viridiana Ramírez Villagrán, Thania B. Zurita-Cruz,
Oscar J. Tercero-Colmenares

Internal Medicine, General Hospital "Dra. Matilde Petra Montoya Lafragua" ISSSTE, Mexico

Introduction and Objectives: Ischemic hepatitis transiently elevates aminotransferases due to reduced oxygen delivery to the liver. The most common cause is heart failure[1]. Cardiac tamponade is an accumulation of pericardial fluid that can cause hemodynamic compromise[2]. The association of both is unusual, which is why it is important to identify them.

Materials and Patients: A 50-year-old patient with a history of type 2 diabetes, systemic arterial hypertension and chronic kidney disease, presented in November 2023 due to hypotension with data of low output during a hemodialysis session, adding dyspnea on minor exertion and abdominal pain located in the right hypochondrium. Upon admission with hemodynamic instability, it was decided to start vasopressor support. In laboratory studies, it presents elevated aminotransferases (Alanine aminotransferase at 1947 U/L and aspartate aminotransferase at 2649 U/L), lactate at 5 mmol/L, lactic dehydrogenase at 2166 U/L and elevated INR at 3.15. An ultrasound of the liver and bile ducts was performed, reporting parenchyma with increased echogenicity and pericardial effusion. An evaluation was requested by Cardiology, performing a transthoracic echocardiogram, showing severe pericardial effusion with a separation of up to 34 mm in the basal region. Pericardiocentesis was performed with the extraction of 850 milliliters of pericardial fluid. As part of the approach, viral and autoimmune etiology was ruled out as a cause of liver disease. PCR for Mycobacterium tuberculosis in the pericardial fluid was requested with a negative report and no malignancy data in the pericardial effusion approach. Patient with clinical improvement and progressive decrease in transaminase levels until normalization.

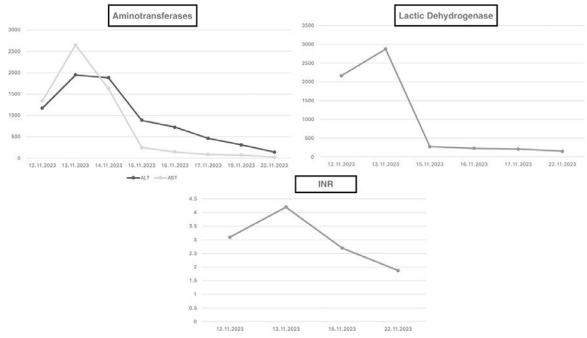
Results: Ischemic hepatitis has been associated with cardiovascular diseases. The pathogenesis of ischemic hepatitis appears to occur as a result of two mechanisms, when the liver that is at risk is subsequently exposed to systemic hypoperfusion and ischemia, ultimately resulting in a marked but transient elevation of aminotransferases[3]. The diagnosis is largely clinical and uses three criteria, a clinical setting of cardiac, circulatory, or respiratory failure, transient increase in serum aminotransferase activity, and exclusion of other causes of liver cell necrosis, especially viral hepatitis or induced drugs hepatitis[1]. Other abnormal laboratory findings may be found in patients with ischemic hepatitis, such as increased lactic dehydrogenase levels, reduced prothrombin activity, increased serum creatinine, serum bilirubin, and serum lactate levels, due to an abnormal hepatic clearance. Non-invasive imaging options, such as abdominal ultrasound, may aid in the diagnosis of ischemic hepatitis. Dilatation of the inferior vena cava and suprahepatic veins due to passive congestion suggests this. However, the diagnostic utility of ultrasound has not yet been validated[1].

Conclusions: Ischemic hepatitis is a cause of elevated aminotransferase levels, a consequence of a serious underlying disease that leads to a >50% in-hospital mortality rate[3]. The only recognized treatment is to correct the predisposing condition. Timely recognition is vital, as delaying diagnosis can worsen outcomes[4].

Ethical statement: The standards of the Declaration of Helsinki were taken into account. This study is considered risk-free, following the Regulations of the General Health Law on Health Research, Second Title, Chapter I, Article 17, Section II, published in the Official Gazette on January 6, 1987.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.



https://doi.org/10.1016/j.aohep.2025.101866

Novel bacterial cluster "Prevotella, Bacteroides and Suterella" associated with mortality in Mexican patients with acute-on-chronic liver failure (ACLF) and clinical utility of systemic hs-CRP and IL-6: A frontier approach involving next-generation sequencing at the intestinal level in a cohort by alcoholic etiology.

Paula A. Castaño Jiménez[1],
Tonatiuh A. Baltazar-Díaz[1],
Rodrigo Hernández-Basulto[1],
Mayra P. Padilla-Sánchez[1], Ksenia K. Kravtchenko[1],
Roxana García-Salcido[2], María T. Tapia-De la paz[3],
Kevin J. Arellano-Arteaga[3],
Luz A. González-Hernández[4],
Miriam R. Bueno-Topete[1]

[1] *Institute for Research in Chronic-Degenerative Diseases, University Center for Health Sciences, University of Guadalajara, Mexico*
[2] *Medical Emergency Unit, Civil Hospital "Fray Antonio Alcalde", Mexico*
[3] *Internal Medicine Service, Civil Hospital Juan I Menchaca, Mexico*
[4] *HIV Unit, Civil Hospital Fray Antonio Alcalde, Mexico*

Introduction and Objectives: ACLF is characterized by acute decompensation of cirrhosis, organ failure, and high short-term mortality. Several studies have demonstrated the relevance of intestinal microbiota (IM) in the pathophysiology of cirrhosis. To date, there are no studies in the Mexican population focused on IM in alcohol-associated ACLF and its relationship with mortality and inflammatory markers.

Aim: To analyze the composition and diversity of IM in patients with alcohol-associated cirrhosis and ACLF, healthy controls, and its correlation with inflammatory markers.

Materials and Patients: Cross-sectional study, which included 22 decompensated patients with ACLF, 16 decompensated patients without ACLF (CD) and 18 healthy individuals (HI), recruited at the Hospitales Civiles de Guadalajara. Fecal IM was characterized by NGS of the 16S-rRNA gene. Systemic levels of high-sensitivity C-reactive protein (hs-CRP) and interleukin 6 (IL-6) were quantified by ELISA, and bioinformatics analysis of IM was performed using the QIIME2 package. Quality filtering, which includes removal of chimeras and non-biological sequences, was performed using the DADA2 algorithm. Resulting ASVs were taxonomically assigned through a self-trained naïve Bayesian classifier, against the SILVA database. Furthermore, α and β diversity analyses, relative abundances, and ANCOM-BC compositional analysis were performed in the QIIME2 package. Predictive values and associations were performed using ROC curves and Spearman correlations, respectively.

Results: ACLF and CD patients showed significantly lower α-diversity compared to CS. The comprehensive bacterial taxonomy profile in ACLF was significantly dominated by pathogenic/inflammatory genera such as Escherichia/Shigella, Enterobacter and Prevotella. In contrast, we observed a depletion of Bacteroides compared to CD. Interestingly, the subanalysis of MI in ACLF patients categorized at 7 and 90 days of mortality showed consistency with the enrichment of the Prevotella, Bacteroides and Suterella cluster. The Proteobacteria/Firmicutes ratio as a potential marker of dysbiosis, was significantly elevated in ACLF patients. Serum levels of hs-CRP and IL-6 were potentially increased in ACLF, in comparison to CD and CS. hs-CRP correlated positively with IL-6 and the Proteobacteria/Firmicutes ratio and negatively with α-diversity. IL-6 levels were positively correlated with MELD-Na. Finally, ROC curve analyses showed that hs-CRP allows discrimination of infections in patients with CD with a cut-off point >70.7 mg/L (AUROC: 0.75, with 90% sensitivity and 68.9% specificity). IL-6 allows discrimination of hepatic encephalopathy (HE) in patients with CD and ACLF with a cut-off point >7051.1 pg/mL (AUROC: 0.67, with 81.4% sensitivity and 45.8% specificity).

Conclusions: The dysbiotic/proinflammatory profile of IM in ACLF correlated with the potential increase in systemic inflammation. The bacterial cluster "Prevotella, Bacteroides and Suterella" represents a hallmark of mortality within 7 and 90 days. IL-6 and hs-CRP allow discrimination of HE and infections in patients with alcohol-associated cirrhosis.

Ethical statement: The study was conducted in accordance with the latest update of the Declaration of Helsinki and the Regulations on Human Studies in Health Matters of the Mexican Republic.

The protocol was approved by the ethics committees of the Civil Hospitals of Guadalajara (010/20 and 00012) and the Ethics, Research and Biosafety Committee of the University Center for Health Sciences of the University of Guadalajara (22-96).

Declaration of interests: None.

Funding: Institutional Funds PROSIN 2023 and Fortalecimiento a la Investigación y Posgrado (P3E 271879).

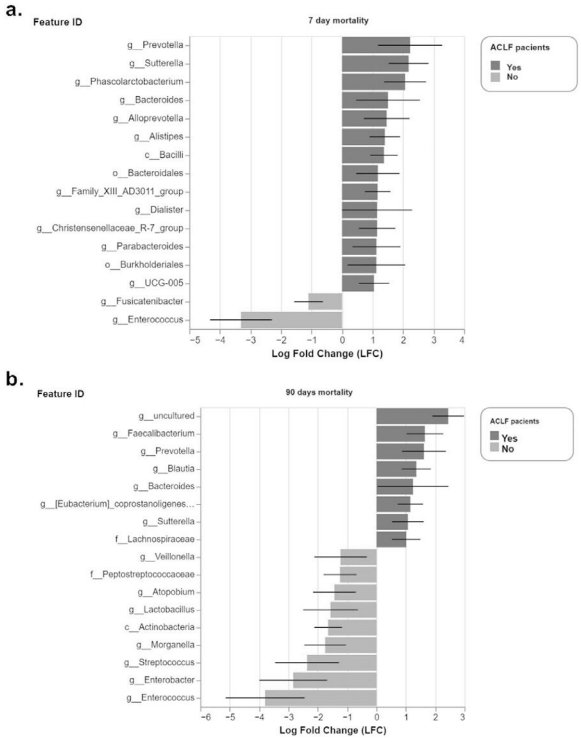
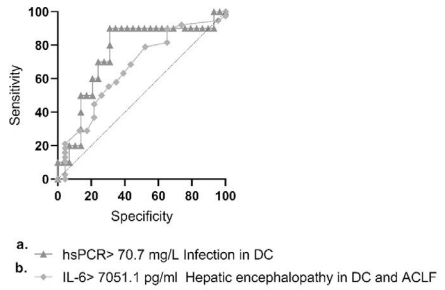


Figure 1. ***Analysis of fecal microbiota from patients with ACLF and its association with mortality.*** a) and b) Differential bacterial

taxonomy (at the level of bacterial family and genera) at 7 and 90 days of patients who died, compared to those who did not die. The bars represent the log-fold change (LFC) between both groups. The blue bars indicate the characteristic taxa of the group that died, while the brown bars represent the survivor group. A cut-off of $p<0.05$ and $q<0.05$ was used. Analyzed by means of ANCOM-BC algorithm (Analysis of Compositions of Microbiomes with Bias Correction).



	AUROC	p	Sensitivity (%)	Specificity (%)
Infection in DC (hsPCR>70.7 mg/L)	0.75	0.009	90	68.97
HE in DC and ACLF (IL-6>7051.17 pg/ml)	0.67	0.014	81.4	45.8

Figure 2. ***High-sensitivity C-reactive protein (hs-CRP) and interleukin 6 (IL-6): biomarkers associated with bacterial infections and the presence of hepatic encephalopathy.*** a) ROC curve of hs-CRP, which demonstrates the prediction of bacterial infections in patients with decompensated cirrhosis without ACLF (cut-off point >70.7 mg/L (AUROC: 0.75, with 90% sensitivity and 68.9% specificity); b) ROC curve of IL-6, that demonstrates the prediction of hepatic encephalopathy in patients with decompensated cirrhosis with ACLF and without ACLF (cut-off point >7051.1 pg/ml (AUROC: 0.67, with 81.4% sensitivity and 45.8% specificity).

https://doi.org/10.1016/j.aohep.2025.101867

IGFBPs in chronic liver diseases: Are they potential biomarkers?

Marisela Hernandez-Santillan[1],
Moisés Martínez-Castillo[1],
Wendolyne Ruíz-Benítez[1], Adrián Flores-Sánchez[1],
Abigail Hernandez-Barragán[1],
José Luis Pérez-Hernández[2],
Fátima Higuera-De la Tijera[2], Aldo Torre-Delgadillo[1],
Jacqueline Córdova-Gallardo[3],
Gabriela Gutiérrez-Reyes[1]

[1] *Liver, Pancreas, and Motility Laboratory (HIPAM), Experimental Medicine Research Unit, Faculty of Medicine, UNAM, General Hospital of Mexico, Dr. Eduardo Liceaga, Mexico*
[2] *Gastroenterology Department, General Hospital of México "Dr. Eduardo Liceaga". Ciudad de México, México*
[3] *Dr. Manuel Gea González General Hospital, Mexico City, Mexico*

Introduction and objectives: Liver diseases are caused by alcohol consumption, Hepatitis C virus, and metabolic dysfunction. There are few studies on insulin-like growth factor binding proteins (IGFBPs), also IGFBP-1 being involved in regulating glucose and lipid metabolism but its relation with liver diseases has not been fully clarified yet. To evaluate serum levels of IGFBPs 1,2,3 and 7 in subjects with alcoholic liver cirrhosis, alcoholic hepatitis, chronic hepatitis C, and Metabolic Dysfunction-Associated Steatotic Liver Disease.

Materials and patients: Prospective, cross-sectional, and multicenter study; approved by the research and ethics commission at UNAM, and the Hospital General de México, which included subjects with clinical and biochemical data of alcohol-related liver damage, defining two groups: alcoholic liver cirrhosis (OHCi) and alcoholic hepatitis (AH). Another group with Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD). The last group was defined with a diagnosis of chronic hepatitis C (HepC). FibroScan Testing, and/or Fibrotest were realized. All study groups were compared with healthy subjects called the control group (CT). IGFBPs were quantified in serum using a multiplex suspension array. The data were analyzed and compared between groups. For statistical analysis, Kruskal-Wallis and Mann-Whitney U tests were used.

Results: The serum concentrations of IGFBPs 1, 2, and 7 in Hepatitis C were elevated compared to all groups. In the case of HA, IGFBP-2, 3, and 7 decreased compared to the CT group, while IGFBP-1 was higher compared to CT. For IGFBP-3, all groups were decreased compared to the CT group. In the MASLD and CiOH groups, low concentrations of IGFBPs 1, 2, 3, and 7 were observed when compared with HepC, AH, and CT groups.

Conclusions: The serum levels of IGFBPs highlight have the relevance in the diverse liver diseases, it's evident in Hepatitis C are synthesized in higher concentration, while in MASLD and alcohol-related liver disease the concentration is lower, these proteins can be used as differential serum markers in liver diseases. It's necessary to conduct studies that would allow us to find new mechanisms involved in lipid metabolism and its relationship with liver disease.

Ethical statement: The protocol was approved by the Ethics and Research Committees of the "Dr. Eduardo Liceaga" General Hospital of Mexico (HG/DI/16/107/03/082), and the Faculty of Medicine of UNAM (FMD/DI/15/2015).

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101868

Clinical and epidemiologic characteristics of pregnant women with liver disease in a tertiary hospital.

Yelba G. Céspedes-Saballos[1],
Diego F. Abendaño-Rivera[1],
Vilma Hernández-Garza[1],
Deborah E. Espinoza-López[1],
Viridiana López-Ladrón de Guevara[1],
Santiago Camacho-Hernández[2],
Fátima Higuera-de-la-Tijera[1]

[1] *Department of Gastroenterology and Hepatology, General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico City, Mexico*
[2] *Research Department, General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico City, Mexico*

Introduction and Objectives: It has been demonstrated that approximately 3% of pregnant women are affected by some type of liver disorder. The aim of this study is to determine the clinical and epidemiological characteristics of pregnant patients who developed liver disease during their pregnancy or liver pathology unrelated to pregnancy.

Materials and Patients: The study is a retrospective and observational analysis of a cohort composed of 72 pregnant women

diagnosed with liver pathologies. These patients were seen in the gynecology and obstetrics service of the Hospital General de México between January 2023 and May 2024. The selection of the participants was based on their admission during the aforementioned period and the presence of a diagnosis of liver disease associated with pregnancy or under investigation. Data collection was carried out using forms designed for this purpose, through the review of the patients' clinical records, which classifies the source of information as secondary. Data analysis was performed using SPSS statistical software version 23. A descriptive approach was used for the analysis, presenting qualitative variables in terms of frequency and percentage, while measures of central tendency, such as mean and standard deviation, were calculated for quantitative variables.

Results: Data were collected from 72 files of pregnant patients who developed liver disease during pregnancy or liver pathology unrelated to pregnancy. The average age was 28.36, 28.36+-6.96 (26.75-29.97). 66.7% were multipregnant and 31.9% were primigravida. Regarding associated comorbidities, 59.7% did not present any comorbidity, while 40.3% presented some comorbidity, with subclinical hypothyroidism being the most frequent at 9.7%. Regarding nutritional status, 40.3% were obese, 6.9% overweight, and 27.8% normal weight. In the viral panel, 30.6% were non-reactive for HAV, HBV, and HCV, and up to 65.3% were not tested. Imaging studies showed the absence of intra- and extra-hepatic duct dilatation in 25%, on the other hand, 31.1% did not undergo imaging studies. The 87.5% presented some pathology related to pregnancy, the main ones being intrahepatic cholestasis (30.6%), preeclampsia with severe features (27.8%), HELLP syndrome (18.1%), and only 13.9% pathologies not related to pregnancy, the main ones being metabolic hepatic steatosis (5.6%) and viral hepatitis (2.8%).

Conclusions: In our study, liver pathology in pregnant women has similar characteristics to those reported in the world literature, with those related to pregnancy predominating over pre-existing pathologies. It should be emphasized that all pregnant women should be approached for such pathology and thus avoid complications in both mother and child.

Ethical statement: The research was conducted in accordance with the Helsinki Declaration (2013 revision).

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Characteristics	n=72		%
Sociodemographic			
Mean age (in years) (± SD)		28	7
Occupation	Unemployed	64	88.9
	Employee	8	11.1
Scholarship	primary	1	1.4
	Secondary	31	43.1
	Superior	40	55.6
Civil status	With partner	57	79.1
	Single	15	20.8
Comorbidities			
Subclinical hypothyroidism		6	9.7
Gestational diabetes		4	5.6
Gestational hypertension		6	8.3
Subclinical hypothyroidism + gestational diabetes		5	6.9
None		43	59.7
Nutritional condition			
Malnutrition		17	23.6
Overweight		5	6.9
Obesity		3. 4	47.2
Normal weight		5	27.8
Deeds			
Multiple pregnancies		48	66.7
First pregnancy		23	31.9
viral panel			
VHA		2	2.8
HCV		1	1.4
Non-reactive to HAV, HBV, HCV		22	30.6
Not performed		47	65.3
Image study			
Without dilation of the intra- and extra-hepatic pathway		18	25.0
Reactive cholecystitis without signs of exacerbation, without bile duct dilation		3	9.7
Not performed		31	43.1
Pathologies related to pregnancy n= 63 87. 5 %			
Hyperemesis gravidarum		6	8.3
intrahepatic cholestasis		22	30.6
Pre-eclampsia with severity data		20	27 . 8
Hellp syndrome		1 3	18.1
Eclampsia		1	1.4
Pregnancy fatty liver		1	1.4
Pathologies not related to pregnancy n=9 12.5%			
Hepatic cirrhosis		1	1.4
viral hepatitis		2	2.8
Probable autoimmune liver disease		1	1.4
Metabolic hepatic steatosis		4	5.6
Polycystic liver disease		1	1.4

DM, Diabetes mellitus; HAV, Hepatitis A virus; HBV, Hepatitis B virus; HCV, Hepatitis C virus.

https://doi.org/10.1016/j.aohep.2025.101869

Chronic Administration of DEN and 2-AAF for 13 and 18 weeks in Wistar Rats Leads to Progress of Hepatocarcinogenesis

Jaime Sánchez-Meza[1], Marina Campos-Valdez[1], José A. Domíngez-Rosales[1], Juliana M. Godínez-Rubí[2], Sarai C. Rodríguez-Reyes[3], Erika Matínez-López[3], Adriana M. Salazar-Montes[1], Carmen M. Gurrola Díaz[1], Manuel A. Castro-García[1], Guillermo M. Zúñiga-González[4], Laura V. Sánchez Orozco[1]

[1] *Institute of Chronic Degenerative Diseases, University Center for Health Sciences, University of Guadalajara, Guadalajara, Jalisco, Mexico*
[2] *Laboratory of Diagnostic Pathology and Immunohistochemistry, Department of Microbiology and Pathology, University Center for Health Sciences, University of Guadalajara, Guadalajara, Jalisco, Mexico*
[3] *Institute of Translational Nutrigenetics and Nutrigenomics, University Center for Health Sciences, Guadalajara, Jalisco, Mexico*
[4] *Laboratory of Mutagenesis, Western Biomedical Research Center, IMSS, Guadalajara, Jalisco, Mexico*

Introduction and Objectives: Induction of hepatocellular carcinoma by administration of the agents diethylnitrosamine (DEN) and N-(2-Fluorenyl) acetamide (2-AAF) in murine animals, is a model to study liver cancer. The objective was to evaluate the alterations triggered by the chronic administration of DEN and 2-AAF during 13 and 18 weeks (wks.) in Wistar rats.

Materials and Patients: Male Wistar rats (180-200 g) were organized in groups: a) Control 18 wks. (18-wk Ctl; n=6); b) Damage 18 wks. (18-wk Dmg; n=8), c) Control 13 weeks. (13-wk Ctl; n=5), and d) Damage 13 wks. (13-wk Dmg; n=6). The 13- and 18-wk Dmg groups were weekly treated with i.p DEN (50 mg/Kg) on day one and with i. g. 2-AAF (25 mg/Kg) on day three; the treatment (Tx) was maintained over 13 and 18 weeks, respectively. Then, livers and serum were collected for histological, serum biochemistry, and gene expression analyses. Statistical test Student's t-tests or Kruskal-Wallis and

Mann-Whitney U were performed using the software GraphPad Prism version 8. A p value < 0.05 was considered significant.

Results: The rat's survival decreased to 62.5% with the Dmg Tx for the 18-wk Dmg group at the tenth week, but when the 13-wk Dmg group was included, the survival increased to 78.5% (n= 14) until the thirteenth week. Dmg Tx tended to decrease the animal's weight and induced changes in the liver tissue (paler coloration, differentiated nodules, and hepatomegaly; to a lesser degree in the 13-wk Dmg group). Heterogeneity in the damage severity was detected among the animals of both groups, which was also found at the histological level, where there were clear signals of loss of normal hepatocyte architecture, lobular structure disorder, atypical cell enhancement, and accumulation of collagen. Probable lung metastasis was recognized in the 18-wk Dmg group (indicated by macroscopic and histological alterations). In the Dmg groups, the levels of ALT, AST, ALKP, GGT, and total proteins in serum were significantly altered; as well as *CAT*, *SOD*, *COL1A*, and *TGFB1* expression were significantly different. In addition, *IL6* was also increased in the 18-wk Dmg group.

Conclusions: Dmg Tx during 13 wks. is sufficient to induce significant alterations and the 18-wk Tx exhibited possible lung metastasis. The heterogeneity in this model may be seen as a disadvantage; yet, this may be taken as a depiction of the heterogeneity found in liver cancer patients in real life.

Ethical statement: The study protocol (code CI-01720) was approved by the Ethics, Research, and Biosecurity Committee of the CUCS, Universidad de Guadalajara on 20 October 2020.

Declaration of interests: None.

Funding: Grant PIN 2021 CUCS, UdeG, P3E 271879-2023 and PRO SNI, UdeG.

https://doi.org/10.1016/j.aohep.2025.101870

Primary Hepatic Lymphoma Associated with HIV, Case Report.

Luz A. Torres-López, Mónica M. Santamaría-Chávez, Leonardo D. De la Torre-Carmona, Omar G. Blancas-Reyes

Internal Medicine, Regional Hospital General Ignacio Zaragoza, Mexico

Introduction and Objectives: Primary liver lymphoma (PLL) is a rare form of lymphoma. It represents 1% of all non-Hodgkin lymphomas and 0.4% of extra nodal lymphomas. Risk factors include infection with human immunodeficiency virus (HIV), hepatitis B and C, as well as chronic immunosuppression. Here, we present a case of PLL.

Materials and Patients: A 39-year-old male with HIV infection and recently diagnosed disseminated Kaposi's sarcoma was admitted due to abdominal pain, asthenia, adynamia, and a 10 kg weight loss. Physical examination revealed a painful abdomen, hepatomegaly of 3 cm below the costal margin, and no other abnormalities. An exophytic, violaceous palatine tumor was observed in the oral cavity. Laboratory studies showed: total bilirubin 1.3, direct bilirubin 1, aspartate aminotransferase 23, Alanine transaminase 20, alkaline phosphatase 519, Gamma-glutamyltransferase 392, lactate dehydrogenase 271. A CT scan reported multiple hypodense oval images in hepatic segments III to VIII with a hypodense center in the contrast phase and ring enhancement; an amorphous, irregularly bordered mass occupying the soft palate extending to the nasal cavity; no splenomegaly or lymphadenopathies. An ultrasound-guided liver biopsy revealed lymphocyte proliferation with severe atypia consistent with lymphoma, which immunohistochemistry confirmed as diffuse large B-cell lymphoma of germinal center origin with a double-expressor immunophenotype (C-MYC > 40%, BCL2 > 50%). A biopsy of the palatal lesion reported ulcerated Kaposi's sarcoma. Endoscopy and colonoscopy showed circumscribed mucosal elevations in the cecum and stomach; histopathology reported Kaposi's sarcoma.

Results: Extension studies were conducted with serology for hepatitis B and C viruses and cytomegalovirus, all of which returned negative results. The bone marrow biopsy showed no lymphomatous infiltration, and the lumbar puncture revealed no abnormalities. The dissemination study with computed tomography of the chest, abdomen, and pelvis did not reveal findings suggestive of supradiaphragmatic or infradiaphragmatic involvement. The diagnosis of primary hepatic double-expressor lymphoma was concluded, synchronous with diffuse Kaposi's sarcoma. Antiretroviral therapy was initiated for 2 weeks, followed by the first cycle of chemotherapy with the EPOCH-DA regimen. The patient experienced progressive deterioration that ultimately led to his death.

Conclusions: LHP is an uncommon entity, just as Kaposi's sarcoma are common neoplasms associated with HIV and immunodeficiencies. Synchronous presentation is poorly documented, with only isolated cases reported in the literature. Therefore, it is important to conduct a comprehensive approach for the identification and timely management of these conditions

Ethical statement: The patient's identity was protected, and consent was obtained from family members.

Declaration of interests: None

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or non-profit sectors.

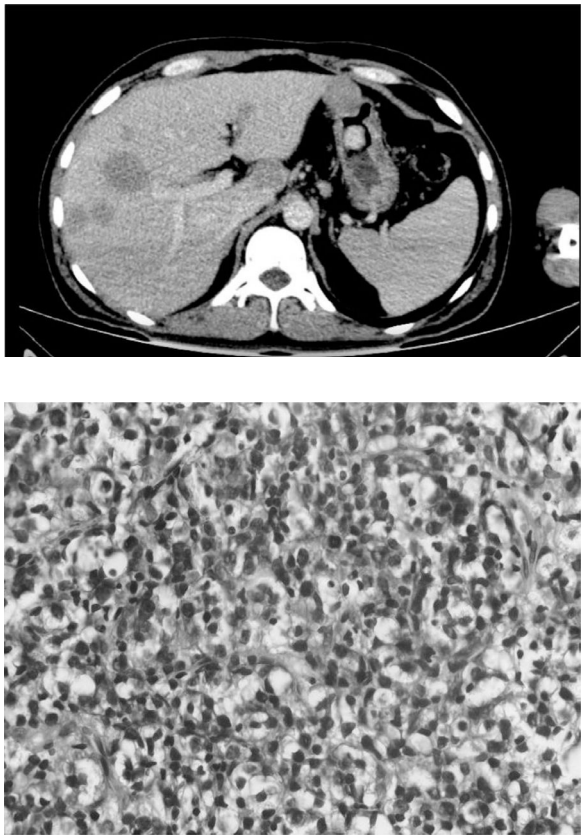


Figure.

https://doi.org/10.1016/j.aohep.2025.101871

Differential effect of the allele G ADRB2 (rs1042714) and allele C ADRB3 (rs4994) and its association with metabolic-associated steatotic liver disease (MASLD) risk factors in Mexican population.

Irene M Mariscal-Martinez[1,2], Sonia Román[1,2], Leonardo Leal-Mercado[1,2], Alexis Jose-Abrego[1,2], Arturo Panduro[1,2]

[1] *Department of Genomic Medicine in Hepatology, Civil Hospital of Guadalajara "Fray Antonio Alcalde," Guadalajara, Jalisco, Mexico*
[2] *Health Sciences Center, University of Guadalajara, Guadalajara, Jalisco, Mexico*

Introduction and Objectives: Adrenergic receptors (ADR) regulate adipocyte energy expenditure. G ADRB2 and C ADRB3 alleles are associated with fat deposition and metabolic alterations. The distribution of these polymorphisms and their influence on liver disease in Western Mexico are unknown.

Materials and Patients: In this cross-sectional study, we evaluated 919 unrelated adults with Caucasian ancestry (Villa Purificación, Los Altos, Cuquio), Native population (Nahuas, Huicholes), and Mestizo (admixed) (Guadalajara, Nayarit). Genomic ADN was extracted from leukocytes using the salting out method. ADRB2 and ADRB3 genotyping was performed using a Real-Time PCR system (TaqMan, Applied Biosystems, rs1042714 and rs4994). Body composition was assessed by bioelectrical impedance with an InBody analyzer (Inbody Co, Seoul, Korea). Biochemical tests included glucose, total cholesterol (TC), triglycerides (TG), high-density cholesterol (HDL-C), low-density lipoprotein cholesterol (LDL-C), and very low-density lipoprotein cholesterol (C- VLDL). Insulin resistance (IR) was calculated as fasting plasma glucose (mg/dL) × fasting serum insulin (μU/mL)]/405 and defined as HOMA-IR ≥ 2.5. Statistical differences for quantitative and qualitative variables were analyzed using Student's t-test and Chi-square, respectively, with R study software. Hardy-Weinberg equilibrium (HWE) was obtained using Arlequin software (version 3.01).

Results: The Natives had the lowest frequency of the G ADRB2 allele (2.9%), while the Caucasians showed the highest frequency (21.2%). In the general population, the CG/GG genotypes were associated with a higher risk for increased VLDL [OR 1.98 (1.25-3.09 p=0.003)] and hyperglycemia [OR 1.91 (1.19-3.04 p=0.007)] than CC genotype carriers. Among the Caucasians, the CG/GG genotype was protective against increased LDL [OR 0.22 (0.05-0.81 p=0.023)]. The C ADRB3 allele was highest in native populations (23.7%), while the Caucasians showed the lowest frequencies (12.8%). In Natives, the C ADRB2 allele and C ADRB3 allele were associated with a higher risk of hypertriglyceridemia [OR 2.99 (1.16-9.37 p=0.036)] and hyperinsulinemia [OR 9.93 (1.68-189 p=0.035)] respectively. In the mestizo population, TC/CC genotype patients showed a higher risk of body fat [OR 2.26 (1.4-3.7 p=0.001)].

Conclusions: The frequency of allele G ADRB2 is higher than in those with Caucasian ancestry, while allele C ADRB3 is higher in the Native population. The G ADRB2 and allele C ADRB3 confer the risk of having higher body fat without metabolic alterations in Caucasian populations. The C ADRB2 allele and C ADRB3 allele confer risk for hyperinsulinemia and hypertriglyceridemia in Native populations, metabolic alterations that have been associated with MASLD.

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

Declaration of interests: None.

Funding: University of Guadalajara-Programa de Fortalecimiento de Institutos, Centros y Laboratorios.

https://doi.org/10.1016/j.aohep.2025.101872

Assessment of MELD Scores as Predictors of Mortality in Patients with Decompensated Chronic Liver Disease with Variceal Hemorrhage at a third-level care center.

Laura V. Cupil-Escobedo, Karina Cazarin-Chavez, María F. Higuera-De La Tijera

Department of Gastroenterology, General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico City, Mexico

Introduction and Objectives: The variceal hemorrhage is the most common cause of decompensation in patients with chronic liver disease. Hemoglobin level has been used to classify severity; however, it is unreliable. This study aims to evaluate MELD scores as predictors of mortality in patients with variceal hemorrhage.

Materials and Patients: An observational, retrospective, comparative, and longitudinal study was conducted on patients hospitalized in the Gastroenterology department for one year, who were admitted with a diagnosis of variceal hemorrhage and met the criteria for applying the MELD score within the first 48 hours of hospitalization. Descriptive and inferential statistics were performed using ROC curves. Demographic variables, MELD, MELD Na, and MELD Lactate scores were evaluated. The initial and follow-up hemoglobin levels were assessed. Additionally, hospitalization days and discharge reasons were considered.

Results: A total of 96 patients were analyzed (60 women and 36 men) with an average age of 62 ± 8 years. Regarding the etiology of cirrhosis, Alcohol: 48, MASLD: 18, METALD: 8, Viral: 4, Unspecified: 6, Autoimmune: 16. In the analysis of ROC curves, it was found that there was a significant mortality prediction for the MELD, MELD Na, and MELD Lactate models. The MELD cutoff of 21.5 points presented an AUROC of 0.866 (95% CI: 0.71-1.00, p= <0.001), MELD Na of 20.5 had an AUROC of 0.848 (95% CI: 0.67-1.00, p= <0.001), and the MELD Lactate cutoff of 20.5 had an AUROC of 0.791 (95% CI: 0.644-0.939, p= 0.003)

Conclusions: In the analysis of ROC curves, the MELD, MELD Na, and MELD Lactate models demonstrated a significant predictive capacity for mortality. The AUROC values were 0.866, 0.848, and 0.791 respectively, confirming their utility in clinical practice for patients with chronic liver disease admitted in the context of decompensation due to variceal bleeding.

Ethical statement: Data confidentiality and participant protection are guaranteed.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101873

Characteristics of overlap syndrome in Mexican patients.

Claudia G. Solis-Hernandez, Marycamen Alegria-Ovando, Kenia M. Bastida-Guadarrama, Viridiana Lopez-Ladron-de-Guevara, Maria F. Higuera-de-la-Tijera, Jose L. Perez-Hernandez

Gastroenterology and hepatology, General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico

Introduction and Objectives: The overlap syndrome combines two or more autoimmune liver diseases such as: autoimmune hepatitis, primary biliary cholangitis and primary sclerosing cholangitis, in Mexico there is little information about this disease. Objective: To

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.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101874

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

Leonardo Leal-Mercado[1,2], Sonia Román[1,2], Maricruz Sepúlveda-Villegas[1,2], Alexis Jose-Abrego[1,2], Arturo Panduro[1,2]

[1] *Department of Genomic Medicine in Hepatology, Civil Hospital of Guadalajara "Fray Antonio Alcalde", Mexico*
[2] *Health Sciences Center, University of Guadalajara, Mexico*

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.

Funding: Supported by the University of Guadalajara, Guadalajara, Mexico – Programa de Fortalecimiento de Institutos, Centros y Laboratorios.

https://doi.org/10.1016/j.aohep.2025.101875

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

Cristian A. Oviedo-Garza, Alejandro Peña-Montes, María R. Herrero Maceda, Scherezada M. Loza-Mejia

Gastroenterology and Hepatology, Hospital Juárez, México

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.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101876

Association between autoimmune hepatitis and leukocytoclastic vasculitis, a case report

Yajzeel Estevez-Lopez[1], Sury Z. Palma-Motte[1], Mary C. Jimenez-Prieto[1], Raquel Ramirez-Carrillo[1], Maria F. Reyes-Romero[2], Felipe de J. Duarte-Grajales[3]

[1] *Internal Medicine, Hospital Pdte. Adolfo Ruiz Cortines. IMSS, Mexico*

[2] *Autonomous University of Tamaulipas, Mexico*

[3] *Veracruzana University, Mexico*

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.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1

Laboratories Studies	Result
HIV, HBV, HCV	NEGATIVE
ANTI SMOOTH MUSCLE ANTIBODY	NEGATIVE.
ANTI MITOCHONDRIAL ANTIBODY	
ANCA P & ANCA C	
ALPHA FETOPROTEIN	NEGATIVE.
ANTIBODY OF CARCINOEMBRYONIC	
CA 19.9	
CA 125	
ANA	POSITIVE: 1:80, GRANULAR PATTERN.
ANTI RHO	POSITIVE, 27.1
ANTI LA	NEGATIVE.
BETA 2 MYCROGLOBULINE	1123
C3	187
C4	27
TSH Y T4-L	NORMAL.
IGA	916
IGM	223
IGG	3362
ANTI CCP	NEGATIVE
RHEUMATOID FACTOR	5.1
VSG, PCR.	NORMAL.

ANCA P & ANCA C, perinuclear & cytoplasmic anti-neutrophil cytoplasmic antibodies; ANA, antinuclear antibody; ANTI CCP, anti-cyclic citrullinated peptide antibody; ANTI LA, anti-La antibody; ANTI MITOCHONDRIAL ANTIBODY, anti-mitochondrial antibody; ANTI RHO, anti-Ro antibody; ANTI SMOOTH MUSCLE ANTIBODY, anti-smooth muscle antibody; ANTIBODY OF CARCINOEMBRYONIC, carcinoembryonic antigen; BETA 2 MYCROGLOBULINE, beta-2 microglobulin; CA 125, cancer antigen 125; CA 19.9, cancer antigen 19-9; C3, complement component 3; C4, complement component 4; FACTOR REUMATOIDE, rheumatoid factor; HBV, hepatitis B virus; HCV, hepatitis C virus; HIV, human immunodeficiency virus; IGA, immunoglobulin A; IGG, immunoglobulin G; IGM, immunoglobulin M; PCR, polymerase chain reaction; TSH Y T4-L, thyroid-stimulating hormone and free thyroxine; VSG, erythrocyte sedimentation rate.

https://doi.org/10.1016/j.aohep.2025.101877

Liver Injury Induced by Peumus boldus with Fatal Outcome. Case Report

Emmanuel Reyes-Ferreira, Hugo E. González-Chávez, Karen S. Arrazola-Mendoza, Francisco De la Peña-Camacho, Luis H. Vargas-Torrescano, Jorge L. Castrejón-Mora

Internal Medicine, General Hospital ISSSTE, Querétaro, Mexico

Introduction and Objectives: Peumus boldus is a plant native to South America traditionally used to treat gastrointestinal ailments. There are reports of hepatotoxicity from prolonged consumption. We describe the case of a patient with liver damage induced by Peumus boldus, with a torpid evolution and fatal outcome, highlighting the awareness of the adverse effects of this plant.

Materials and Patients: A 48-year-old woman with a history of type 2 diabetes on insulin glargine treatment and a surgical history of cholecystectomy 12 years prior for cholelithiasis, without other relevant history. She began three weeks prior with asthenia, adynamia, hyporexia, nausea, fever, jaundice, and right hypochondrial pain. Upon questioning, exposure to an herbal supplement based on Peumus boldus during the previous 15 days was related. Upon admission with vital signs BP: 101/82 mmHg, HR: 98 bpm, RR: 21 rpm, Temperature: 38.2°C, SaO2 90%. On physical examination, generalized jaundice, dark urine, and pale stools were noted. Laboratories showed a cholestasis clinical pattern (R Factor of 1.0, with ALT of 62 U/L, ALP of 184 U/L). Despite discontinuing the herbal supplement, she progressed with progressive cholestasis on follow-up, leading to the initiation of glucocorticoids without improvement. Complementary studies were conducted, ruling out infectious and autoimmune diseases, as well as a transjugular liver biopsy reporting non-alcoholic steatohepatitis with morphological data of toxic-induced lesions with moderate activity.

Results: During her clinical course, with persistence of generalized jaundice and right hypochondrial abdominal pain, grade 2 ascites, and encephalopathy characterized by disorientation in time and circumstance, behavioral alterations, and eventually somnolence tendency, for which she was brought by family members to the emergency service of our hospital. During her hospital stay, she showed a tendency to hypotension, without adequate response to vasopressor treatment, with clinical and laboratory evidence of renal function deterioration, and worsening liver function parameters with BT of 22.1 mg/dl, DB 20.5 mg/dl, IB 1.6 mg/dl, ALT 64 U/L, ALP 188 U/L, Platelets 59,000 cells/mm3, PT 27.5 seconds, and INR 2.54. After 65 days from the onset of symptoms, despite the treatment used, a fatal outcome occurred.

Conclusions: Despite a growing number of reports of hepatotoxicity induced by Peumus boldus, it is not listed in databases intended for such purposes as LiverTox. This case highlights the importance of raising awareness about the hepatotoxic risks of herbal products.

Ethical Statement: This clinical case was prepared following current ethical standards and principles in medical research. Informed consent was obtained from the patient's legal representative for the anonymous publication of her clinical data. Confidentiality and respect for the patient's privacy were always guaranteed, according to the provisions established in the Declaration of Helsinki and the guidelines of the Ethics Committee of the General Hospital ISSSTE, Querétaro. No experimental interventions were performed, and all therapeutic measures applied were part of the standard of medical care.

Declaration of Interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101878

Characterization and determination of prevalence in autoimmune liver diseases in a tertiary center.

Ernesto J. Medina-Avalos[1], Gabriela Rangel-Zavala[1], Jose L. Pérez-Hernández[1], Viridiana López-Ladrón de Guevara[1], Fátima Higuera-De la Tijera[1]

[1] *Department of Gastroenterology and Hepatology, General Hospital of México Dr. Eduardo Liceaga, Mexico*

Introduction and Objectives: Autoimmune Hepatic Diseases (AHD) involve a chronic immunomediated response towards hepatocytes and bile ducts, as seen in Primary Biliary Cholangitis (PBC), Autoimmune Hepatitis (AIH), and Primary Sclerosing Cholangitis (PSC). Their complex diagnosis, lack of studies, and irreversible liver damage pose significant challenges today due to increased mortality.

Materials and Patients: A retrospective (cross-sectional, retrolective) study was conducted. Patient records from men and women aged 18 and above attending the Liver Clinic from 2020 to 2023 were analyzed. Data included demographic, clinical, biochemical, serological, and histological variables compatible with EHAI diagnosis. Descriptive statistics such as frequency, percentages, measures of central tendency, and dispersion were employed for qualitative and quantitative variables.

Results: The prevalence of AHD during the evaluated period was 11.5% in our population. A total of 201 patients were identified, comprising 85 (42%) with PBC, 65 (32%) with AIH, 7 (4%) with PSC, and 44 (22%) with overlap (Figure 1). Among them, 177 (88%) were female.

The mean age at diagnosis was 51 years ± 13.2. 28% had associated autoimmune diseases, with thyroid disease being the most common at 33%. Hepatic cirrhosis was the most frequent presentation (60%) at diagnosis, with 60% exhibiting decompensation (64% with variceal digestive bleeding) (Figure 2). PBC accounted for 47% of cirrhosis cases. Liver transplantation was performed in 6% of EHAI cases, mainly due to AIH.

Conclusions: The diagnosis of AHD shows a progressive increase. A high incidence of advanced stages of liver disease related to AHD is observed. Further research is needed to define the prevalence and characterize these patients, thus enhancing early and effective diagnosis.

Ethical statement: This study was conducted in accordance with the ethical principles of our hospital center. All data were handled with strict confidentiality and solely for research purposes.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

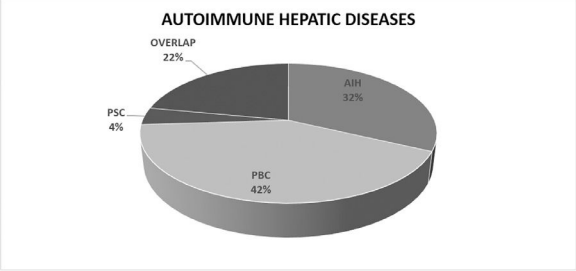


Figure 1. Autoimmune Hepatic Diseases (AHD). AIH: Autoimmune Hepatitis, PBC: Primary Biliary Cholangitis, PSC: Primary Sclerosing Cholangitis.

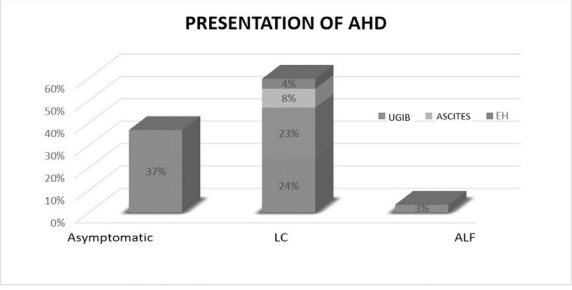


Figure 2: Presentation of Autoimmune Hepatic Diseases. AHD: Autoimmune Hepatic Disease, LC: Liver Cirrhosis, ALF: Acute Liver Failure, UGIB: Upper Gastrointestinal Bleeding, HE: Hepatic Encephalopathy.

https://doi.org/10.1016/j.aohep.2025.101879

Behavioral Assessment of a Novel Hepatic Encephalopathy Model using CCl_4 and Manganese in Mice

Claudia J. Frias-González[1], Ana Sandoval-Rodríguez[1], Carolina Díaz-Canul[1], Mónica A. Ibarra-Hernández[1], Jorge A. Salto-Sevilla[1], Juan Armendáriz-Borunda[1,2]

[1] *Department of Molecular Biology and Genomics, Institute for Molecular Biology in Medicine and Gene Therapy, CUCS, University of Guadalajara, Guadalajara, Jalisco, Mexico*
[2] *Tecnológico de Monterrey, EMCS, Mexico*

Introduction and Objectives: Hepatic encephalopathy (HE), affecting around 40% of cirrhosis patients, impairs cognitive and motor functions. Developing HE experimental models is crucial for advancing our understanding of this condition. This study developed an HE models using intraperitoneal carbon tetrachloride (CCl_4) and manganese supplementation in mice, focusing on behavioral validation.

Materials and Patients: Two groups of male C57BL6 wild-type mice (8 mice per group), 10 weeks old, were used in this study. The first group (healthy controls) had access to standard food (Rodent Laboratory Chow* 5001, LabDiet, Richmond, IN, USA), and drinking water ad libitum and were euthanized at week

12. The second group (cirrhotic group) received the same diet but with 1 mg/ml of MnCl2 added to their drinking water. It was intraperitoneally injected twice a week with CCl4 for 12 weeks (1 ml/kg of body weight dissolved in olive oil for a final concentration of 30% in the first 5 weeks and 20% in the following 7 weeks). Behavioral tests, including the beam walking test and cylinder test, were conducted to assess motor coordination and motor asymmetry. Liver morphology changes were observed, and Hematoxylin-Eosin staining was used to determine inflammation. Data were analyzed using ANOVA for parametric data and the Kruskal-Wallis test for non-parametric data, with results presented as Mean ± SEM.

Results: Behavioral tests indicated signs of HE, such as gait abnormalities (tremor, rigidity), hind limb ataxia, and bristly hair. In the beam walking test, cirrhotic mice spent significantly longer to traverse the beam ($P \leq 0.05$) and had a higher number of limb foot faults ($P \leq 0.001$) compared to healthy mice. The cylinder test showed no significant difference in locomotor asymmetry. Morphological changes in the liver from healthy to cirrhotic were evident. Healthy livers had a smooth reddish-brown surface, regular shape, and firm texture. In contrast, cirrhotic livers appeared paler, with an irregular surface, and became harder and bumpy. Size alterations and the presence of leukocytic foci were also noted in cirrhotic livers.

Conclusions: The combination of CCl_4 and manganese successfully induced evidence of significant motor coordination impairments and distinct liver morphology changes, indicating a noticeable progress in developing the experimental model for HE.

Ethical statement: Technical specifications for the production, care, and use of laboratory animals followed the NOM-062-ZOO-1999. Additionally, guidelines from the animal facility of the University of Guadalajara and criteria outlined in the Guide for the Care and Use of Laboratory Animals published by the National Institutes of Health were adhered to.

Declaration of interests: None.

Funding: Program for Strengthening Institutes of the University Center of Health Sciences.

Fund to Basic Science and/or Frontier Science Modalities: Paradigms and Controversies in Science 2022. Project: “A paradigm shift in the therapeutic approach to obesity and metabolic syndrome in Mexicans” to JAB.

https://doi.org/10.1016/j.aohep.2025.101880

HDL-C and BMI levels as parameters for MASLD detection

Stefanny Cornejo-Hernández[1], Esly Esquivel-Alarcón[1], Reyna Hernández-Espinoza[1], J. Salvador García-Hernández[1], Trinidad Baldovinos-Hernández[2], Javier Bastida-Alquicira[2], Eira Cerda-Reyes[1], Adriana Martinez-Cuazitl[1,3]

[1] *Department of Research Hospital Central Militar, Mexico*
[2] *Department of Ultrasound, Hospital Central Militar, Mexico*
[3] *Military School of Medicine, Mexico*

Introduction and Objectives: Hepatic Steatosis Associated with Metabolic Dysfunction (MASLD) has a prevalence of 30% worldwide and 80% of these patients do not present alterations in liver biochemistry, therefore it is important to know if there is any biochemical parameter that helps us identify this population. To correlate clinical and biochemical values with the degree of fibrosis and CAP determined by Transient Elastography to obtain a parameter that determines the affected population.

Materials and Patients: Patients with MASLD criteria were included, who underwent transient hepatic elastograft (Fibroscan® 630 Expert v10720), APRI, FIB4, NAFLD score, blood count, liver biochemistry, lipid profile, glucose, glycosylated hemoglobin, clotting times. (TP, INR). It was compared with a control of healthy people. The statistical analysis was used SPSS V24 program for continuous quantitative variables expressed in mean and percentage, the ordinary quantitative variables were expressed in frequencies and percentages, Spearman correlation tests and a linear regression analysis were performed, from which A ROC curve and the Youden index were performed and their sensitivity and specificity were determined, with a statistically significant p <0.05.

Results: 81 patients were included, mean age 43 years (38, 50.5), with the following comorbidities: 2 (2.5%) HTS, 8 (10%) T2D. The control group (healthy) was 17. By BMI, 29 (35.8%) were overweight, 33 (40.7%) were grade I obese, and 7 (8.6%) were grade II obese.

By CAP, 31 (38.35) had S3, 26 (32.1%) S2, 7 (8.6%) S1 and 17 (21%) S0. Patients with obesity I or II have grade 2 or 3 steatosis, with a moderate correlation Spearman's rho 0.581 p <0.001.

Both groups were compared, reporting that the age, BMI, CAP and KPa of patients with steatosis are higher compared to healthy participants, as well as leukocytes, glucose, triglycerides, HDL, GGT and Na with statistical significance. The linear regression analysis showed the following formula m = -0.617 + 0.062 (BMI) + -0.009 (HDL), with an R of 0.737. An ROC curve was made with the formula obtained with an area under the curve of 0.979 and a p of <0.0001, having a Youden index with a cut-off point of 0.60, obtaining a sensitivity of 95.2% and a specificity of 87.5%. Regarding fibrosis, 9 patients with fibrosis were detected, whose age is 47.4 ± 14.2 years. The most common grade in patients with fibrosis was F2, as shown in the table.

Conclusions: HDL levels and BMI could be markers to suspect MASLD. A larger population is required to validate it.

Ethical statement: Approved by the research committee of the Central Military Hospital, review of files confidentially following the guidelines of the Declaration of Helsinki.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

	S0 n (%)	S1 n (%)	S2 n (%)	S3 n (%)
Normal weigth	11 (91.7)	0 (0)	1 (8.3)	0 (0)
Overweight	5 (17.2)	5 (17.2)	11 (37.9)	8 (27.6)
Grade I Obesity	1 (3)	1 (3)	12 (36.4)	19 (57.6)
Grade II Obesity	0 (0)	1 (14.3)	2 (28.6)	4 (57.1)
X^2= 52.230 p <0.001				

	Total n (%)
F0 – F1	72 (88.9)
F2	6 (7.4)
F3	2 (2.5)
F4	1 (1.2)

https://doi.org/10.1016/j.aohep.2025.101881

Characterization of the inflammatory profile in patients with compensated and decompensated liver cirrhosis through cytosines determined by spectroscopy.

Carlos E. Coronel-Castillo[1], Gustavo J. Vázquez-Zapien[2], Mónica M. Mata-Miranda[2], Eira Cerda-Reyes[3], Adriana Martínez-Cuazitl[2,3]

[1] *Internal Medicine, Military Postgraduate Medical School, Mexico*
[2] *Military School of Medicine, Mexico*
[3] *Research department, Central Military Hospital, Mexico*

Introduction and Objectives: Inflammatory cytokines influence the progression of cirrhosis and decompensation. The study aims to characterize the inflammatory response of patients with compensated and decompensated liver cirrhosis through inflammatory cytokines and evaluate the state of the disease, type of decompensation, severity and the development of acute on chronic liver failure.

Materials and Patients: Hospitalized patients with a diagnosis of compensated and decompensated liver cirrhosis were included. Upon admission, saliva samples were collected in microcentrifuge tubes to measure cytosines (IL-6, IL-1β, IL-10, ILF-γ and TNF), lipids and immunoglobulins: A, M and G using Fourier transform infrared spectroscopy (FTIR). Clinical and biochemical variables (complete blood count, blood chemistry, liver biochemistry, serum electrolytes, lipid profile and C-reactive protein), MELD 3.0 and Child Pugh scales were included. The statistical analysis was used the SPSS V24 program for continuous quantitative variables expressed in measures of central tendency and dispersion according to the normality of the data, the ordinal quantitative variables were expressed in frequencies and percentages, Spearman correlation analysis and a linear regression analysis were performed, from which a ROC curve and the Youden's J statistic and its sensitivity and specificity were determined, with a statistically significant p <0.05.

Results: It was included 40 patients: 19 compensated and 21 decompensated. The most common decompensation was hepatic encephalopathy. (20%) (MELD 3.0 12.5 ± 3.59 vs 21.61 ±7.47, p<0.000). Statistical significance was found in leukocytes, neutrophils and INR as well as differences in the levels of IgG, IgM, IL-6, IL1β, IFN-γ and IL-10 between the causes of decompensation (Figure 1) and decreased IgM levels. And IFN-γ in decompensated patients compared to compensated patients. A negative correlation was found between neutrophil levels and IgM, IL6, IL1β, IL10 and IFN-γ levels. The linear regression analysis gave the following formula m= 2.648+ (-0.267*infection) + (-0.926*abs1) + (0.084*abs2) + (0.442*abs3) + (-0.051*abs12) + (0.005*IgM) + (-0.064*IFNγ) + (-0.2*Leukocytes) + (0.223*Neutrophils) + (0.006*Urea), R=0.623. With the same formula, AUROC: 0.877 and p value <0.0001, Youden's J statistic cut-off of 1.3913, obtaining sensitivity of 92.1%, and specificity of 78.9%. The correlation with Child-Pugh is negative with IgM levels, while it was no association between the presence of infection and decompensation (X^2= 0.053, p= 0.818), an association was indeed observed between Child-Pugh and the presence of infection (X^2= 15.126, p= 0.001).

Conclusions: No correlation was found between levels of IgG, IL-6, IL1β, IFN-γ and IL-10 and the MELD 3.0 and Child Pugh scales, there is only a correlation between the Child Pugh clinical stage and IgM. Low levels of IgM and IFN-γ could be markers in patients with decompensated cirrhosis.

Ethical statement: The present study was approved by the research committee of the Central Military Hospital with registration number 045/2024. The samples were obtained under informed consent of the patients.

Declaration of interest: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Table 1
Immunoglobulin and cytokine levels by FTIR

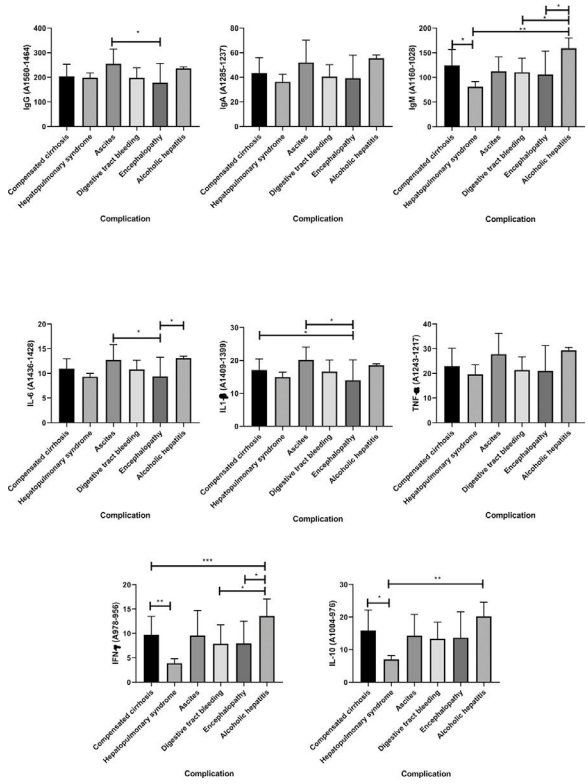
	Compensated	Decompensated	p
IgG (1560–1464 cm^{-1})	203.79 ± 49.42	199.71 ±60.90	0.690
IgA (1285–1237 cm^{-1})	43.44 ± 12.49	42.19 ± 14.98	0.622
IgM (1160–1028 cm^{-1})	124.35 ± 32.39	110.97 ± 39.0	0.044
IL-6 (1436–1428 cm^{-1})	10.94 ± 2.05	10.54 ± 3.06	0.412
IL-1β (1409–1399 cm^{-1})	17.10 ± 3.36	15.99 ± 4.88	0.151
TNF-α (1243–1217 cm^{-1})	23 ± 7.21	22.47 ± 8.06	0.705
IFN-γ (978-956 cm^{-1}),	9.78 ± 3.71	8.23 ± 4.55	0.044
IL-10 (1004–976 cm^{-1})	15.88 ± 6.29	13.61 ± 6.74	0.059

IgA, immunoglobulin A; IgG, immunoglobulin G; IgM, immunoglobulin M; IFN-γ, interferon-gamma; IL-1β, interleukin-1 beta; IL-6, interleukin-6; IL-10, interleukin-10; TNF-α, tumor necrosis factor-alpha.

Table 2
Correlation between neutrophil levels and IgM, IL6, IL1β, IL10 and IFN-γ levels

Neutrophiles	IgG	IgA	IgM	IL6	IL-1β	TNF	IL10	IFN-γ
Pearson correlation	-0.148	-0.160	-.226*	-.199*	-.214*	-0.174	-.273**	-.224*
Sig. (bilateral)	0.111	0.084	0.014	0.032	0.021	0.061	0.003	0.015

Figure 1. Differences between the levels of IgG, IgM, IL-6, IL1β, IFN-γ and IL-10 depending on the cause of decompensation.



https://doi.org/10.1016/j.aohep.2025.101882

Impact of bilirubin molecular species on mortality in patients with acute on chronic liver failure (ACLF).

Stephany M. Castañeda-Castillo[1,2], Jacqueline Cordova-Gallardo[3,4], Liliana Rivera-Espinosa[5], Juan L. Chavez-Pacheco[5], Mariana M. Ramírez-Mejía[1,6], Nahum Méndez-Sánchez[1,4]

[1] *Liver Research Unit, Medica Sur Clinic & Foundation, Mexico City, Mexico City, Mexico*
[2] *Medical, Dental and Health Sciences Master and Doctorate Program, National Autonomous University of Mexico*
[3] *Department of Hepatology, General Hospital Dr. Manuel Gea González, Mexico*
[4] *Faculty of Medicine, National Autonomous University of Mexico*
[5] *Pharmacology Department, National Institute of Pediatrics, Mexico*
[6] *Plan of Combined Studies in Medicine (PECEM-MD/PhD), Faculty of Medicine, National Autonomous University of Mexico*

Introduction and Objectives: Acute-on-chronic liver failure (ACLF) represents a serious and potentially life-threatening complication in patients with chronic liver disease. This condition is characterized by a rapid deterioration of liver function in patients with pre-existing chronic liver disease. Among the numerous biomarkers used to assess the severity and prognosis of ACLF, serum bilirubin has emerged as a key indicator of liver dysfunction and clinical deterioration. This study aims to analyze the performance of molecular bilirubin species, such as unconjugated (UCB), monoglucuronide (BMG) and diglucuronide bilirubin (BDG), and their impact on mortality in individuals with ACLF.

Materials and Patients: The study included 45 patients with ACLF of various etiologies. The diagnosis was made using the European Association for the Study of the Liver (EASL-CLIF) consortium definition. Clinical and laboratory data were collected to determine severity and assess mortality during the 90 days following enrollment. Bilirubin was extracted from serum samples to measure UCB, BMG, and BDG by liquid chromatography-mass spectrometry (LC-MS). The quantification of bilirubin was performed by monitoring the mass charge (m/z) ratio.

Results: Of the 45 patients, 40% (n=18) were categorized as ACLF grade 1, 35.5% (n=16) as ACLF grade 2, and 17.7% (n=8) as ACLF grade 3. Regarding the molecular species of bilirubin, it was observed that the values of UCB, BMG, and BDG increased according to the severity of ACLF, specifically those of BMG (p=0.019). Additionally, it was observed that individuals who died had higher levels of BDG (4.49 vs. 1.17), BMG (64.30 vs. 28.57), and UCB (21.92 vs. 16.99) with respect to individuals who remained alive.

Conclusions: In conclusion, our findings reveal an association between BDG, BMG and UCB levels and ACLF severity, suggesting that the suggest that molecular bilirubin species could be useful as prognostic markers in patients with ACLF. However, further studies are required to validate these findings and further explore the role of bilirubin in the prognosis and pathophysiology of ACLF.

Ethical statement: All procedures performed were carried out in accordance with the ethical standards of the Ethics Committee of the Clinica Medica Sur Foundation (protocol code 2021-EXT-552) and with the 1964 Declaration of Helsinki and its subsequent amendments, or other comparable ethical standards.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101883

Clinical manifestations, and oxidative stress imbalance in children with obesity and MASLD

Isabel Villagómez-López[1], Laura Mejía-Pérez[2], Moisés Martínez-Castillo[1], Liliana Suárez-Bonilla[2], Daniel Santana-Vargas[1], Zaira Medina-Avila[1], Abigail Hernandez-Barragan[1], Jessica Limon-Castillo[1], Dana Mercado-Herrera[1], Gabriela Gutierrez-Reyes[1]

[1] *Liver, Pancreas, and Motility Laboratory (HIPAM), Experimental Medicine Research Unit, Faculty of Medicine, UNAM, General Hospital of Mexico, Dr. Eduardo Liceaga, Mexico*
[2] *Pediatrics Hospital Iztapalapa, SEDESA. Mexico City, Mexico*

Introduction and Objectives: Metabolic dysfunction-associated steatotic liver disease (MASLD) is often considered a multifactorial disease that has shown high incidence in recent years in both children and adults. To date, management criteria, diagnosis, and clinical characteristics are not fully defined in childhood.

Objective: Evaluate anthropometric characteristics, biochemical data, clinical manifestations, and Redox balance status in pediatric patients with obesity.

Materials and Patients: A cross-sectional study that included 300 pediatric patients (aged 8 to 17 years) from the obesity clinic of Iztapalapa Pediatric Hospital. Subjects were classified as with MASLD or without MASLD using hepatic ultrasonography. A thorough evaluation of anthropometric characteristics, clinical features, and blood levels of reduced glutathione (GSH) and oxidized glutathione (GSSG) was conducted. Data were reported as absolute and relative frequencies (%), while continuous variables were determined as mean ± SD and analyzed using Student's t-test and Mann-Whitney U test via SPSS V.22 software.

Results: A total of 95 patients met the inclusion criteria, with 78 cases having MASLD and 17 without MASLD: 27% were aged 8-9 years and 73% were adolescents (10-17 years). Being children receiving care for obesity, anthropometric data (weight, BMI (WHO, CDC), waist/height ratio, waist/hip ratio, and % body fat) showed no significant differences between groups. Greater respiratory difficulty ($p=0.037$) and polyuria ($p=0.047$) were observed in patients with MASLD vs. those without MASLD. Additionally, AST, urea, and creatinine levels were elevated in MASLD ($p<0.05$). Finally, GSH was reduced in MASLD vs. non-MASLD ($p=0.001$), thus altering the GSH/GSSG ratio.

Conclusions: Reduced glutathione indicates increased oxidation in children with MASLD, showing a clear association with liver damage even in the early stages of the disease. The incorporation of new tools in the diagnosis and management of obese children is a primary need to reduce the high prevalence and thus improve quality of life and life expectancy.

Ethical statement: The protocol was approved by the Ethics and Research Committees of the "Dr. Eduardo Liceaga" General Hospital of Mexico (CI/314/15) and the Faculty of Medicine of UNAM (DI 115/2015). All participants provided their assent and written informed consent, and the study was conducted in accordance with the provisions of the Declaration of Helsinki.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101884

Hepatic histologic findings in a murine model of diet induced-steatotic liver disease and acute alcohol intake

Gabriela Sarahi Martínez-Mejia, Miriam G. Bautista-Ubaldo, Gabriela Gutiérrez-Reyes, Carolina Guzmán

Liver, Pancreas, and Motility Laboratory (HIPAM), Experimental Medicine Research Unit, Faculty of Medicine, UNAM, General Hospital of Mexico, Dr. Eduardo Liceaga, Mexico

Introduction and Objectives: Steatotic liver disease is produced by a range of etiologic agents, among them metabolic and alcoholic. Our aim was to identify the histologic findings produced in the liver after the interaction of steatosis induced by the methione-choline deficient (MCD) diet and the acute ethanol consumption in a murine model.

Materials and Patients: 46 male, 10 week-old, C57BL/6 mice were randomly assigned to the following groups: Control, fed LabDiet 5010; MCD, fed the steatogenic diet MCD for 6 weeks; OHa, fed LabDiet, this group received 8 doses i.p. of ethanol (2.5g/Kg), within a scheme of 2 days of administration followed by 1 day rest; MCDOHa, fed MCD for 6 weeks, this group receive 8 ethanol doses during weeks 5 and 6, as described earlier; a group receiving vehicle with the same scheme as the ethanol was included. After treatments, livers were collected. Paraffin sections were stained with hematoxylin-eosin and Masson's thrichrome. Samples were analyzed. Representative histologic findings were considered when present in at least 50% of the samples per group.

Results: Control and vehicle livers did not show alterations. MCD livers showed macrovesicular steatosis (range 33-66%) in portal and central areas, with few or non ballooning, inflammation was observed, as well as portal fibrosis (F1C). OHa group did not showed steatosis, 57% of samples showed sinusoidal dilation in portal areas; necrosis and inflammation were also observed in the portal triad. Fibrosis was observed in 50% of livers. Interaction of both stimulus (MCDOHa) produced macrovesicular diffused steatosis ranging from 50-90% of liver area. 56% of samples showed few ballooning. Increased inflammatory foci were observed compared with MCD. Regarding fibrosis, 56% showed F0. No signs of necrosis were observed compared with OHa.

Conclusions: Interaction among steatosis induced by MCD diet and OHa increases steatosis, at broader areas of the hepatic parenchyma with increased number of inflammatory foci, but no increase in ballooning, and a lower number of liver showed fibrosis compared to MCD.

Ethical statement: All procedures were approved by Ethics committee in Research from General Hospital of México "Dr. Eduardo Liceaga" (DI/22/UME/04/12)

Declaration of interests: None.

Funding: This protocol was funded by CONAHCYT CBF2023-2024-3730

https://doi.org/10.1016/j.aohep.2025.101885

Lophocereus schotti Polar Fraction Reduces *TGFB1* Expression in Chemically Induced Hepatocarcinogenesis

Marina Campos-Valdez[1], Jaime Sánchez-Meza[1], Arturo Orozco-Barocio[2], José A. Domíngez-Rosales[1], Juliana M. Godínez-Rubí[3], Sarai C. Rodríguez-Reyes[4], Erika Matínez-López[4], Miriam R. Bueno-Topete[1], Manuel A. Castro-García[1], Guillermo M. Zúñiga-González[5], Laura V. Sánchez Orozco[1]

[1] *Institute of Chronic Degenerative Diseases, University Center for Health Sciences, University of Guadalajara, Guadalajara, Jalisco, Mexico*
[2] *Center for Biological and Agricultural Sciences, University of Guadalajara, Zapopan, Jalisco, Mexico*
[3] *Laboratory of Diagnostic Pathology and Immunohistochemistry, Department of Microbiology and Pathology, University Center for Health Sciences, University of Guadalajara, Guadalajara, Jalisco, Mexico*
[4] *Institute of Translational Nutrigenetics and Nutrigenomics, University Center for Health Sciences, Guadalajara, Jalisco, Mexico*
[5] *Laboratory of Mutagenesis, Western Biomedical Research Center, IMSS, Guadalajara, Jalisco, Mexico*

Introduction and Objectives: The anticancer effect of *Lophocereus schottii* polar fraction (LsPF) has been tested in models of lymphoma; however, its action in hepatocellular carcinoma remains to be elucidated. The present study aims to analyse the effect of LsPF on the progress of damage induced by diethylnitrosamine (DEN) and N-2-Fluorenylacetamide (2-AAF) chronic administration.

Materials and Patients: Male Wistar rats (180-200 g) were grouped as follows: a) Control (Ctl; n=5); no treatment (Tx), b) LsPF (n=4), treated with LsPF (50 mg/Kg i.g.) 3 times a week; c) Damage (Dmg; n=6), treated with DEN (50 mg/Kg, i.p) the first day, and with 2-AAF (25 mg/Kg, i.g.) on the third day; d) Damage+LsPF (Dmg+LsPF; n=5) received the Dmg group Tx; then, Tx with LsPF started to be administrated along with the Dmg Tx at the seventh week. The Txs were sustained for 13 weeks; livers and serum were collected afterward. Hematoxylin & Eosin and Masson's Trichrome stains, and serum biochemistry were performed. Statistical parametric Student's t-tests or nonparametric Kruskal-Wallis and Mann-Whitney U were performed using the software GraphPad Prism, version 8. A p value < 0.05 was considered significant.

Results: In contrast to Ctl and LsPf groups, the weights of the groups administrated with Dmg Tx were decreased. Additionally, the Dmg Tx produced discoloration and tumors in the liver of the treated rats, and a significant increase in the ratio between the liver and animal weight. Furthermore, serum ALT, AST, ALKP, GGT, total bilirubin, and total proteins levels were increased; significant differences between the Dmg and the Dmg+LsPF groups were not found. The gene expression analysis demonstrated that expression of *CAT*, *SOD*, *COL1A,* and *TGFB1* was significantly increased in the Dmg groups compared to the Ctl group; when these results were compared to the Ctl and the Dmg+LsPF, significant differences were not found. Moreover, *TGFB*1 expression levels were lower in the Dmg+LsPF compared to Dmg group. LsFP tx increased the ALT and total protein levels in serum, and the expression of *CAT* and *COL1A* by itself. Nevertheless, the histological analysis did not display any alterations due to the administration of this fraction.

Conclusions: LsPF administration did not show a significant effect over the damage on the liver; however, the gene expression analysis provided indications that this fraction might be acting over genes related to HCC development.

Ethical statement: The study protocol (code CI-01720) was approved by the Ethics, Research, and Biosecurity Committee of the Universidad de Guadalajara on 20 October 2020.

Declaration of interests: The authors declare no conflict of interest.

Funding: Grant PIN 2021 CUCS, UdeG, P3E 271879-2023 and PRO SNI UdeG.

https://doi.org/10.1016/j.aohep.2025.101886

Colorimetric test for early diagnosis of spontaneous bacterial peritonitis.

Claudia G. Solis-Hernandez, Marycamen Alegria-Ovando, Kenia M. Bastida-Guadarrama, F. Yael Duran-Vargas, Paola Zuñiga-Escobedo, Monica Garcia-Baca, D. Ernestina Espinoza-Lopez, Rodrigo Toledo-Galvan, Jessica Mejia-Ramirez, Maria F. Higuera de la Tijera, Jose L. Perez-Hernandez

Gastroenterology and Hepatology, General Hospital of Mexico "Dr. Eduardo Liceaga", Mexico

Introduction and Objectives: The diagnosis of spontaneous bacterial peritonitis (SBP) requires biochemical analysis that can sometimes take time, so having an effective and rapid method could shorten the time to start the antimicrobial and reduce the risk of complications. Objective: To validate the colorimetric test (reagent strips) in the diagnosis of SBP.

Materials and Patients: Observational, prolective, and analytical study of the colorimetric test for the diagnosis of PBE. Diagnostic paracentesis was performed in patients with suspected PBE, for the analysis of the fluid by means of the colorimetric scale of the Mission test strip and compared with the cytochemical analysis in the laboratory (polymorphonuclear ≥ 250 cells/mm^3). To assess the test strip as a diagnostic test, a cut-off point of strip reading $\geq$15 leukocytes is used. A 2×2 table is used to compare the positives and negatives of PBE by both cytochemical and dipstick methods. S, E, PPV and NPV were calculated.

Results: 42 patients with ascites and suspected SBP were included. Of these, 24 patients (57.14%) were in Child-Pugh stage C, 17 patients (40.27%) were in Child-Pugh stage B and only 1 patient (2.38%) was in Child-Pugh stage A. The causes of chronic liver disease were alcohol consumption in 17 patients (40.27%), MASLD in 15 patients (35.71%), autoimmune liver disease in 4 patients (9.52%), unaffiliated etiology in 4 patients (9.52%), infection secondary to hepatitis C virus in 2 patients (4.76%). Of the total, 23 patients (54.7%) were female with a mean age of 54 years (SD $\pm$ 12.06). Thirteen patients were diagnosed with PBE, 81% of them with grade II ascites. The sensitivity of the dipstick compared to the cytochemical method was 92.3%, its specificity 86.2%, its positive predictive value (PPV) 99.4%, and its negative predictive value (NPV) 98.6%.

Conclusions: Colorimetry (test strips) show adequate sensitivity and specificity, making them a low-cost, easy-to-use, but above all quick to interpret tool for early initiation of antimicrobial therapy in patients with ascites and spontaneous bacterial peritonitis. Although the sample is small, it shows an interesting trend that should be confirmed.

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

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101887

The Hepatic Effect of Sub-chronic Chronic Cadmium Exposure.

Jessica N. Jiménez-Fabián[1,2,3], Karina Martínez-Flores[4], Leticia Bucio-Ortiz[2,3], Roxana U. Miranda-Labra[2,3], Luis E. Gómez-Quiroz[2,3], María C. Gutierrez-Ruíz[2,3], Veronica Souza-Arroyo[2,3]

[1] *Graduate Program in Experimental Biology, Division of Biological and Health Sciences, Universidad Autónoma Metropolitana, Mexico City, Mexico*
[2] *Experimental and Translational Medicine Area, Department of Health Sciences, Universidad Autónoma Metropolitana, Mexico City, Mexico*
[3] *Laboratory of Experimental Medicine, Translational Medicine Unit, IIBB/UNAM, National Institute of Cardiology Ignacio Chávez, Mexico City, Mexico*
[4] *Synovial Fluid Laboratory, National Rehabilitation Institute Luis Guillermo Ibarra Ibarra, Mexico City, Mexico*

Introduction and Objectives: MAFLD is an umbrella disease characterized by lipids storage. Epidemiological studies found that cadmium (Cd) exposure is related to the development of MAFLD. We're interested in evaluating the effect of Cd exposure on lipid accumulation in the liver.

Materials and Patients: Eight-week-old CD-1 mice were exposed to Cd (10mg/L) for one and three months, sub-chronic and chronic models, respectively; they were fed with a Chow diet, recording the weight of the animals periodically. Euthanasia was performed, and the liver was macroscopically inspected. Liver damage enzymes were assayed in serum. Liver sections were stained with H&E for morphometric analysis, Sirius red for fibrosis, and Red Oil O (ORO) for lipids. By biochemical studies, we determined the triglycerides and cholesterol content in the liver. The protein content of MAPKs was evaluated by western blot.

Results: Cd consumption in both models did not affect the weight of the mice. However, it promoted intestinal inflammation during one month of exposure. Liver/body weight ratio was obtained, despite which Cd was not found to promote hepatomegaly at one and three months of exposure. By H&E, we found that sub-chronic exposure to Cd favored hepatocyte proliferation, and chronic exposure triggered death after cell proliferation; despite this, liver damage enzymes did not increase in serum following sub-chronic and chronic exposure. Subsequently, we evaluated fibrosis in chronic treatment without finding that Cd promotes its accumulation of collagen in the liver. Likewise, we analyzed hepatic triglyceride and cholesterol accumulation without finding that Cd causes lipid accumulation after sub-chronic and chronic exposure. Finally, we evaluated the activation of MAPKs in our model. We found that Cd favors the activation of p38 and the repression of JNK in chronic exposure, suggesting a damage-repair mechanism.

Conclusions: Sub-chronic and chronic exposure to Cd (10 mg/L) does not affect physiological parameters; however, activation of p38 is observed, suggesting a liver damage/repair mechanism and possible repression of JNK, which could prevent lipid accumulation.

Ethical statement: UPEAL and UAM Xochimilco provided animal models, and animal handling was carefully performed according to NOM-062-1999**.**

Declaration of interests: None.

Funding: Supported by the Universidad Autónoma Metropolitana, Iztapalapa, Mexico.

https://doi.org/10.1016/j.aohep.2025.101888

Prolonged release pirfenidone restores miRNA expression and CpG island methylation in patients with HCV sustained virological response and residual liver fibrosis

Eira Cerda-Reyes[1], Ricardo de la Rosa-Bibiano[2,3], Ana Sandoval-Rodriguez[2], Rebeca Rosas-Campos[2], Rebeca Escutia-Gutiérrez[2], Ángel Vázquez-Esqueda[2], Stefanny Cornejo-Hernández[1], Alejandro Gutiérrez-Átemis[1], Salvador Amezquita-Pérez[1], Jorge Luis Poo[4], Gildardo Agustin Garrido-Sanchez[1], Juan Ramón-Aguilar[1], Juan Armendáriz-Borunda[2,5]

[1] *Gastroenterology Section, Hospital Central Militar. Mexico City, México*
[2] *Institute for Molecular Biology in Medicine and Gene Therapy, Department of Molecular Biology and Genomics, Health Sciences University Center, University of Guadalajara. Guadalajara, México*
[3] *Doctorate in Science in Molecular Biology in Medicine, Mexico*
[4] *Mexican Group for the Study of Liver Diseases, Tlalpan, Mexico City, Mexico*
[5] *Tecnologico de Monterrey, EMCS. Zapopan, México*

Introduction and Objectives: Patients with residual liver fibrosis after hepatitis C virus-infection clearance represent an important challenge due to the risk of progression and hepatocarcinoma development. The primary end of this study was to evaluate epigenetic marks in DAA-responders HCV non-European patients presenting remaining fibrosis. The secondary aim was to assess the efficacy of 12 months of treatment with prolonged-release pirfenidone (PR-PFD) in liver fibrosis regression.

Materials and Patients: Forty-four DAA-responders HCV patients presenting remaining fibrosis (73% women) were enrolled in the study and received PR-PFD (1200 mg/day) for 12 months. Six patients dropped out. Liver biopsies and serum samples were analyzed at the beginning and end of treatment. Besides, six non-fibrotic controls were included to compare epigenetics marks.

Results: After 12 months of treatment, 28.94% of patients showed a reduction in at least 1 fibrosis stage based on liver biopsies, while 57.57% experienced fibrosis reversion according to transient elastography. Bilirubin, alkaline phosphatase, AST, INR, and APRI values significantly decreased, and only minor adverse events were reported. Profibrogenic miRNAs displayed a significant increase in expression in advanced fibrosis versus controls without fibrosis. Noteworthy, PR-PFD treatment induced their decrease and restored the expression of miR-34a, miR-16, miR-192, miR-200a and miR-122 correlating with the downgrade of fibrosis stage. Specific PDGFa CpGs exhibited hypermethylation in both cell-free-DNA and liver biopsies in both mild and advanced fibrosis. Interestingly, four CpGs in PPARd promoter were hypomethylated versus controls. PR-PFD treatment resulted in hypermethylation in three TGFb1-CpGs after 12 months, suggesting down-regulation of this profibrogenic cytokine.

Conclusions: These findings suggest, for the first time, that PR-PFD might exert its therapeutic effects in Hispanic patients with residual fibrosis by modulating the expression of miRNAs and methylation of specific CpG sites.

Ethical statement: All subjects signed their informed consent for inclusion before they participated in the study. The clinical trial was conducted in accordance with the Declaration of Helsinki, and the protocol was approved by the Ethics Committee in Research of Hospital Central Militar (ID: 013/2019).

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Declaration of interest: None.

https://doi.org/10.1016/j.aohep.2025.101889

Lactate/albumin ratio as an indicator of mortality in patients hospitalized with ACLF at the Juárez Hospital in Mexico.

G. Bretón-Arroy, LA. Robles-Casanova,
M. Coutiño-Flores, MR. Herrero-Maceda,
SMI. Mejia-Loza

Gastroenterology Department, Hospital Juárez, México City, Mexico

Introduction and Objectives: Albumin and lactate are markers of systemic inflammation, which are altered by their hepatic metabolism; however, they can be useful indicators of mortality in patients with cirrhosis. To determine the association between lactate/albumin ratio levels and mortality in patients with ACLF.

Materials and Patients: A retrospective and observational cohort study was conducted. Eighty-five patients diagnosed with ACLF according to the EASL-CLIF criteria were included from February 2022 to May 2024. Patients with hepatocellular carcinoma were excluded. Data analysis was performed using GraphPad Prism version 10.2.3 and Microsoft Excel software. An ROC curve was performed to establish the cutoff point of the lactate/albumin ratio, as well as determine the sensitivity and specificity of the model to predict 28-day mortality.

Results: Eighty-five patients were included, 68 (80%) men and 17 (20%) women; average age 52.4 years (39 -80). Alcohol consumption was the main cause of cirrhosis in 74 (87.05%), autoimmune diseases in 7 (8.23%), and MASLD in 4 (4.70%) **(Table 1)**. 12 patients (14.11%) had ACLF grade 1, 29 (34.11%) grade 2 and 44 (51.76%) grade 3. With failure: kidney 61 (71.76%), liver 57 (67.05%), brain 49 (57.64%), coagulation 37 (43.52%), respiratory 15 (17.64%) and circulatory 5 (5.88%) **(Table 1)**. 37 (43.52%) died within the first 28 days. The cutoff point of the lactate/albumin ratio was 1.74 (AUC 0.87), with a p value <0.0001, sensitivity 71.7% and specificity 58.8% (95% CI) **(Figure 1)**.

Conclusions: The cutoff point of the lactate/albumin ratio of 1.74 allows for the objective prediction of mortality in patients with ACLF using easily accessible laboratory tests.

Ethics statement: The protocol was registered and approved by the Ethics Committee. The identity of the patients is protected. Consent was obtained.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Figure 1. Lactate/albumin ratio AUC.

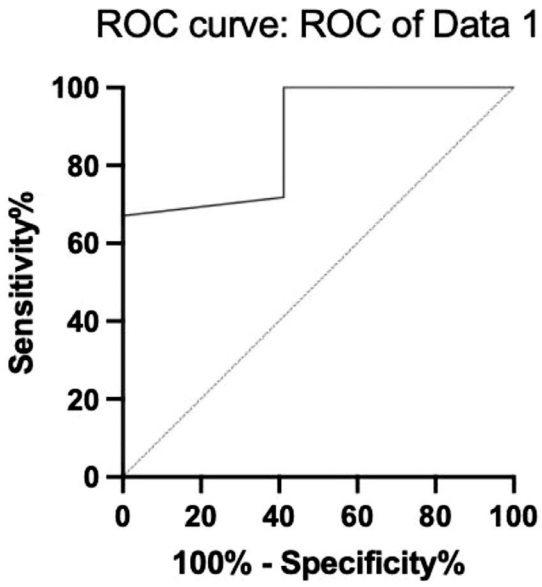


Table 1
Descriptive statistics of study population.

Age years	39- 80
Sex:	
Male, N (%)	68 (80%)
Female, N (%)	17 (20%)
Cirrhosis etiology:	
Alcohol, N (%)	74 (87.05%)
Autoimmune, N (%)	7 (8.23%)
MAFLD, N (%)	4 (4.70%)
ACLF:	
Grade 1, N (%)	12 (14.11%)
Grade 2, N (%)	29 (34.11%)
Grade 3, N (%)	44 (51.76%)
Organ failure:	
Kidney, N (%)	61 (71.76%)
Liver, N (%)	57 (67.05%)
Brain, N (%)	49 (57.64%)
Coagulation, N (%)	37 (43.52%)
Respiratory, N (%)	15 (17.64%)
Circulatory, N (%)	5 (5.88%)

ACLF, acute-on-chronic liver failure; MAFLD, metabolic dysfunction-associated fatty liver disease.

https://doi.org/10.1016/j.aohep.2025.101890

Sarcopenia evaluated by phase angle is associated with complications and mortality Pre- and Post-Liver Transplantation

Atzin M. Melchor-Zepeda, Mariana López-Caracas,
Andrea Reyna-Sariñana,
Renata S. Montemayor-Salazar,
Luis E. Gutierrez Rosas, Berenice M. Román-Calleja,
Ricardo U. Macías Rodriguez, Astrid Ruiz-Margáin

Hepatology and Liver Transplant Service, Department of Gastroenterology, National Institute of Medical Sciences and Nutrition Salvador Zubirán, Mexico

Introduction and Objectives: Sarcopenia is a marker of poor prognosis in patients with cirrhosis. Evidence on the role of sarcopenia prior to liver transplantation (LT) and its impact on post-transplant outcomes remains limited. Phase Angle (PhA) is a nutritional marker that has been validated against CT scan for assessing sarcopenia in cirrhosis. We aimed to evaluate the association between phase angle and the development of complications and mortality before and after liver transplantation.

Materials and Patients: This was a retrospective cohort study conducted at a tertiary care center. Patients with cirrhosis of any etiology, being evaluated for liver transplant that had a phase angle measurement before LT were included. We excluded patients that were considered for LT for causes different from cirrhosis (polycystic liver disease, benign bile duct injury, acute liver failure, etc.). For statistical analysis descriptive statistics were used, along with ROC curves and Youden index, Kaplan-Meier survival analysis and Cox regression models were also applied.

Results: A total of 141 patients were included in the study, of which 55% were women, with a mean age of 53 $\pm$ 13 years. Mean phase angle was 4.5 $\pm$ 2.1, and the mean MELD Na score was 17 $\pm$ 7; most patients (45.4%) were classified as Child-Pugh C stage. The median follow-up period was 224 days (range 83-301). At least one hospitalization was required for 49.1% of patients, with a waiting list mortality rate of 35.7%, primarily due to septic shock (36.3%). Post liver transplant mortality was 13.8%. Complications were observed in 65.5% of patients, predominantly infections (25%). ROC curves indicated that a PhA < 3.8° was associated to an increased risk of hospitalization and infectious complications both before and after LT, with

Area Under the Curve (AUC) values of 0.703, 0.683, and 0.704, respectively ($p < 0.001$). Kaplan-Meier survival analysis showed better outcomes for patients with PhA > 3.8° ($p = 0.001$). Two multivariate models were developed to account for collinearity: in both, a lower PhA <3.8° was associated with a higher mortality risk, with Hazard Ratios (HR) of 1.98 (1.02-3.84) and 2.01 (1.02-3.94), independent of MELD score and Child-Pugh stage, respectively.

Conclusions: Sarcopenia, assessed by phase angle, is associated with complications before and after liver transplantation, particularly infections, higher number of hospitalizations, and increased mortality.

Ethical statement: This study was approved by the local ethics committee and conducted according to its standards.

Declaration of interests: None

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101891

Liver transplant in syndromatic biliary atresia

Elizabeth Hernández-Chávez[1],
Nidia de Monserrat Arreola-Gutierrez[2],
José Manuel Zertuche-Coindreau[2]

[1] *Pediatrics Gastroenerology and Nutricion department, Pedriatrics Hospital, CMNO IMSS, Mexico*
[2] *Hepatic transplant and surgery department, Pediatrics Hospital CMNO IMSS. Guadalajara, Jalisco, México*

Introduction and Objectives: Biliary atresia (BA) is an obliterative cholangiopathy, there are at least two phenotypes, one of them is the syndromic form, which occurs in 10-15% of cases, it is associated with polysplenia, heart disease, heterotaxy and malrotation intestinal. The objective of this review is to present the experience when performing liver transplantation

Materials and Patients: Female patient daughter of a diabetic mother, carrier of BA type III who underwent Kasai surgery at 89 days of life, carrier of intestinal malrotation, preduodenal portal vein, intraventricular communication of 1.7 mm without hemodynamic repercussion and dyslipidemia, without biliary clearance and pondostatural arrest, worthy of performing a liver transplant from an unrelated living donor, due to complications of cirrhosis such as ascites, malnutrition and cholesasis, at the time of surgery, annular pancreas, were found as additional findings to those described agenesis of cava, agenesis of the celiac trunk, presented early partial thrombosis of the portal vein, meriting anticoagulant and antithrombotic treatment, with resolution of the condition, without requiring surgical intervention. Currently, after one year of follow-up with adequate evolution, without cholestasis or transaminasemia, adequate growth, immunosuppression with a calcineurin inhibitor, the dyslipidemia resolved. Our patient does not have polysplenia.

Results: The clinical case of syndromic BA is presented, although BA is rare, the syndromic presentation is even more, so we present a successful case, with complex vascular malformations combined with extrahepatic malformations, mainly cardiac, with which mortality at time of performing the transplant is high, greater than 90%. Our patient had a satisfactory surgical and clinical evolution.

Conclusions: BA is the main cause of liver transplantation in pediatrics; reported cases of the syndromatic type are rare. The complete evaluation and planning of possible vascular malformations associated at the time of transplantation should alert the medical and surgical team.

Ethics statement: No patient-identifying data is used in this presentation.

Declaration of interests: None.

Funding: This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

https://doi.org/10.1016/j.aohep.2025.101892

PAI-1 participation in hepatocyte epithelial-mesenchymal transition induced by HCV NS5A or Core proteins.

Tania G. Heredia-Torres[1],
Sonia A. Lozano-Sepúlveda[1],
Ana R. Rincón-Sánchez[2], Ana María G. Rivas-Estilla[1]

[1] *Department of Biochemistry and Molecular Medicine, Center for Research and Innovation in Medical Virology, School of Medicine, Universidad Autónoma de Nuevo León, Monterrey, Nuevo León, Mexico*
[2] *BMMTG, Department of Molecular Biology and Genomics, University Center for Health Sciences, University of Guadalajara, Guadalajara, Jalisco, Mexico*

Introduction and objectives: Chronic HCV infection induces the development of liver fibrosis mediated by hepatocyte epithelial-mesenchymal transition (EMT). Plasminogen activator inhibitor (PAI-1) has been associated with fibrosis. Objective: To evaluate the participation of PAI-1 in the EMT of hepatocytes induced by HCV proteins.

Materials and patients: Huh7 cells were transfected with 1μg of the plasmid to express HCV NS5A or Core proteins, cells were co-cultured with hepatic stellate cells (LX2), at 48 and 72 hours of co-culture, the expression of LX2 activation biomarkers were determined by western blot and RT-qPCR. Likewise, transcriptional expression of 84 genes associated with fibrosis in Huh7 was determined by RT-qPCR array. Bioinformatic analyses were performed with Enrichr and STRING. *serpine1* (PAI-1) was selected as one of the differentially expressed genes, Huh7 cells were transfected with NS5A or Core, and after 24 hours gene silencing was performed with siPAI-1 (5nM) and pharmacological treatment with TM5275 (25 μM) to inhibit the PAI-1 function. After 24 and 48 hours of treatment, the expression of the viral proteins was validated by chemiluminescence and western blot. Likewise, the PAI-1 inhibition was validated and the translational expression of EMT markers (TGFβ1, Snail, E-cadherin, and Vimentin) was evaluated in Huh7 cells by western blot and densitometric analysis.

Results: NS5A and Core expression in Huh7 cells co-cultured with LX2 cells, induced transcriptional overexpression of TGFβ1, Col1α1, and Timp1, suggesting LX2 activation. We observed 28 genes differentially expressed in Huh7 (NS5A+) and 46 genes were differentially expressed in Huh7 (Core+) during co-culture with LX2 cells. Bioinformatics analyses were performed, and serpine1 (PAI-1) was identified as a differentially expressed gene. On the other hand, at the translational level, NS5A induced the overexpression of TGFβ1 and Snail (4-fold) and subexpression of E-cadherin (0.6-fold). Likewise at the translational level, Core induced the overexpression of Snail (2.5-fold) and subexpression of E-cadherin (0.4-fold), compared to the control, suggesting the EMT of Huh7. A gene silencing of 60% of PAI-1 was obtained in all groups. this silencing induces a reduction of 50% of vimentin expression at the translational level in all groups. On the other hand, TM5275 decreased the expression of TGFβ1 by 60% both in the control group and in the NS5A transfected cells. Likewise, TM5275 increased the expression of E-cadherin at the translational level by 60% both in the control group and in the Core transfected cells.

Conclusions: HCV proteins regulate the expression of molecular markers and signaling pathways in hepatocytes associated with the development of EMT, such as PAI-1. At the same time, PAI-1 inhibition negatively regulates this EMT, which is important to understand the pathophysiology of HCV damage.

Ethical statement: not applicable

Declaration of interests: None.

Funding: Financial support was provided by the Department of Biochemistry and Molecular Medicine and CIIViM, School of Medicine, Universidad Autónoma de Nuevo León (UANL), Monterrey, Nuevo León 64460, México.

https://doi.org/10.1016/j.aohep.2025.101893

Acute Liver Failure due to Hepatitis A Virus: A Report of Two Cases

Mónica Acosta-Gómez, Pedro I. Elizondo-Ramos, Arturo Sánchez-Terán, José M. Rangel-Calderón

Regional Hospital Pemex, Ciudad Madero, Mexico

Introduction and Objectives: Acute liver failure is a high-mortality emergency, responsible for 8% of liver transplants worldwide. Acetaminophen is the most common cause in 65% of cases, with viral causes accounting for 19%, and less than 1% of patients with hepatitis A developing acute liver failure.

Materials and Patients: Two adult patients with clinical symptoms and serological confirmation for Hepatitis A were included. Initially, both were managed with supportive treatment on an outpatient basis. However, they were admitted to the hospital due to altered consciousness, jaundice, asthenia, and adynamia. Both presented the following risk factors: obesity BMI >30, alcohol consumption, with one patient having a greater exposure to alcohol at 450 grams/week for 26 years and one aged >40 years. Additionally, both patients required mechanical ventilation due to the progression of encephalopathy, with no signs of hypertensive encephalopathy measured by the optic sheath nerve.

Results: Two cases of patients with Hepatitis A who developed acute liver failure are reported. Severity was assessed using the British King's College and MELD scales. Both received medical treatment with consideration for liver transplantation. Patient A exhibited hyperlactatemia but did not meet the criteria for transplantation according to King's College. His MELD score was 32, with an estimated mortality of 52.6% at three months. Patient B presented two additional criteria without indication for transplantation. His MELD score was 38, with a similar mortality risk. Despite similar scales, outcomes diverged due to advanced age, alcoholism, and the need for renal therapy, risk factors for mortality. Using the LIU system, a score above 240 predicted an unfavorable prognosis.

Conclusions: The evaluation of two cases of hepatitis A with acute liver failure highlights the importance of considering risk factors such as age and alcohol consumption. The MELD prognostic scale proved to be more accurate than LIU in predicting mortality in this specific context.

Ethical statement: The study was conducted in accordance with institutional ethical standards.

Declaration of interests: There is no conflict of interest.

Funding: No external funding was received for this study.

Subjet	Scale	Result	Mortality
A	MELD	32	52.6%
A	Kings College	0	N/A
A	ALFED	5	88.5
B	MELD	38	52.6%
B	Kings College	2	N/A
B	ALFED	3	33%

https://doi.org/10.1016/j.aohep.2025.101894