

Introduction and Objective: This study aimed to determine the prevalence of liver fibrosis through non-invasive methods in patients with metabolic disorders.

Materials and Methods: Observational, cross-sectional, and retrospective analytical study. Laboratory results and images of patients diagnosed with metabolic alterations in the *CMN 20 de Noviembre* will be collected.

Results: Among the results obtained, we found that the prevalence of fibrosis was 18.1%, and hepatic steatosis was 59.8%.

Discussion: ALT, C-peptide, and insulin levels were significantly higher in the group with fibrosis. When the variables were dichotomized, an OR of 2.91 (95% CI 1.099 – 7.73) was found for ALT >38.5; Insulin > 17.75, the OR was 3.199 (95% CI 1.20 – 8.5); and for C-peptide > 945 OR 4.049 (95% CI 1.42 – 11.51). The albumin level was significantly lower in this group $p = 0.041$, with an OR 0.29 (95% CI 0.104 – 0.815), so a value greater than 4.35 represents a protective factor. The NALFD score and FIB4 showed a weak positive correlation with the measurements made with the Fibroscan®.

Conclusions: The determination of liver fibrosis did not correlate through the different non-invasive methods, so it would be best to establish non-invasive liver-specific markers in patients with metabolic disorders and steatohepatitis for the diagnosis of liver fibrosis; since the necessary and accurate diagnostic tools that meet the criteria of efficacy, accuracy, and reliability are not available.

Funding: The resources used in this study were from the hospital without any additional financing

Declaration of interest: The authors declare no potential conflicts of interest.

<https://doi.org/10.1016/j.aohep.2022.100788>

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

A Burak-Leipuner¹, F García-Gorrosquieta¹, N Uribe-Rivera¹, A Servín-Caamaño², JA Romero-Bermúdez², LE Ceceña-Martínez², P Alagón-Fernández del Campo¹, FY Vargas-Duran¹, AK Soto-Martínez¹, CI Hinojosa-Segura¹, D Montemira-Orozco¹, JL Perez-Hernández¹, G Alexanderson-Rosas², F Higuera-de la Tijera¹

¹ Gastroenterology and hepatology. General Hospital of Mexico "Dr. Eduardo Liceaga. Mexico City, Mexico

² Internal Medicine Services. General Hospital of Mexico "Dr. Eduardo Liceaga. Mexico City, Mexico

Introduction and Objective: Younossi ZM *et al.* have recently reported a higher prevalence of fatty liver disease associated with metabolic dysfunction (MAFLD) in diabetics (55.5%) versus the general population (25%); however, in Mexico, the prevalence of steatosis and fibrosis related to MAFLD in patients with type 2 diabetes (DM2) is not precisely known. This study aimed to determine the prevalence of hepatic fibrosis and steatosis by transition elastography and controlled attenuation parameter (CAP) using the FibroScan® equipment in patients with DM2.

Materials and Methods: Observational, descriptive, transversal study included patients who attended the outpatient clinic for DM2 diagnosis between August- 2018 and May- 2022 and who underwent FibroScan® to determine the absence/presence and degree of fibrosis and steatosis. The following were excluded: patients with risky

alcohol consumption, Hepatitis B/C, any type of liver disease or previously diagnosed cirrhosis, and consumption of additional drugs to those for MS. Descriptive statistics were used and the prevalence of steatosis and fibrosis determined by Fibroscan® was estimated.

Results: 183 patients, 64.3% women, mean age 56.1±10.2 years. According to BMI, 81.4% were also overweight/obese (36.6% overweight, 27.2% grade-I obesity, 12.2% grade-II obesity, and 5.4% grade-III obesity). 53.8% also met the criteria for MS. 71.3% had glycosylated hemoglobin, of which 41.6% were out of the target (HbA1c >7.0). Regarding the degree of fibrosis, we found: F4= 29.1%, F3= 6.9%, F2= 4.6%, F1= 2.3% and F0= 57.1%. Regarding the steatosis degree, we found: S3= 23.4%, S2=18.3%, S1=11.7% and S0= 9.7%. Regarding adherence to treatment, we found poor adherence in 39.0%, good adherence in 61.0% and 6.5% of patients were not determined.

Conclusions: The prevalence of steatosis and fibrosis associated with MAFLD is high in Mexican diabetic patients.

Funding: The resources used in this study were from the hospital without any additional financing

Declaration of interest: The authors declare no potential conflicts of interest.

<https://doi.org/10.1016/j.aohep.2022.100789>

The usefulness of 3 different points of the liver to evaluate fibrosis by transitional elastography

E Morales-Mairena, MF Higuera-de-la Tijera, DA Santana Vargas, E Rene Borages, A Burak Leipuner, IA García Espinosa, F García Juárez, JL Pérez-Hernández

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

Introduction and objective: The degree of liver fibrosis is diagnosed, among other studies, with transition elastography; it is known that liver injury is heterogeneous, so underdiagnosing the degree of fibrosis when performing the survey at a single point may be possibly described in a standard way. This study aimed to evaluate the sensitivity of transition elastography at three different points to determine its performance.

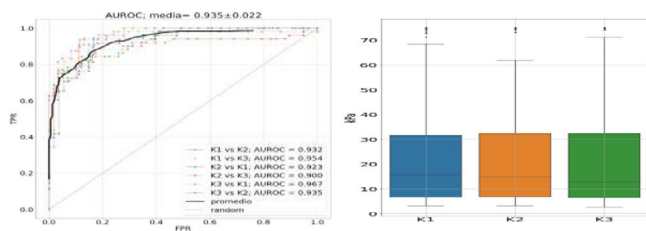
Materials and Methods: Patients with liver disease were included; transition elastography was performed at three different points, point A at the site indicated by the manufacturers; point B, an intercostal space downwards; and point C, an intercostal space upwards; descriptive and inferential statistics were performed.

Results: One hundred nine patients were evaluated, 64 men (59%) and 45 women (41%) average age of 52.6. Paired t-tests were run between the three different combinations (K1 vs. K2, K1 vs. K3, and K2 vs. K3). For all these tests, the value of $p > 0.05$, no statistically significant differences were found between the measurements. Correlation tests were performed between the same combinations, finding a value of $p < 0.05$ for the three, which means that the observations are correlated. ROC curves were constructed. It can be seen that in all 6 cases, the ROC curve is close to the ideal values. Figures 1 and 2.

Conclusions: For the diagnosis of fibrosis, there is no difference between the three points in the same organ, even though the liver injury is heterogeneous.

Funding: The resources used in this study were from the hospital without any additional financing

Declaration of interest: The authors declare no potential conflicts of interest.



Figures 1 and 2.

<https://doi.org/10.1016/j.aohep.2022.100790>

Liquid biopsy of patients with advanced liver fibrosis reveals the association of methylation in CpGs and miRNAs expression with the degree of severity

R De la Rosa-Bibiano^{1,2}, R Escutia-Gutiérrez¹, S Rodríguez-Sanabria¹, E Cerda-Reyes², JM Aguilar², A Santos³, AS Sandoval-Rodríguez¹, J Armendáriz-Borunda^{1,3,4}

¹ Institute of Molecular Biology in Medicine. CUCS. University of Guadalajara

² Hospital Central Militar

³ Faculty of Medicine and Health Sciences. Tecnológico de Monterrey. Zapopan, Guadalajara, Mexico

⁴ Departments of Gastroenterology, Radiology, Pathology and Clinical Laboratory. Central Military Hospital. Mexico

Introduction and Objective: This study aimed to assess whether the expression of specific miRNAs and the percentage of DNA methylation of the Peroxisomal Proliferator-Activated Receptors (PPAR) α , γ and δ genes in tissue and liquid biopsy from patients with advanced liver fibrosis (F3 and F4) is associated to the degree of severity.

Materials and methods: Transjugular liver biopsy and liquid biopsy were collected from 23 patients with sustained viral response to the hepatitis C virus, with advanced residual fibrosis (F3 and F4). The percentage of methylation in CpG islands of the promoters of the PPAR α , PPAR γ and PPAR δ genes and the expression levels of miRNAs were determined. Masson's trichrome hematoxylin-eosin staining was performed. DNA was extracted from tissues and plasma, and percent methylation was measured by pyrosequencing. Extraction and isolation of miRNAs from liver tissue were performed: miR-21, miR-34, miR-122, miR181b, miR192, miR-200a/b and their expression level compared to miR-16 was evaluated. The trial was approved by the research ethics committee, and informed consent was obtained.

Results: Higher promoter methylation percentages were observed in patients with more severe degrees of fibrosis (F4), both in tissue and in liquid biopsy. In addition, overexpression of miRNAs was associated with the degree of fibrosis.

Discussion: Epigenetic mechanisms (DNA methylation and microRNA expression) regulate the expression of multiple genes and their status may be a biomarker associated with the degree of fibrosis.

Conclusion: Liquid biopsy is an effective and accessible method for evaluating the degree of fibrosis.

Funding: The resources used in this study were from the hospital without any additional financing

Declaration of interest: The authors declare no potential conflicts of interest.

<https://doi.org/10.1016/j.aohep.2022.100791>

Increase in liver fibrosis in patients with inflammatory bowel disease at the inflammatory bowel disease clinic, Centro Medico Nacional 20 de noviembre

IE Severino-Ferreras¹, LO Rodríguez-Muñoz¹, JG Lopez-Gómez²

¹ Department of Gastroenterology. National Medical Center "20 de Noviembre", ISSSTE. Mexico City, Mexico

² Inflammatory Bowel Disease Clinic. National Medical Center "20 de Noviembre", ISSSTE. Mexico City, Mexico

Introduction and Objective: To determine the progression to liver fibrosis secondary to non-alcoholic fatty liver disease (NAFLD) by non-invasive methods in patients with Inflammatory Bowel Disease (IBD).

Material and Methods: Descriptive, cross-sectional, and retrospective study. Variables analyzed: age, sex, type of IBD, treatment, Fibrosis-4 (FIB-4) and NAFLD fibrosis score (NFS). The SPSS version 25 program was used, with univariate analysis, 95% CI and significant $P < 0.05$.

Results: Of 125 patients, 88 (70.4%) had chronic nonspecific ulcerative colitis (UC) and 37 (29.6%) had Crohn's disease (CD). NAFLD was found in 20 patients (16%), with fibrosis in 20% (4 patients), as well as cirrhosis (20%) without statistical significance (Table 1). Grade F0-F2 (NFS<1.455) was more frequent in both groups, with no significant correlation with IBD. Ustekinumab correlated with NAFLD without fibrosis ($P < 0.05$), while mesalazine correlated significantly with liver fibrosis (F3-F4).

Discussion: NAFLD occurs in 50% of patients with IBD. The pathogenesis includes, on the one hand, the release of cytokines and adipokines that lead to increased inflammation and hepatic fibrosis and, on the other, altered intestinal permeability, with the consequent hepatic fatty infiltration. For its diagnosis, non-invasive tools were created, such as NFS and FIB-4, with the best predictive value for advanced liver fibrosis.

Conclusions: The occurrence of NAFLD and progression to fibrosis were significantly correlated with the treatment of the underlying disease.

Funding: The resources used in this study were from the hospital without any additional financing

Declaration of interest: The authors declare no potential conflicts of interest.