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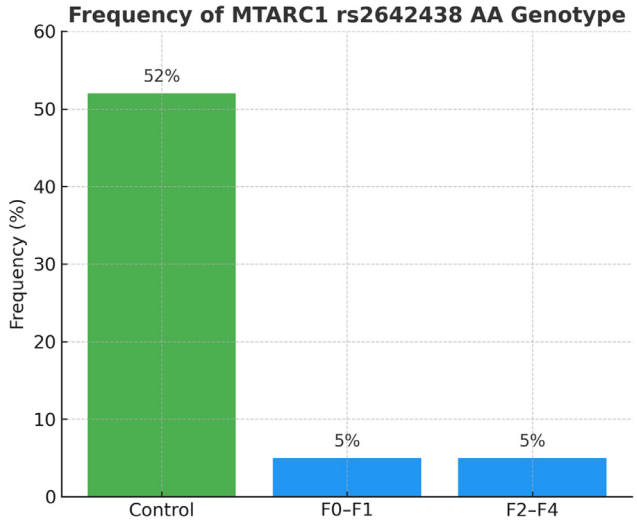

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#6

INFLUENCE OF GLYCEMIC CONTROL ON THE SEVERITY OF HEPATIC STEATOLOGY IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Introduction and Objectives: Type 2 diabetes mellitus (T2DM) has a prevalence of 18.3% in Mexico and is associated with metabolic dysfunction-associated steatotic liver disease (MASLD), which has a prevalence of 30%.Considering glycosylated hemoglobin (HbA1c) a relevant biomarker in the evaluation of glycemic control.

The objective of the study was to analyze the association between HbA1c levels and the degree of hepatic steatosis in patients with type 2 diabetes mellitus (DM2).

Materials and Methods: Observational, descriptive, and retrospective study in 90 patients over 18 years old with DM2 attended in the outpatient gastroenterology clinic at a tertiary care center, between February 2024 and February 2025.All patients underwent hepatic elastography using FibroScan® and HbA1c determination. Using non-parametric statistics (Kolmogorov-Smirnov, Kruskal-Wallis, and Mann-Whitney U with Bonferroni correction).

Results: The patients were compared according to the degree of hepatic steatosis and the levels of (HbA1c), and a statistically significant difference was observed (Kruskal-Wallis, H=9.75, p = 0.008), indicating differences in glycemic control in 2 groups. The average HbA1c ranges were: grade I hepatic steatosis 39.42%; grade II, 64.00%; and grade III 51.96%.suggesting a progressive increase in HbA1c as the severity of hepatic steatosis increases. The post hoc analysis using the Mann-Whitney U test, with Bonferroni correction, revealed significant differences between patients without steatosis and those with grade II steatosis (p = <0.005).

Conclusions: Patients with type 2 diabetes who have moderate or severe hepatic steatosis show worse glycemic control compared to patients without steatosis or with mild steatosis.

Conflict of interest: None

Table No. 1 The following table represents the relationship between the degree of steatosis and the levels of glycated hemoglobin, a statistically significant difference is observed (Kruskal-Wallis, H = 9.75, p = 0.008), indicating differences in 2 groups in glycemic control. The average ranges of HbA1c were: grade I hepatic steatosis 39.42%; grade II, 64.00% and grade III 51.96% suggesting a progressive increase in HbA1c as the severity of hepatic steatosis increases. The Mann-Whitney U test, with Bonferroni correction, revealed significant differences between patients without steatosis and those with grade II steatosis (p = <0.005

Grade hepatic steatosis	N	Average HbA1c Range
Without Hepatic Steatosis	40	36.98
Grade I hepatic steatosis	12	39.42
Grade II hepatic steatosis	14	64.96
Grade III hepatic steatosis	24	51.96
N		
P VALUE <0.005	U de Man Whitney P=0.005	CHI SQUARED <0.005
H. de Kruskal Wallis 9.75 P=0.008	95% Confidence Interval	

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#8

BIOACTIVE COFFEE COMPOUNDS SYNERGISTICALLY ENHANCE THE ANTITUMOR EFFECTS OF CHEMO AND IMMUNOTHERAPY FOR HEPATOCELLULAR CARCINOMA IN VITRO

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Introduction and Objectives: Hepatocellular Carcinoma (HCC) yields high global incidence and mortality rates and an unfavorable prognosis. Although current therapies for advanced HCC are promising, their outcomes remain limited. In this context, there is increasing interest in innovative strategies, such as combining bioactive compounds (BCs) with chemo- and immunotherapies. BCs in coffee have stood out due to their chemopreventive effects reported in epidemiological and experimental studies. However, their antitumor potential, particularly in combination with conventional therapies, remains incompletely understood. In this study, we investigated whether coffee-derived compounds could enhance the antitumor effects of sorafenib (SOR) and atezolizumab plus bevacizumab (ATZ+BVZ) in vitro.

Materials and Methods: LX2 hepatic stellate cells and HepG2/C3A (HCC) cells were cultured in 3D (spheroids) and 2D (transwell)

systems, and treated with caffeine (CAF), trigonelline (TRI), chlorogenic acid (CGA), caffeic acid (CA), kahweol (KWL), SOR, ATZ, and BVZ for 24 and 48 h for half maximum effective concentration (EC50) determination (MTT/LDH assays). Next, the coffee compounds were combined with SOR or ATZ+BVZ at sub-effective and physiologically plausible EC50 fractions (1/5, 1/6, or 1/10) and evaluated by MTT (3D), scratch (migration), and colony formation assays (2D), with combination index calculation.

Results: CGA, CA, and TRI showed antagonistic effects to the therapies. In contrast, CAF or KWL synergistically enhanced the anti-tumor effects of SOR and ATZ plus BVZ in reducing spheroid viability. The combination of CAF plus KWL further intensified the anti-tumor effects of both treatments, also inhibiting colony formation and cell motility.

Conclusions: These findings suggest that coffee-derived compounds may strengthen the therapeutic efficacy against HCC. Further experiments include in vitro metabolomics and transcriptomics, and in vivo xenograft mouse model.

Conflict of interest: None

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#10

INFLUENCE OF CARDIOMETABOLIC RISK FACTORS AND ALCOHOL CONSUMPTION ON LIVER STIFFNESS IN PATIENTS WITH MASLD: A MULTICENTER STUDY IN COLOMBIA

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Introduction and Objectives: Metabolic dysfunction-associated steatotic liver disease (MASLD) includes patients with hepatic steatosis and at least one cardiometabolic risk factor (CMRF). However, the influence of individual CMRFs and their interactions on disease progression remains unclear.

To assess the association between CMRFs, their interactions (including with alcohol consumption), and liver stiffness in MASLD

Patients and Methods: This multicenter study included patients with MASLD from four Colombian cities. Transient elastography was used to assess liver stiffness. Other causes of chronic liver disease were excluded. Patients with significant alcohol intake (≥30 g/day for men, ≥20 g/day for women) were excluded. CMRFs were defined using ATP III criteria. Alcohol consumption was estimated as grams per week based on standard drink units. A multivariate linear regression model evaluated associations with liver stiffness, including interaction terms between CMRFs and with alcohol. Statistical significance was set at $p \leq 0.05$

Results: A total of 354 patients were included (mean age: 54 years; 39.3% male). CMRF distribution: 1 (30.2%), 2 (31.9%), 3 (29.4%), and 4 (8.5%). The most prevalent CMRFs were dyslipidemia (68.6%) and hypertension (54.2%). In multivariate analysis, BMI ($\beta = 0.14$; 95% CI: 0.03–0.27; $p = 0.012$) and impaired glucose metabolism ($\beta = 0.11$; 95% CI: 0.08–2.6; $p = 0.03$) were independently associated with liver stiffness. Among interaction terms, only the diabetes–waist circumference interaction remained significant ($\beta = 0.19$; 95% CI: 1.15–4.4; $p < 0.01$). Alcohol consumption showed no association.

Conclusions: Diabetes and its interaction with waist circumference are key drivers of liver stiffness in MASLD, independent of alcohol intake.

Conflict of interest: None

Variable	b	IC 95%	p
Male sex	-0,031	(-1,6) - 0,93	0,57
Age (years)	0,118	0,004 - 0,98	0,03
BMI (Kgs/m2)	0,13	0,026 - 0,26	0,018
Weekly alcohol consumption (gr)	-0,033	(-0,023) - 0,012	0,55
CAP (dB/m)	-0,07	(-0,019) - 0,004	0,22
Obesity or overweigth	0,037	(-1,42) - 2,8	0,51
Number of cardiometabolic risk factors	0,128	0,12 - 1,4	0,021
Abdominal circumference	0,08	(-0,25) - 2,2	0,11
Dyslipidemia	-0,09	(-2,5) - 0,14	0,07
Hypertension arterial	0,08	(-0,24) - 2,2	0,11
Disorder of glucose metabolism	0,16	0,62 - 3,11	0,003

Table 1. Factors associated with elastographic values. Univariate linear regression.

Interaction term	b	IC 95%	p
Disorder of glucose metabolism * Dyslipidemia	0,014	(-1,13) - 1,4	0,8
Disorder of glucose metabolism*Abdominal circumference	0,22	1,6 - 4,7	< 0,001
Disorder of glucose metabolism * Hypertension	0,16	0,61 - 3,2	0,004
Dyslipidemia * Abdominal circumference	0,018	(-1,2) - 1,7	0,74
Dyslipidemia * Hypertension	-0,038	(-1,7) - 0,84	0,49
Abdominal circumference * Hypertension	0,14	0,44 - 3,5	0,012
Disorder of glucose metabolism * Abdominal circumference * Hypertension	0,22	2,1 - 5,8	< 0,001
Disorder of glucose metabolism * Abdominal circumference * Dyslipidemia	0,06	(-0,8) - 2,8	0,26
Disorder of glucose metabolism * Hypertension* Dyslipidemia	0,017	(-1,2) - 1,6	0,76
Dyslipidemia * Abdominal circumference* Hypertension	0,02	(-1,4) - 2,2	0,66

Table 2. Relationship between the interaction terms of cardiovascular risk factors and liver stiffness. Univariate linear regression.

Variable	b	p
Disorder of glucose metabolism*Abdominal circunference	0,19	< 0,01
BMI (Kgs/m2)	0,14	0,012
Disorder of glucose metabolism	0,11	0,03

Table 3. Factors associated with liver stiffness. Multivariate linear regression analysis

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#11

HEALTH LITERACY AS A DETERMINANT OF FRAILTY IN PATIENTS WITH LIVER CIRRHOSIS

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Introduction and Objectives: Health literacy (HL) is a key social determinant of health, especially in chronic conditions like cirrhosis, where disease management depends heavily on patient comprehension and engagement. HL refers to the ability to access, understand, and use health information to make informed decisions. Frailty, a state of decreased physiological reserve and increased vulnerability, is a strong predictor of adverse outcomes in cirrhosis. Although the Liver Frailty Index (LFI) is commonly used to assess physical frailty, the role of HL in this context remains poorly explored. This study aimed to determine the association between HL and frailty in patients with cirrhosis.

Patients and Methods: We conducted a cross-sectional study among adults with confirmed cirrhosis attending outpatient hepatology clinics in Cartagena, Colombia, between September and December 2024. HL was measured using the Short Assessment of Health Literacy for Spanish Adults (SAHL-S), and frailty was assessed with the LFI, which includes grip strength, chair stands, and balance tests. Trained clinicians performed all tests using calibrated equipment. Demographic and clinical variables were obtained from records and structured interviews. Patients with encephalopathy or severe mobility limitations were excluded. Frailty was defined as LFI ≥ 4.5.

Results: Among 89 participants (57.3% women, mean age 64.8), 85.4% were Child-Pugh A. History of decompensation and variceal