P-25 IMPEDANCE CARDIOGRAPHY AND SPLEEN STIFFNESS MEASUREMENT TO ASSESS THERAPEUTIC RESPONSE IN CIRRHOTIC PATIENTS TREATED WITH NON-CARDIOSELECTIVE BETA-BLOCKERS

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Conflict of interest: No

Introduction and Objectives: Non-cardioselective beta-blockers (NCBBs) are used as prophylaxis for variceal bleeding but have limitations in therapeutic follow-up. Impedance cardiography (IC) evaluates systemic hemodynamics, and splenic elastography (SE) quantifies spleen stiffness. A decrease in spleen stiffness measurement (SSM) is associated with a reduction in the hepatic venous pressure gradient, which is the ultimate goal of the treatment. This study aimed to describe systemic hemodynamic changes and SSM in cirrhotic patients under prophylaxis with NCBBs using non-invasive methods.

Patients / Materials and Methods: This observational and prospective study involved cirrhotic patients indicated for NCBB treatment at the Military Hospital from July 2022 to June 2024. Hemodynamic assessment was performed using IC with Z_logic® (Exxer®, Argentina) and SSM with FibroScan® (Echosens®, France). Patients were evaluated before treatment and at the target dose.

Results and Discussion: Twenty-six patients participated in the study, of which 14 were men. The mean age was 57.8 ± 18.4 years. Alcoholic cirrhosis was the main etiology (n=10). 69% were classified as Child-Pugh A. The MELD-Na score was 11.8 ± 5.3. Before treatment, patients did not present parameters of hyperdynamic circulation, and the SSM was 58.9 ± 15.1 kPa. In 19 patients, there was a decrease in SSM, with an average value dropping to 47.6 ± 17.3 kPa (p=0.018). Systemic vascular resistance (SVR) was higher in patients with a decrease in SSM (1538.8 ± 1068.9 dyn.s.cm^{-5} vs. 985.9 ± 164.3 dyn.s.cm^{-5}, p=0.042) (Table). A negative correlation was observed between the change in SVR and the decrease in SSM (p=0.029, Pearson's r = -0.438).

Conclusions: Systemic hemodynamic changes and SSM in NCBB-treated patients were described. SSM showed the most significant changes. A correlation was found between the increase in SVR and the decrease in SSM once the target doses were achieved. According to these findings, SVR values could be a marker of an adequate response to NCBBs.

	Decrease in SSM (n = 19)	No decrease in SSM (n = 7)	P value
Heart Rate (beats/min)*	61 (54 – 68)	67 (56 – 87)	0.072
Cardiac Index (L/min/m²)*	2.8 (1.7 – 4.1)	3.6 (2.7 – 4.4)	0.646
Cardiac Output (L/min)	5.8 +/- 3.5	6.6 +/- 1.9	0.595
Systolic Blood Pressure (mmHg)	110.4 +/- 17.4	113.3 +/- 17.2	0.718
Diastolic Blood Pressure (mmHg)	65.7 +/- 12.2	66.7 +/- 10.8	0.869
Systolic Discharge (mL/min)	91.9 +/- 52.2	99.6 +/- 48.1	0.753
Ventricular-Arterial Coupling Capan: EA/EES	1.0 +/- 0.3	1.0 +/- 0.3	0.956
Ventricular-Arterial Coupling Weissler: EA/EES	1.0 +/- 0.4	1.0 +/- 0.3	0.998
Arterial Compliance (ml/mmHg)*	1.6 (1.2 – 3.0)	2.0 (1.3 – 2.7)	0.886
Thoracic Fluid Content	44.6 +/- 7.1	45.3 +/- 10.4	0.841
Thoracic Fluid Content Normalized by Regression	103.7 +/- 17.0	105.2 +/- 19.6	0.859
Effective Aortic Elastance	1.5 +/- 0.9	1.2 +/- 0.5	0.483
Left Ventricular End-Systolic Elastance Capan*	1.1 (1.0 – 1.5)	1.1 (1.0 – 1.3)	0.370
Left Ventricular End-Systolic Elastance Weissler*	1.2 (1.0 – 1.6)	1.1 (1.1 – 1.2)	0.354
Ejection Fraction Capan (%)	56.6 +/- 5.3	55.0 +/- 6.9	0.571
Ejection Fraction Weissler (%)	58.9 +/- 10.3	55.9 +/- 13.5	0.571
IC/SBP (ml/mmHg.m²)*	24.4 (15.4 – 36.8)	30.5 (26.7 – 36.2)	0.897
Arterial Compliance Index (ml/mmHg.m²)*	1.0 (0.6 – 1.5)	1.2 (0.7 – 1.4)	0.851
Systolic Discharge Index (ml/beat/m²)*	47.8 (26.9 – 55.7)	50.9 (30.5 – 79.5)	0.813
Systemic Vascular Resistance Index (dyn.sec.cm^{-5}.m²)*	2253.5 (1436.9 – 3590.7)	1823.9 (1571.6 – 2014.2)	0.040¶
Mean Arterial Pressure (mmHg)	80.6 +/- 13.7	82.2 +/- 12.8	0.801
Pulse Pressure (mmHg)*	45 (40 – 50)	45 (40 – 53)	0.584
SVR: Suga Index: End-Systolic Pressure/Volume Ratio (mmHg/mL)*	1.4 (1.2 – 3.6)	1.6 (1.0 – 2.0)	0.329
Systemic Vascular Resistance (dyn.sec.cm^{-5})	1538.8 +/- 1068.9	985.9 +/- 164.3	0.042¶

Hemodynamic status in patients who showed a decrease or no decrease in spleen stiffness value under treatment with NCBBs. * Median and interquartile range are provided for these data. Remaining values are expressed as mean ± standard deviation. (¶: $p < 0.05$).

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P-26 EPIGENETIC MARKS IN PATIENTS WITH SUSTAINED VIRAL RESPONSE TO HCV AND RESIDUAL LIVER FIBROSIS ARE RESTORED BY PROLONGED-RELEASE PIRFENIDONE

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Conflict of interest: No

Introduction and Objectives: Patients with residual liver fibrosis following the eradication of hepatitis C virus (HCV) represent a significant clinical challenge due to the continuous risk of disease progression and the development of hepatocellular carcinoma. This study aimed to evaluate the efficacy of a 12-month treatment with

prolonged-release pirfenidone (PR-PFD) plus standard of care for the regression of liver fibrosis and its effect on key epigenetic marks.

Patients / Materials and Methods: HCV patients who responded to direct-acting antivirals (DAAs) and had residual fibrosis received PR-PFD (1200 mg/day) for 12 months. Liver biopsies and serum samples were analyzed at the beginning and end of the treatment. Additionally, six non-fibrotic controls were included to compare the epigenetic marks.

Results and Discussion: 38 patients completed the 12-month treatment, and 28.94% showed a reduction of at least one fibrosis stage according to liver biopsies, while 57.57% experienced an improvement in fibrosis according to transient elastography. Levels of bilirubin, alkaline phosphatase, AST, INR, and APRI significantly decreased. Profibrogenic miRNAs (miR-34a, miR-21, miR-16, miR-181b, miR-200a, and miR-200b) showed a significant increase in advanced fibrosis compared to non-fibrotic controls. Notably, PR-PFD treatment restored the expression of miR-34a, miR-16, miR-192, miR-200a, and miR-122. In cell-free DNA (liquid biopsy), PDGFα showed hypermethylation in patients with mild fibrosis, while in liver tissue hypomethylation was present in non-fibrotic controls. In the circulating DNA of non-fibrotic controls, PPAR-δ was hypermethylated compared to mild and advanced fibrosis cohorts. Treatment with PR-PFD induced hypermethylation in three islets of TGFβ1, suggesting a decrease in the transcription of this profibrogenic cytokine.

Conclusions: These findings indicate, for the first time, that PR-PFD treatment could exert therapeutic effects in Hispanic patients with residual fibrosis by modulating miRNA expression and methylation of specific CpG sites.

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P-27 OBESITY AND LIVER STEATOSIS IN ADOLESCENTS AND YOUNG ADULTS - RELATED FACTORS AND THE IMPACT OF LIFESTYLE

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Conflict of interest: No

Introduction and Objectives: Obesity and lifestyle are factors associated with steatotic liver disease related to metabolic dysfunction (MASLD). *Objective:* To describe the frequency of obesity and MASLD in adolescents/young adults and related factors.

Patients / Materials and Methods: Cross-sectional study. Demographic, anthropometric and lifestyle data were assessed (self-completed questionnaire). All underwent liver elastography with CAP (Fibroscan® Touch 502, Echosens, Fr) to estimate the frequency of steatosis (CAP ≥ 248 DB/m) and significant fibrosis (E > 7.9 kPa). The related factors for obesity and steatosis were assessed by logistic regression analysis.

Results and Discussion: One hundred and twenty-three healthy individuals participated in the study (68.3% women, 19.5 ± 1.5 years). Pre-hypertension, overweight and obesity were identified in 13.3%, 16.3% and 10.6% respectively (62.8% were not satisfied with their weight). Alcohol consumption was 26.7% (2-4 drinks/week), higher in men. 6% had glycated hemoglobin ≥ 5.7% (Pre-diabetes) and 28% had hypercholesterolemia. Steatosis was identified in 21.1%, and no individual had significant fibrosis [median E = 4.4 (3.6 − 5.3) kPa]. The median daily time spent on the computer was 5 (3-8 hours), and 56% used the computer for more than 4 hours/day. The factors that were independently associated with obesity in these adolescents were pre-hypertension (OR 8.7: 95% CI 2.1-36.0, p=0.003) and time spent using a computer (OR 6.1: 1.09-34.9; p=0.039). Obesity (OR 71.4: 95%CI 7.0-725.5, p<0.001), pre-hypertension (OR 7.4: 95%CI 1.3-41.9, p=0.024) and male sex (OR 13.5: 95%CI 1.3-137.3, p=0.027) but not alcohol use was associated with the presence of hepatic steatosis.

Conclusions: The prevalence of obesity, pre-hypertension and hepatic steatosis in adolescents/young adults is high. Lifestyle changes, including better control of screen time, must be implemented urgently in this population to combat obesity and steatosis.

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P-28 CHARACTERIZATION OF CHRONIC LIVER DISEASE, CIRRHOSIS, AND HEPATOCELLULAR CARCINOMA PROGRESSION IN A COLOMBIAN HEALTH MAINTENANCE ORGANIZATION: A TEN-YEAR RETROSPECTIVE STUDY

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Conflict of interest: Yes, Roche employee as co-authors

Introduction and Objectives: Chronic liver disease (CLD), cirrhosis, and hepatocellular carcinoma (HCC) pose a significant global health burden. In Colombia, these conditions challenge the healthcare system, necessitating a thorough understanding of their progression and impact. This study aimed to evaluate the prevalence, progression, median survival time and transition rates of patients with CLD, cirrhosis, and HCC in a Colombian Health Maintenance Organization.

Patients / Materials and Methods: This retrospective cohort study was conducted from 2012 to 2022, identifying patients with CLD, cirrhosis, and HCC using ICD-10 codes from a claims database and electronic health records. The focus was on the cumulative 5- and 10-year survival rates of patients with cirrhosis and HCC.

Results and Discussion: The study included 33,315 CLD patients (median age: 49.1 years; 57.14% female), with the primary causes being fatty liver disease (82.98%) and chronic viral hepatitis (5.18%). Among these, 1,021 developed cirrhosis (median age: 61.45 years; 52.89% female), and 67 progressed to HCC (median age: 67.18 years; 50.75% male). The incidence rate was 165.03 per 10,000 patients. The probabilities of progression from CLD to cirrhosis at 5 and 10 years were 4% and 7%, respectively, whereas the probabilities of developing HCC from cirrhosis were 6% at 5 years and 20% at 10 years. The 5-year and 10-year cumulative survival rates for cirrhosis were 80% and 63%, respectively, whereas those for HCC were 34% and 23%, respectively.

Conclusions: This study provides a comprehensive overview of CLD in Colombia, identifying fatty liver disease as its primary etiology. It reveals the significant risks of disease progression and reduced