Results: Eighty-nine patients with hepatic cirrhosis participated, 54 women (60.7%) with 53 ± 7.9 years of age and 8.3 ± 3.4 years of schooling. 57 patients (64.0%) and 64 FCP-positive (71.9%) were PHES-positive. MHE (PHES and CFF positive) was detected in 53 patients (59.6%). 29 MHE patients and 10 patients with cirrhosis agreed to do the perceptual tests. P100 latency of the visual potential was quantified lower in patients with MHD 113 ± 9 milliseconds than in cirrhotic 94 ± 14 milliseconds.

Conclusions: Patients with MHE showed slowness in early perceptual processes that preceded cognitive processes.

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

Sarcopenia as a predictor of risk of minimal hepatic encephalopathy in patients with liver cirrhosis

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Introduction and Objective: Sarcopenia, defined as loss of muscle mass and strength, and minimal hepatic encephalopathy (MHE), alter the quality of life and prognosis of patients with cirrhosis. Ammonia plays a key role in the pathogenesis of MHE and has been associated with decreased muscle mass and strength. However, the relationship between sarcopenia and MHE is not well defined. The objective of this study was to determine their relationship and identify predictors of MHE.

Materials and Methods: Prospective study, including 96 patients with compensated cirrhosis diagnosed by transitional elastography. The presence of MHE and sarcopenia was determined by a critical flicker frequency test and standard from the European Working Group EWGSOP2. Muscle mass and strength were determined by electrical bioimpedance and a handgrip dynamometer. Functional capacity was evaluated by a Short Physical Performance Battery (SPPB), performing linear logistic regression analysis to identify predictors of MHE. The trial was approved by the research ethics committee, and informed consent was obtained.

Results: Of the ninety-six patients with cirrhosis, 61 (64%) and 35 (36.5%) were diagnosed with MHE and sarcopenia, respectively. In the multivariate analysis, the SPPB rating (R 0.521, 95% CI 0.85-2.54, p=<0.001) and grip strength (R 0.314, 95% CI 0.024-0-50, p=0.032) showed the highest predictive value for MHE. (Table 1 and Figure 1).

Conclusions: Decreased handgrip strength and SPPB score were significant predictors of MHE. Early nutritional intervention and physical rehabilitation could reduce the risk of developing EHM in patients with cirrhosis.

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	Men (n =47)	Women (n =49)	p score
Age years (x̄, DE)	49.6 ±10.3	54.6 ±12.3	0.032 ¥ *
Years of education (x̄, DE)	8.28 ±3.2	8 ±4.1	0.748 ¥
Elastography (kPa) (x̄, DE)	39.0 ±23.1	21 ±13.9	<0.001 ¥ ***
Child-Pugh-Turcotte pts (x̄, DE)	7.43 ±2.0	6.5 ±1.9	0.316 ¥
MELD-Na pts (x̄, DE)	16.35 ±6.1	13.9 ±4.7	0.048 ¥ *
ETIOLOGY (n,%)			
Alcoholic hepatopathy	29 (61.7)	8 (16.3)	<0.001 €
Hepatitis C virus	10 (21.3)	17 (34.7)	0.144 €
MAFLD/NASH	5 (10.6)	11 (22.4)	0.121 €
COMORBILIDADES (n,%)			
DM type 2	15 (31.9)	19 (38.8)	0.482 €
Hypertensión	4 (14.8)	7 (23.3)	0.416 €
COMPOSICIÓN CORPORAL (x̄, DE)			
IMC kg/m²	27.1 ±5.2	24.8 ±4.0	0.013 ¥ *
Height cm	166 ±7.2	153.3 ±7.5	<0.001 ¥ ***
Weight kg	75.1 ±17.8	58 ±10.0	<0.001 ¥ ***
SACROPENIA AND FUNCTIONAL CAPACITY EVALUATION (x̄, DE)			
SPPB score (pts)	10.38 ±2.0	8.8 ±3.0	0.006 ¥ **
Walk test 4 m (seg)	5.3 ±7.0	5.3 ±5.2	0.943 ¥
Chair stand (seg)	12.6 ±4.9	14.5 ±4.3	0.040 ¥ *
muscle mass (kg)	26.9 ±11.3	16.7 ±6.7	<0.001 ¥ ***
Handgrip strenght (kg)	28.8 ±7.0	17.1 ±4.8	<0.001 ¥ ***
Flicker (Hz) (x̄, DE)	36.1 ±5.9	38.1 ±6.1	0.113 ¥

x̄ Mean ±DE, X̃ median (IQR), ¥ T Student independent samples, € Chi square
* Statistically significant difference in grade p=0.05
** Statistically significant difference in grade p=0.01
*** Statistically significant difference in grade p=0.001

Table 1. Demographic distribution by frequencies, difference in means and proportions of subjects with liver cirrhosis by gender (n=96).

R² Coefficient of determination. SPPB Short Physical Performance Battery. R²=1 perfect linear fit; R²=0 non-representativeness of the linear model
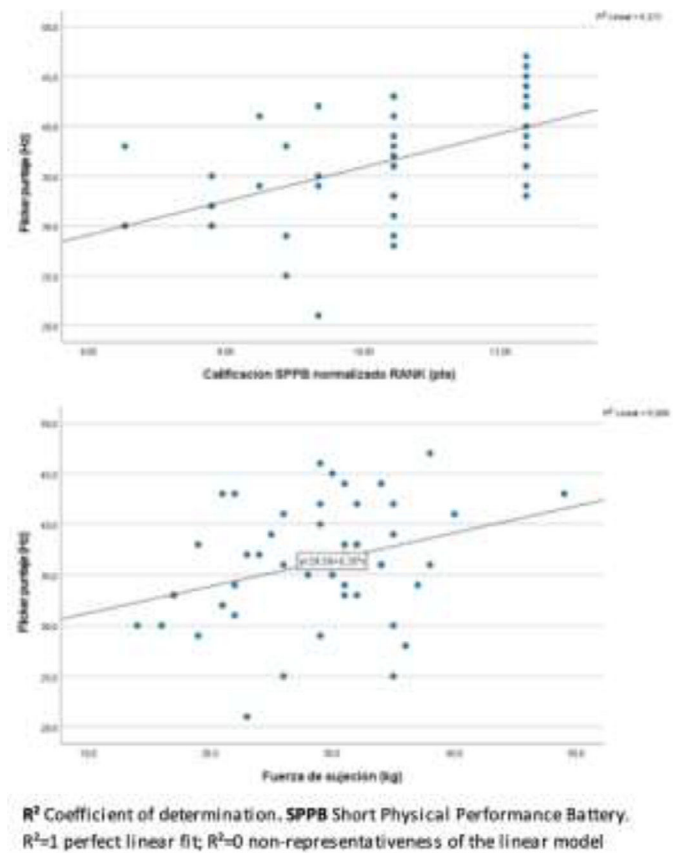
Figure 1. Simple dispersion diagram. Logistic regression analysis. SPPB and handgrip score associated with Flicker score.

Prevalence of liver fibrosis determined by non-invasive methods in patients with metabolic disorders at the *Centro Medico Nacional 20 de noviembre*

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