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.

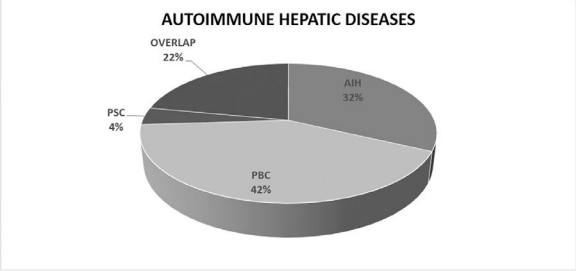

Figure 1. Autoimmune Hepatic Diseases (AHD). AIH: Autoimmune Hepatitis, PBC: Primary Biliary Cholangitis, PSC: Primary Sclerosing Cholangitis.

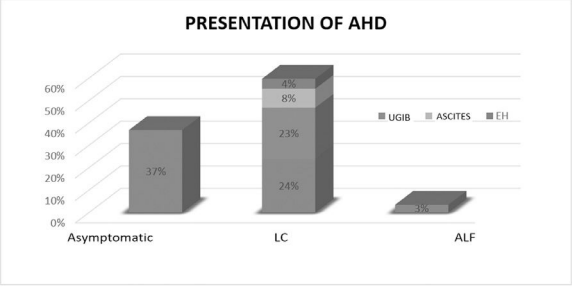

Figure 2: Presentation of Autoimmune Hepatic Diseases. AHD: Autoimmune Hepatic Disease, LC: Liver Cirrhosis, ALF: Acute Liver Failure, UGIB: Upper Gastrointestinal Bleeding, HE: Hepatic Encephalopathy.

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Behavioral Assessment of a Novel Hepatic Encephalopathy Model using CCl_4 and Manganese in Mice

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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.

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HDL-C and BMI levels as parameters for MASLD detection

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