

(Continued)

Nutritional Assessment Variables by absence/presence of hepatic steatosis				
Waist circumference				
BMI	22.78 (±3.13)	25.60 (±4.23)	<0.05	24.61 (±4.10)
Fat	16.09 (±7.99)	22.18 (±7.89)	< 0.05	20.05 (±8.41)
% Fat	25.99 (±11.00)	33.10 (±8.85)	<0.05	30.61 (±10.20)
Bone mass Kg	2.42 (±0.44)	2.37 (±0.54)	0.302	2.39 (±0.51)
Muscle mass Kg	19.64 (±5.18)	19.72 (±6.60)	0.6419	19.69 (±6.12)

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P-68 LIVGUARD, A DEEP NEURAL NETWORK FOR CIRRHOSIS DETECTION IN LIVER ULTRASOUND (USD) IMAGES

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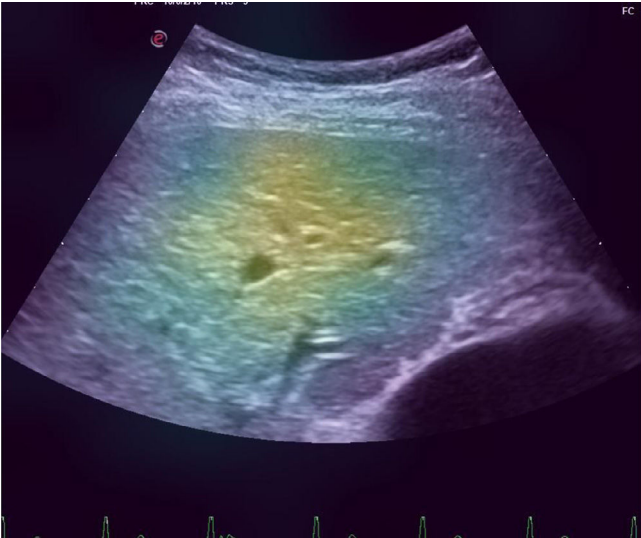
Conflict of interest: No

Introduction and Objectives: Differents ultrasound (USD) signs have been described for the diagnosis of cirrhosis. Among them, the irregularity of the liver shape and the liver echostructure are the most specific and sensitive findings. The echostructure of the liver parenchyma can be classified by the operator as smooth or coarse, the latter being suggestive of chronic liver disease. This classification is not free of subjectivity. The objective of our study was to diagnose cirrhosis by analyzing the liver echostructure through artificial intelligence (AI). We here propose LivGuard, a deep learning binary classifier for cirrhosis detection from a single ultrasound image from general and point-of-care pocket-handheld USD (POCUS).

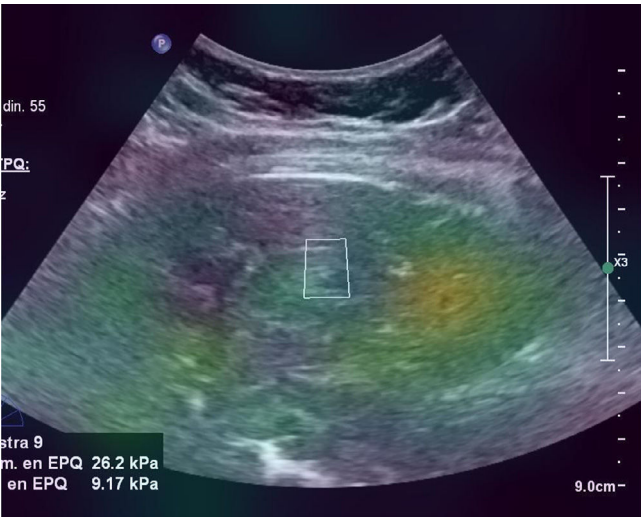
Patients / Materials and Methods: The dataset was composed of 1625 two-dimensional, ultrasound liver images annotated as cirrhotic (N=677) or not (N=948) captured from 165 individuals at Sanatorio Sagrado Corazon and Sanatorio de los Arcos, Buenos Aires, Argentina. We stochastically split the master set into training (N=1297; 79.8%), validation (N=159; 9.7%), and test (N=169; 10.2%) sets that were completely disjointed. The output of the efficientNetv2 convolutional neural network (CNN) was a score between 0 and 1 to exhibit the probability of cirrhosis.

Results and Discussion: The Artificial Intelligence (AI) System achieved accuracy in the test set of 88.7%. Sensitivity, specificity, positive (P) and negative (N) predictive values (PV) were 88.8%, 88.5%, 85.5% and 92.2%, respectively. The system was additionally evaluated in a test set of images (N=180; positive for cirrhosis=64) obtained through Butterfly POCUS. The AI system achieved an overall detection rate of 88.8%. Sensitivity, specificity, positive (P) and negative (N) predictive values (PV) were 100%, 82.7%, 76.1% and 100%, respectively.

Conclusions: LivGuard is proven to be a high performer as cirrhosis classifier in ultrasound images. Further work is required to validate this algorithmic framework in prospective cohorts of patients in additional clinical trials and/or real-world datasets.



Heat MAP Normal



Heat MAP cirrhosis

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P-69 EFFECTS OF POPULATIONAL-RELEVANT DOSES OF CARBOXYMETHYLCELLULOSE AND POLYSORBATE 80 EMULSIFIERS ON MASLD-ASSOCIATED HEPATOCARCINOGENESIS

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Conflict of interest: No

Introduction and Objectives: Hepatocellular carcinoma is the 3rd deadliest type of cancer worldwide and metabolic dysfunction-associated steatotic liver disease is the fast-growing cause of liver disease. Ultra-processed foods are consumed in Westernized-style diets (WD) and emulsifiers, especially carboxymethylcellulose (CMC) and polysorbate 80 (P80), feature among the most consumed food additives globally. Nevertheless, the effects of these additives on hepatocarcinogenesis still elusive. Thus, we assessed the effects of populational-based doses of CMC/P80 in a murine model of MASLD-associated hepatocarcinogenesis.

Patients / Materials and Methods: Male C57BL/6J mice were allocated into 8 groups and received intraperitoneal doses of diethylnitrosamine (25 mg/Kg of b.w., 1 × /week, G1-G8) for 4 weeks. By the 6th week, mice were fed a WD (G2-G8) or a basal diet (G1) for 24 weeks. At the 10th week, mice received intragastric doses of CMC (370.0/740.0 mg/Kg of b.w., G3/G4), P80 (100.0/200.0 mg/Kg of b.w., G5/G6), or their combination (370.0+100.0/740.0+200.0 mg/Kg of b.w., G7/G8) or vehicle (G1/G2) for 20 weeks (5 × /week). A glucose tolerance test was performed and hepatic tumoral/non-tumoral and serum samples were collected. Data were analyzed by one/two-way ANOVA or Kruskal-Wallis and Tukey's/Dunn's *post hoc* tests.

Results and Discussion: Pronounced final body weight/adiposity index ($p < 0.0001$) were observed in G5-G7. Tumor incidence/multiplicity were not altered by emulsifiers, but G6/G8 showed a higher proportion of larger tumors ($> 50\text{mm}^3$, $p < 0.0001$). Hepatocellular adenoma occurrence was frequent in all groups. WD-fed mice showed a glucose intolerance profile ($p < 0.0001$). G2/G5-G7 shared a similar macro/microvesicular steatosis ($p < 0.0001$) aspect, whereas hepatocellular hypertrophy was pronounced in G5-G7 ($p < 0.0001$). No differences were observed in lobular inflammation or alanine aminotransferase, total cholesterol, and triglycerides levels.

Conclusions: Our findings revealed that populational-based doses of emulsifiers promotes MASLD-associated hepatocarcinogenesis by pronouncing hepatic steatosis and the adiposity index.

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P-70 ALCOHOL CONSUMPTION RECURRENCE IN LIVER TRANSPLANT PATIENTS WITH ALCOHOLIC CIRRHOSIS: HEALTH AND SOCIAL IMPACT

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Conflict of interest: No

Introduction and Objectives: Alcoholic cirrhosis is a leading cause of liver transplantation. However, post-transplant alcohol recurrence remains a significant challenge, affecting graft survival and patient outcomes. Identifying predictive factors for relapse is crucial for optimizing the allocation of scarce donor organs. *Objetives:* To evaluate the recurrence rate of alcohol consumption in patients who have undergone liver transplantation due to alcoholic cirrhosis and identify clinical and psychosocial variables predicting relapse risk.

Patients / Materials and Methods: A retrospective observational study was conducted on 167 consecutive patients who underwent liver transplantation for alcoholic cirrhosis between January 2013 and July 2023. Pre-transplant data, including demographics, alcohol consumption history, and psychosocial variables, were collected from medical records. Post-transplant alcohol consumption was assessed using the AUDIT questionnaire. Statistical analyses included chi-square tests, Fisher's exact tests, t-tests, and Mann-Whitney U tests.

Results and Discussion: Among the 167 patients, a 5% (9/167) recurrence rate of alcohol consumption was observed. The recurrence group showed significantly lower adherence to post-transplant treatment ($p = 0.021$) and higher rates of graft dysfunction ($p < 0.001$) compared to the non-recurrence group. No significant differences were found in demographic variables, pre-transplant alcohol consumption, or psychological awareness of disease. The education level was lower in the recurrence group ($p = 0.05$). The average AUDIT score in the recurrence group was 8, indicating intermediate risk. Recurrence was associated with a longer post-transplant follow-up period ($p < 0.001$) and higher alcohol intake (median 40g/day).

Conclusions: Predicting post-transplant alcohol relapse based solely on pre-transplant indicators is complex. Lower adherence to post-transplant treatment and higher graft dysfunction rates were significant in the recurrence group. The AUDIT questionnaire was useful in assessing post-transplant alcohol consumption risk. Comprehensive pre- and post-transplant evaluations incorporating medical and psychosocial factors are needed to enhance patient long term outcomes and optimize the use of limited transplant resources.

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P-71 BARIATRIC SURGERY AND THE IMPACT ON THE LIVER. COHORT STUDY OF ONE CENTER IN ARGENTINA

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Conflict of interest: No

Introduction and Objectives: Losing weight and lifestyle modifications are still pillars of treatment for metabolic associated steatotic liver disease (MASLD) and steatohepatitis (MASH), despite the emerging therapies. Bariatric surgery (BS) has been reported to improve degeneration, inflammation, and fibrosis. *Aim:* To describe liver histological patterns and biochemical parameters in patients undergoing BS.

Patients / Materials and Methods: Observational retrospective study including 93 patients who underwent BS in one center in Argentina, between 2017-2023. A liver biopsy (LB) was performed during the surgery to all patients. Anthropometric and biochemical parameters, including fibrosis-4 index (FIB-4), were assessed intraoperatively and 6 months after surgery.

Results and Discussion: The mean age was 44.1 (± 9.4), women 92.5%. Mean BMI before surgery, 42.7 (± 7.1) kg/m². We studied 25 patients who presented type II diabetes mellitus and 72 who were insulin resistance (77.4%). Other comorbidities like high blood pressure and hypothyroidism were found in 43% and 25.8% of this sample. LB showed MASLD in 63.4%, and MASH in 25.8% of cases. Liver fibrosis was present in 65% of patients, being significant ($\geq F2$) in only 14 patients (15.3%) (F2: 10, F3: 3, F4: 1;). Strikingly, FIB-4 < 1.3 was observed in 10/14 (71%) patients with fibrosis stage $\geq F2$. Patients with significant fibrosis had lower platelets and higher glycemia, AST, triglycerides, HOMA and FIB-4 compared with those who did not present these disorders ($p < 0.05$). Six months after surgery, a reduction of BMI was observed compared to the preoperative BMI (42.7 vs 39.4 kg/m²; $p = 0.034$). After six month of surgery, also a significant