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Introduction and Objectives: Hepatocellular carcinoma (HCC) has a strong genetic component and single nucleotide polymorphisms (SNPs) have been consistently associated with HCC risk. Genetic variants in *PNPLA3* have been shown to be frequent in South American populations related to non-alcoholic fatty liver disease (NAFLD). In Caucasian populations, the variant has been shown to increase the risk for HCC when included in Genetic Risk Scores (GRS). Whether this risk applies to other Latino or other populations is unclear.

Materials and Methods: We analyzed blood samples of 217 HCC cases, 120 from South American patients (Argentina, Ecuador, Colombia, Chile and Peru) and 97 from Europeans (Netherlands), as well as 326 cirrhotic controls through the ESCALON network. Genotyping for *PNPLA3* was performed using TaqMan-genotyping assay. Associations between HCC and each SNP were evaluated using logistic regression models.

Results: The median age for HCC in South Americans was 68 y/o (IQR 62-72) and in Europeans, 69 y/o (IQR 60-74), with 59% and 69% of males, respectively. The etiology of liver disease was similar in both groups except for NAFLD/NASH, which accounted for 59% of Hispanics with HCC vs. 25% of Europeans. Proportions of the risk allele of *PNPLA3* were more prevalent among Hispanics (90%) than Europeans (57%). *PNPLA3* G/G was present in 22% of Europeans with HCC compared to 57% of Hispanics. The presence of 2 risk alleles for PNPLA3 was not associated with a higher risk of HCC in South Americans, OR 1.19 (CI 0.58-2.46) or Europeans OR 1.1o (CI 0.34-3.58). When PNPLA3 was added in a GRS with *TM6SF2* and *HSD17B13,* calculating different allele combinations did not associate either with HCC in South Americans,

Conclusions: Our results show that the prevalence of risk alleles in *PNPLA3* differs between South Americans and Europeans. An SNP in *PNPLA3* does not seem to confer an increased risk for HCC in South Americans.

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P-13 PREVALENCE, CHARACTERIZATION, AND SURVIVAL OF ACUTE ON CHRONIC LIVER FAILURE IN A LATIN AMERICAN COHORT: A MULTICENTER STUDY

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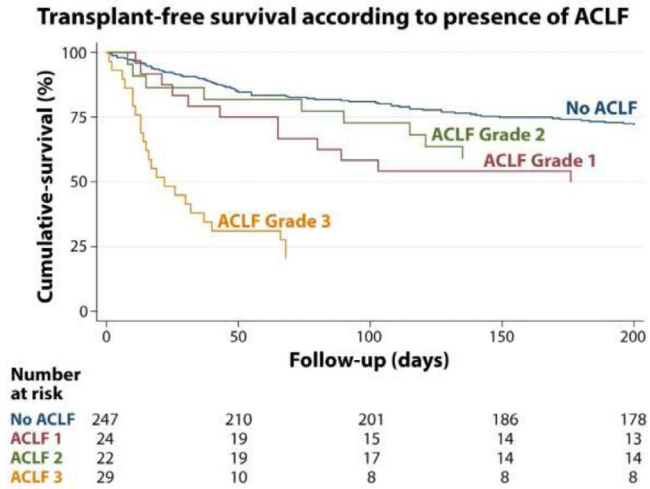
Introduction and Objectives: Acute-on-chronic liver failure (ACLF) is a severe clinical entity with organ failures and high short-term mortality. To Date, few ACLF reports have been published in Latin America. This study aimed to characterize patients with ACLF, identifying triggers, organ failure, and survival at 30, 90, and 180 days compared to patients with decompensated cirrhosis without ACLF.

Materials and Methods: Retrospective study of decompensated cirrhotic patients hospitalized (between 2017-2019) in three centers in Chile. We evaluated transplant-free survival using Kaplan-Meier curves and Cox-regression.

Results: 398 patients were included, a median age of 65.3±11.7-year-old, 50.5% female, 91 (22.9%) presented ACLF (8% ACLF-1, 6.3% ACLF-2, 8.6% ACLF-3); 6.6% underwent liver transplantation. ACLF patients were younger (63.6 vs. 66.0 years; p=0.045), had higher MELD-Na scores (27 [23-32] vs. 17 [13-23]; p<0.001) and higher APACHE II scores (20.5 [16-25] vs. 14 [10-15]; p<0.001) at admission. The most common triggers in both groups were infections (42.4%), gastrointestinal bleeding (23.2%), and alcohol intake (31.3%). Among decompensating factors, acute kidney injury at admission was associated with higher mortality (HR 2.2, 95%CI: 1.4-3.4; p<0.001). The main organ failures were kidney (60.4%), circulatory (49.5%), and brain (48.4%). Organ failures were more frequent in ACLF-3, except renal failure (greater in ACLF-1). Transplant-free survival at 180 days was 73.7% in patients without ACLF and 40% in ACLF (p<0.001). In a Cox regression adjusted by age and sex, transplant-free survival was significantly lower in ACLF-3 compared to patients without ACLF (HR 3.7, 95%CI: 2.3-5.7;p<0.001).

Conclusions: ACLF is an entity of younger patients, with lower global and transplantation-free survival at 180 days and multiple organ failure compared to decompensated cirrhotics without ACLF.



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