Title: MASLD-HCC in Brazilian population: Screening, treatment and survival

Alencar RSSM, Oliveira CP, Chagas AL, da Fonseca LG, Stefano JT, Paranaguá-Vezozzo D, Herman P, D'Albuquerque LAC, Alves VAF, **Carrilho FJ**

Department of Gastroenterology and Nutrition, Hospital das Clínicas, Faculdade de Medicina, Universidade de São Paulo, Brazil

Introduction: Hepatocellular carcinoma (HCC) is the third leading cause of cancer-related deaths. Metabolic Associated Steatotic Liver Disease (MASLD) is emerging as a major cause of HCC, with an increasing incidence compared to alcohol-induced steatohepatitis or viral chronic hepatitis, becoming a worldwide public health problem.

Objective: To evaluate the HCC screening program, clinical features, treatment modalities and overall survival (OS) in a series of Brazilian patients with MASLD-HCC.

Method: This is a historical cohort study conducted at the Instituto do Câncer do Estado de São Paulo (ICESP) do Hospital das Clínicas da Faculdade de Medicina da Universidade de São Paulo (HCFMUSP), approved by the local research ethics committee. Patients with MASLD-HCC from May 2010 to September 2019 were included.

Results: 131 patients were enrolled. The mean age was 65.1±9.7 years, 60.3% were male, and a Body Mass Index of 28.7±5 kg/m^2. Cirrhosis was observed in 90.8% of patients, 57.1% were Child-Pugh A; median MELD was 10 (8.0-15.0) and 41.5% of patients were ALBI score Grade I. Portal hypertension was present in 79.8% and its complications were observed in 51.3% of patients, who presented hepatic decompensation before the diagnosis of HCC. Risk factors for MASLD were observed in 94.7% of the studied population, such as systemic arterial hypertension (76.2%); type 2 diabetes mellitus (67.5%); dyslipidemia and obesity (39.7%); overweight (38.9%); glucose intolerance (7.1%) and hyperuricemia (3.2%). Of the 131 patients, only 29% were enrolled in an HCC screening program prior to their diagnosis. Most patients had one nodule (57.3%) at diagnosis, the mean of the largest diameter was 54.5 mm, 40.5% were within the Milan criteria and by the Tumor Staging System - BCLC were classified into stages: 0: 5.3%; A: 42.7%; B: 25.2%; C: 16% and D: 10.7%. HCC treatment was carried out in 84.7% of patients and the types were decided according to BCLC staging system. Transarterial chemoembolization was performed in 47.7%; radiofrequency ablation in 17.1%; sorafenib in 16.2%, liver transplantation in 16.2% and surgical resection in 9.9%. The mean follow-up was 2.17 (±1.9) years and the cumulative survival at the end of the first year was 72%, in the second year 52% and in the fifth year 32%. No significant association was found between patients within the screening program and overall survival in either univariate or multivariate analysis, however, when broken down into nodule size and staging, patients in screening program were diagnosed with tumors smaller than 50 mm and at earlier stages, showing the effectiveness of the screening program. Independent factors associated with worse overall survival were BCLC C-D ($p<0.001$), largest nodule size >42mm ($p=0.039$),

positive history for upper gastrointestinal bleeding ($p<0.006$) and portal vein tumoral thrombosis ($p<0.001$). HCC treatment was associated with longer survival in univariate analysis ($p<0.001$), but not in Cox multiple regression.

Conclusion: The efficacy of screening in our population did not impact overall survival probably impaired by the small sample size (only 29% had screening). BCLC stages C-D, size of the largest nodule larger than 42 mm, positive history for upper gastrointestinal bleeding and portal vein tumoral thrombosis were identified as independent factors of worse prognosis.

Biography: Flair José Carrilho, M.D., Ph.D., is Senior Full Professor of the Division of Clinical Gastroenterology and Hepatology of Hospital das Clínicas and Department of Gastroenterology of the University of São Paulo School of Medicine, Brazil, having received his training in liver diseases as first Foreigner Research Fellow at the Liver Unit of the Hospital Clìnic of the University of Barcelona in 1975-1976. His main lines of research involve viral hepatitis, MASLD and complications of cirrhosis, including primary liver tumors.