allied academies
World Gastroenterological &
World Congress on
Gastroenterology and Endoscopy
October 30-31, 2017 | Toronto, Canada

Glutathione species and metabolomics prints in subjects with liver disease as biological markers for the detection of hepatocellular carcinoma

Juan Sanabria[1, 2]
[1]Marshall University, USA
[2]Case Western Reserve University, USA

Background: The incidence of liver disease is increasing in USA. Animal models had shown glutathione species in plasma reflects liver glutathione state and it could be a surrogate for the detection of hepa-tocellular carcinoma (HCC).

Methods: The present study aimed to translate methods to the human and to explore the role of glutathione/ metabolic prints in the progression of liver dysfunction and in the detection of HCC. Treated plasma from healthy subjects (n = 20), patients with liver disease (ESLD, n = 99) and patients after transplantation (LTx, n = 7) were analyzed by GC- or LC/MS. Glutathione labeling profile was measured by isotopomer analyzes of 2H2O enriched plasma. Principal Component Analyzes (PCA) were used to determined metabolic prints.

Results: There was a significant difference in glutathione/ metabolic profiles from patients with ESLD vs healthy subjects and patients after LTx. Similar significant differences were noted on patients with ESLD when stratified by the MELD score. PCA analyses showed myristic acid, citric acid, succinic acid, L-methionine, D-threitol, fumaric acid, pipecolic acid, isoleucine, hydroxy-butyrate and glycolic, steraric and hexanoic acids were discriminative metabolites for ESLD-HCC+ vs ESLD-HCC− subject status.

Conclusions: Glutathione species and metabolic prints defined liver disease severity and may serve as surrogate for the detection of HCC in patients with established cirrhosis.

Speaker Biography

Juan Sanabria is a Professor of Surgery at Marshall University where he is the Vice-Chair of the Department and the Scientific Director of the Comprehensive Cancer Center. He is as well Professor of Nutrition and Preventive Medicine at Case WR University and he is part of the Metabolomic Core Facility. He has a broad background in liver pathophysiology, with specific training and expertise in metabolic disturbances and signatures of the liver in health and disease including non-alcoholic fatty liver disease and its inflammatory component non-alcoholic steatohepatitis (NASH), cirrhosis and HCC. At present our groups has developed interventions that prevents and reverse NASH and cirrhosis, main risk factors for HCC. In addition, he has explored the significance of liver disease globally, nationally and subnational by my ongoing collaboration with the global burden of disease group.

e: sanabriaj@marshall.edu

Notes: