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Non-alcoholic fatty liver disease and its development to hepatocellular carcinoma in patients with obesity and metabolic syndrome

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Background: The rates of obesity and the metabolic syndrome are increasing worldwide, therefore clinical studies have been undertaken to examine for links with Nonalcoholic fatty liver disease (NAFLD), nonalcoholic steatohepatitis (NASH) and hepatocellular carcinoma (HCC) NAFLD represents the hepatic manifestation of the metabolic syndrome. It is associated with the presence of insulin resistance and type 2 diabetes mellitus. HCC has been registered as a most frequent type of cancer in type 2 diabetes.

Methods: Age, obesity, insulin resistance, and overall development of metabolic syndrome are the major risk factors associated with development of NAFLD. From longitudinal studies performed in the Western countries, it has been shown that rates of HCC from NASH are similar to those of HCC from infection with the hepatitis C virus. Liver biopsy is an invasive procedure and is not a suitable option as a routine screening tool for this common disease and a new diagnostic procedures and scoring systems that could non-invasively distinguish simple steatosis from NASH are emerging.

Results: Visceral body fat is related to the degree of inflammation and fibrosis in NASH. The pro-inflammatory environment can impact the liver and other tissues and patients with more visceral fat had higher rates of HCC recurrence. Part of patients who are initially diagnosed as clinically non-cirrhotic NAFLD could be at high risk of HCC development, and employing only standard follow-up procedures for cirrhotic patients would not be enough. Although current guidelines recommend regular HCC surveillance for cirrhotic patients, HCC can develop in the absence of cirrhosis in NAFLD.

Discussion: With the increasing prevalence of NAFLD it is becoming clear that it will contribute to increasing incidence of HCC as well. Identifying a high-risk subpopulation in HCC development among non-cirrhotic NAFLD patients is imperative. Obesity almost doubles the risk of HCC. The diagnosis of HCC might be considered in obese and/or diabetic patients with liver nodules, even if they do not have others manifestations of chronic liver disease. Research reported in this press release presentation was supported by the Ostrava University, The Czech Republic, under grant award number SGS03/LF/2018.

Speaker Biography

Toman D has completed his MD in 2012 from the University of Pavol Jozef Šafárik, Faculty of Medicine, Košice, Slovakia. He is in his finalyear of residency program of General Surgery. He has Pre-graduation experience from different European countries (internships in Spain and Italy) and Post-graduation experience with internship in the USA (Ryder Trauma Center, University of Miami, Miami, Florida, USA 6/2014) and has given presentations at International Liver Conferences (7th APPLE conference in Hong Kong 2016, The Liver Week 2017 in Seoul – The travel award winner). Since 2016, he is a student of PhD at the Faculty of Medicine, Ostrava University in Ostrava, The Czech Republic, and he focus on the study of NAFLD and HCC in patients with obesity and/or metabolic syndrome.

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