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Evaluation of circulating zonulin as a potential marker in the pathogenesis of non-alcoholic fatty liver disease

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Background: Nonalcoholic fatty liver disease (NAFLD) is a continuum of liver injuries, ranging from steatosis, to steatohepatitis, cirrhosis up to hepatocellular carcinoma. Liver biopsy with its pros and cons remains the gold standard for definite diagnosis and staging of NAFLD, justifying the urge of validating reliable non-invasive marker. This case control study aimed to define the role of circulating zonulin (a mediator of intestinal permeability) in NAFLD occurrence, correlating it with the biochemical parameters, IL-6 along with histopathological features of liver injury. 56 documented NAFLD subjects by ultrasonography and liver biopsy were included. 20 healthy subjects were enrolled as a control group. For all subjects the following was done: Liver function tests, serum glucose, lipid profile, fasting insulin, C peptide, body mass index (BMI), the homeostasis model assessment of insulin resistance (HOMA-IR) were calculated, IL-6 and circulating zonulin were studied.

Results: AST, ALT and γ -GT, triglycerides, fasting insulin, C peptide, HOMA-IR, IL-6 and serum zonulin were significantly increased, while HDL-C was significantly decreased in NAFLD than controls. Additionally, BMI, AST, ALT, γ -GT, fasting insulin, fasting C peptide, HOMA-IR and serum zonulin were significantly higher in NASH than those of simple steatosis. Unlike IL6, a positive correlation was obvious between serum zonulin, BMI, ALT, triglycerides, fasting insulin, HOMA-IR, IL-6 and histopathologic features the liver injury, along with an inverse linkage to HDL-C.

Conclusion: The stepwise increase of serum zonulin from simple steatosis to NASH substantiating its pathogenic role in NAFLD progression. Targeted therapy with zonulin antagonists would be a suggested new avenue of NAFLD prevention warranted by future large scale studies.

Biography

Mona M Aref completed her MD from Biochemistry Department, Menoufia Faculty of Medicine, Menoufia University, Egypt, and became Lecturer of Clinical Biochemistry at the same university in 2010. Now, she is a Consultant Clinical Biochemistry Pathologist, in General Directorate of Laboratories and blood bank in Ministry Of Health, Saudi Arabia. She has publications of about 4 papers in reputed journals. She has membership in many medical societies.

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