Title: Nonalcoholic fatty liver disease associates with subclinical chronic inflammation in Bangladeshi individuals with prediabetes

Author Block: M.M.R. Shah[1], I.A. Hossain[2], L. Ali[2]
[1]Dept of Microbiology and Immunology, Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka, Bangladesh, [2]Dept of Biochemistry and Cell Biology, Bangladesh University of Health Sciences (BUHS), Dhaka, Bangladesh.

ABSTRACT

Association of nonalcoholic fatty liver disease (NAFLD) with type 2 diabetes mellitus is fairly well established. However, the association of the condition with prediabetes mediated by subclinical chronic inflammation has not been adequately explored. Under a cross-sectional analytical design a total of 110 (Mean±SD age, 45±9 years) consecutive prediabetic subjects were recruited. Diabetes and prediabetes were diagnosed by 2-sample OGTT based on WHO Study Group criteria. NAFLD was diagnosed on the basis of ultrasound assessment of the liver and were divided into a NAFLD group (n=48) and a non NAFLD group (n=62). Serum glucose was measured by glucose-oxidase method. Serum insulin and hs-CRP as inflammatory biomarker were measured by enzyme immunoassays. Insulin resistance was measured by homeostasis model assessment (HOMA-IR). The prevalence of NAFLD was 44% among the prediabetes. Study subjects were age, sex/- & BMI/- matched. Serum hs-CRP was significantly higher in NAFLD group compared to the non NAFLD group [3.7 (0.1-14.9) *vs.* 1.7 (0.2-13.2) (mg/l), $p<0.001$]. On Pearson's correlation analysis, hs-CRP showed significant positive correlation with HOMA-IR ($r=0.349$, $p=0.029$) in NAFLD subjects. Using binary logistic regression analysis, it was found that hs-CRP is a significant determinant of NAFLD [hs-CRP OR (95% CI): 1.2 (1.03-1.55), $p=0.025$] after adjusting the effect of major confounders (age, sex and BMI). Subclinical chronic inflammation seems to be independent mediators of the association between NAFLD and prediabetes. The data also indicate that the inflammatory condition and NAFLD are associated with each other and those in turn are affected by insulin resistance in prediabetic subjects.

Biography

Md Mijanur Rahman working as a Scientific Officer in the Dept of Microbiology & Immunology at the Bangabandhu Sheikh Mujib Medical University (BSMMU). With Msc and BSc academic background in Biochemistry & Molecular Biology his major research areas include pathophysiology of NAFLD, inflammation and adipocytokines. He has two (02) full articles

(International) and one (01) supplementary article and out of 04 abstracts/posters he has delivered 02 presentations in regional/international conferences in home and abroad. He has been awarded for BSC (Bangladesh Scholarship Council) for his academic achievements.

Presenting author details

Full name: Md Mijanur Rahman Shah

Contact number: +88-01716076110

Twitter account: N/A

Linked In account: N/A

Session name/ number: Md Mijanur Rahman Shah

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