Title: Association of serum leptin with insulin resistance in different grades of prediabetic nonalcoholic fatty liver disease subjects

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Nonalcoholic fatty liver disease (NAFLD) is emerging as a major health problem in Bangladeshi population and prediabetic subjects are more vulnerable to develop it due to the problem of insulin resistance. A total of 160 (one hundred and sixty) prediabetic subjects comprising of 43 impaired fasting glucose (IFG), 59 impaired glucose tolerance (IGT) and 58 IFG-IGT subjects were recruited. NAFLD was diagnosed on the basis of ultrasound assessment of the liver and the subjects were divided into a NAFLD group (n=73) and a non-NAFLD group (n=86). Grades of NAFLD was classified into grade 0 (normal echogenicity, n=86), grade 1 (mild steatosis, n=48) and grade 2 (moderate steatosis, n=26). Insulin resistance was measured by homeostasis model assessment (HOMA-IR). Logarithmically transformed serum leptin and HOMA-IR was significantly higher in NAFLD subjects compared to their non-NAFLD counterparts ($p<0.001$). Serum leptin and HOMA-IR levels increased with increasing severity of NAFLD and their levels were significantly higher in grade 1 ($p<0.001$) and grade 2 ($p<0.001$) compared to the grade 0 subjects. On Pearson's correlation analysis, HOMA-IR showed significant positive correlation with log leptin in grade 1 ($p=0.013$) and grade 2 ($p=0.044$) NAFLD subjects. On binary logistic regression analysis, HOMA-IR [Odds ratio (OR)=3.222, $p<0.001$] and log leptin (OR=1.056, $p=0.011$) were found to be significant determinants of NAFLD after adjusting the potential confounders of waist to hip ratio, percent body fat and triglyceride respectively. Increased levels of serum leptin seem to have an association with insulin resistance among Bangladeshi prediabetic subjects suffering from NAFLD.

Biography

Israt Ara Hossain is presently serving as a Sr Lecturer at the Department of Biochemistry & Cell Biology in the Bangladesh University of Health sciences (BUHS). With academic background in Biochemistry & Molecular Biology her major research areas include pathophysiology of diabetes and prediabetes and NAFLD. She has thirteen (13) full articles (International) among these seven as first author and two supplementary articles and out of 16 abstracts/posters she has delivered 5

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