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17TH GLOBAL DIABETES CONFERENCE & NURSING CARE

March 08-09, 2018 | Paris, France

Serum parameters as possible diagnostic biomarkers of non-alcoholic fatty liver disease (NAFLD) in Saudi type-2 diabetic patients

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Diagnosing non-alcoholic fatty liver disease (NAFLD) in an early stage is crucial for proper management. Hence, diagnostic serum biomarkers are strongly required. We aimed to explore the use of highly sensitive C-reactive protein (hs-CRP), free fatty acids (FFAs), a measure of insulin resistance (HOMA-IR), and some routinely measured parameters as markers of NAFLD in T2DM Saudi patients. A total of 50 T2DM patients diagnosed with NAFLD, and 44 without were recruited from the diabetic clinics in the University Hospital. Anthropometric measurements and blood pressure were taken. Glucose, HbA1c, total cholesterol (TC), HDL-Cholesterol (HDL-c), Triglycerides, Aspartate aminotransferase (AST), Alanine aminotransferase (ALT), γ-glutamyl transferase (γ-GT), Alkaline Phosphatase (ALP), total bilirubin, insulin, high sensitive C-reactive protein (hs-CRP), and free fatty acids (FFAs) were measured. HOMA-IR and LDL-cholesterol (LDL-c) were calculated. Differences between the two groups were tested statistically. There was no difference between the two groups in gender distribution, mean age, albumin, total bilirubin, glucose, or HbA1c ($P > 0.05$ in all cases). However, patients with NAFLD had significantly higher mean duration of diabetes ($P=0.04$), BMI ($P<0.001$), Waist Circumference (WC) ($P<0.001$), and SBP ($P=0.011$). In addition, they had higher mean TC, LDL-c, Triglycerides, Hs-CRP, ALP, insulin, HOMA-IR ($P<0.05$), AST, ALT, γ-GT, and FFAs ($P<0.001$), and lower mean HDL-c ($P=0.04$). Highly elevated values of triglycerides, FFA, AST, γ GT, and HOMA-IR were only found in NAFLD. Due to overlap in ranges between the two groups, a combination of these parameters could be used to diagnose the disease.

Biography

Ghada Ajabnoor is an assistant professor of Faculty of Medicine at King Abdulaziz University.

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