Original Article

Insulin Resistance and Related Factors in Non-Alcoholic Fatty Liver Disease (NAFLD): An Analytic Cross-Sectional Study

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ABSTRACT

Background: Non-alcoholic fatty liver disease (NAFLD) is characterized by fatty change of liver without inflammation. The aim of this study was to evaluate presence of clinical and metabolic components in non-diabetic patients with NAFLD and to assess the relationship between insulin resistance and these factors.

Materials and Methods: In this study, a group of 50 sonographically confirmed patients with NAFLD was studied. Following an overnight fasting, blood samples were obtained to measure serum levels of Triglyceride, Cholesterol, Low Density Lipoprotein (LDL-C), High Density Lipoprotein (HDL-C), SGOT and SGPT, haemoglobin A_1C, Fasting Blood Sugar (FBS) and peripheral blood insulin level. Based on homeostatic model assessment (HOMA) score, patients were divided into four quartiles. Other variables including BMI, waist and hip circumference were also measured.

Results: The mean age was 42 ± 10.3 years (range, 22-65), 33 cases (66%) were men, and 17 cases (34%) were women. Mean insulin level was higher in females (female=15.3 ± 6.7, males=12.9 ± 5.7). Variables including waist (P=0.38) and LDL-C (P =0.49) were significantly different among defined study groups. The higher the HOMA index, the lower the HDL-C level (P <0.05).

Conclusion: Patients with insulin resistance showed significant higher values of LDL and Waist circumference. Values of HDL were significantly lower in these patients. Body mass index, Weight, Triglyceride, Cholesterol, AST and ALT values showed no relation with insulin resistance.

Keywords: Non-alcoholic fatty liver, Insulin resistance, Liver

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INTRODUCTION

Non-alcoholic fatty liver disease (NAFLD) is characterized by fatty change of the liver with and without inflammation, similar to those of alcoholic liver disease but in the absence of significant alcohol in-

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take.(1), NAFLD is one of the most common causes of elevated liver enzymes among adults.(2), and encompasses a spectrum of clinicopathologic entities, all of which include an accumulation of fat in the hepatic parenchyma ranging from simple hepatic steatosis to non-alcoholic steatohepatitis (NASH), cirrhosis, and may lead to hepatocellular carcinoma.(3), The epidemiology of NAFLD has been a subject of great interest among clinical investigators. With the current epidemic of obesity and dia-