Abstract

Background and aims. Non-alcoholic fatty liver disease (NAFLD) is the hepatic manifestation of the metabolic syndrome related to insulin resistance. Insulin-like growth factor 1 (IGF-1) is mainly produced by hepatocytes and its secretion is stimulated by growth hormone. Our aim was to assess possible changes in IGF-1 levels in patients with different ultrasonography stages of NAFLD and its association with hyperlipidemia, impaired glucose tolerance, non-insulin dependant type 2 diabetes, waist circumference, obesity and arterial hypertension. Methods. One hundred and ten consecutive patients were evaluated. Results. IGF-1 levels decreased as liver steatosis worsened. There was a statistically significant difference between mild-moderate steatosis on one hand, and severe steatosis on the other (142 vs. 110, P < 0.05). Homeostasis model assessment of insulin resistance (HOMA) and insulin levels showed a tendency to inverse association with IGF-1, but it was not statistically significant. HOMA significantly increased in severe liver steatosis when compared with mild-moderate steatosis 6.20 vs. 3.99, P < 0.05). Insulin levels also showed a significant increase (3.01±0.61 vs. 2.59±0.56, P < 0.05). Body mass index showed a significant inverse correlation with IGF-1 level (r = -0.19, P < 0.05) and atendency to increase as liver steatosis worsened. Waist circumference increased significantly as liver steatosis worsened (severe vs. mild-moderate: 114 vs.100, P <0.05). Conclusions. IGF-1 levels showed a decrease as liver steatosis worsened. This difference was statistically significant between mild-moderate and severe stetaosis. Inverse correlation between IGF-1 levels and BMI was also statistically significant. There was no statistically significant correlation between IGF-1 levels and HOMA and insulin levels.

Keywords

IGF-1, liver steatosis, metabolic syndrome.