25TH NATIONAL & 11TH INTERNATIONAL ANNUAL CONGRESS
ON RESEARCH AND TECHNOLOGY OF IRANIAN MEDICAL SCIENCES STUDENTS
URMIA UNIVERSITY OF MEDICAL SCIENCES, URMIA, IRAN

Weight-Adjusted-Waist Index in Relation to Liver Function and Non-Alcoholic Fatty Liver Disease

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Citation:
Aref Hosseini S, Ebrahimi Mameghani M. Weight-Adjusted-Waist Index in Relation to Liver Function and Non-Alcoholic Fatty Liver Disease. *Iranian biomedical journal*. Supplementary (12-2024): 342.

ABSTRACT

Introduction: Weight-adjusted-waist index (WWI), as a novel anthropometric index, has been suggested to reflect metabolic status in multiple disorders, especially in cardiometabolic and obesity-derived disorders. This study aimed to investigate whether WWI is related to liver function and non-alcoholic fatty liver disease (NAFLD).

Methods and Materials: The present cross-sectional study included 238 (105 male and 133 female) adults aged 18-70. Weight, height, and waist circumference (WC) were measured, and then, body mass index (BMI) and WWI were estimated. After 12-14 hours of fasting and taking blood samples, serum liver enzymes and ferritin levels were assessed. Furthermore, NAFLD was diagnosed using ultrasonography findings.

Results: The prevalence of NAFLD was 84.6%. Mean WWI was 11.24 ± 0.65 and was more significant in women than men (p = 0.001), although mean WC in men was significantly greater than women (p = 0.001). Among all studied metabolic factors, WWI was significantly correlated with BMI. Moreover, by increasing the severity of fatty liver, mean WWI increased (p = 0.001). However, WWI was not associated with the risk of NAFLD after adjusting for age, gender, and BMI (OR = 1.17; CI 95%: 0.76-1.82; p = 0.468).

Conclusion and Discussion: While WWI was related to the severity of liver steatosis, it failed to predict NAFLD.

Keywords: Fatty liver, Liver, Non-alcoholic fatty liver disease

[DOI: 10.61186/ibj.25th-11th-IACRTIMSS]