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Waist to height ratio: A simple screening tool for nonalcoholic fatty liver disease in obese children

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Aim: We aimed to assess the role of anthropometric parameters in prediction of nonalcoholic fatty liver disease (NAFLD) and to identify cut-off values of useful anthropometric indices for prediction of NAFLD in obese children.

Study Design & Method: Obese children who visited pediatric endocrinology unit consecutively with a complaint of obesity were included in this study. 332 obese children (152 male, 180 female), aged 4.6-17.0 years, were included in this study. Body mass index (BMI), waist circumference (WC), and waist height ratio (WHtR) were calculated. NAFLD was diagnosed by using ultrasonography (US).

Results: NAFLD was present in 60.8% of obese children. Fatty liver prevalence differed significantly by gender and puberty (55.0% of girls vs 67.7% of boys, and 28.7% in preburtal vs 71.3% in pubertal children) ($p < 0.05$). Significantly higher BMI, BMI Standard Deviation Score, WC, and WHtR were found in obese children with NAFLD, compared with obese children without NAFLD ($p < 0.05$). Only WHtR was found as an independent predictor for NAFLD in logistic regression analysis ($p < 0.001$, B:1.096, 95% CI 1.047–1.148). In ROC analysis, the threshold of WHtR for predicting NAFLD is 0.62 according to Youden's index.

Conclusion: Fatty liver is common among obese children, particularly in obese boys. WHtR is simple and easy index in predicting of NAFLD in obese children and it can be used for mass screening in public health.

Biography

Betul Ersoy has completed her MD from Ankara University and Post-doctoral studies from Ege University, School of Medicine. She has published more than 30 papers in reputed journals.

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