



Diagnostic precision of the triponderal mass index (TMI) to identify the metabolically unhealthy obesity phenotype in obese patients.

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INTRODUCTION

The metabolically healthy obese phenotype (MHO) defines obese patients who have preserved insulin sensitivity and who do not have metabolic complications: lower risk of cardiovascular disease and type 2 diabetes in adulthood.

Recent studies indicate that TMI (kg/m³) estimates the percentage of body fat more accurately than the BMI and it has been proposed to substitute the use of the BMI z-score values for those of the TMI. TMI values remain very uniform in both boys and girls from the age of 8 to 18 years(*), so a single cut-off point can be used to identify overweight (TMI \geq 13.8 and \leq 15.2) and obesity (TMI \geq 15.3).

RESULTS

The prevalence of MUO in our cohort is 64.4% without observing differences between sexes, increasing with age and with the degree of obesity.

MUO component frequency: 1. Blood glucose \geq 100 mg/dl: 0.8%. 2. plasma triglycerides \geq 150 mg/dl: 17.6%, 3. HDL-c \geq 40 mg/dl: 27.6%, 4. TAS > p90 and TAD > p90: 38.1% and 14.6% respectively. The TMI has a sensitivity of 75.8 and a specificity of 42.2 for identifying MUO patients. The best cut-off point for TMI is 18.7 kg/m³, for zsBMI +3.5 SDS, for BMI 30.4 kg/m², and for WHtR 0.62.

AIM

To determine the prevalence of MHO and the obese unhealthy obesity phenotype (MUO) in a cohort of obese children and adolescents and to establish the predictive capacity of the TMI and other anthropometric parameters to identify these patients.

METHOD

Cross-sectional study of 239 obese patients (125 males) between 8 and 18 years of age, 45.9% of which have class 3 obesity. The ROC curves are used to find the best cut-off point for TMI, BMI, BMI z-score value (zsBMI) and waist-to-height ratio (WHtR).

CONCLUSIONS

The diagnostic accuracy of TMI to identify children and adolescents with metabolic risk is similar to that of BMI and WHtR. However, it greatly facilitates and simplifies the categorization of the degree of obesity in both sexes in the age range of 8 to 18 years.

REFERENCES

(*)Carrascosa A. Yeste D et al. Body mass index and tri-ponderal mass index of 1,453 healthy non-obese, non-undernourished millennial children. The Barcelona longitudinal growth study. *An Pediatr (Bar)*, 89 (2018), pp. 137-143

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