The role of aspartate transaminase to platelet ratio index (APRI) for the prediction of non-alcoholic fatty liver disease (NAFLD) in severely obese children and adolescents.

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The aspartate transaminase to platelet ratio index (APRI) has been proposed as an easyto-use biochemical marker in obese adults with non-alcoholic fatty liver disease (NAFLD) and non-alcoholic steatotic hepatitis (NASH). The objective of the present study was to evaluate the clinical and predictive value of APRI in a paediatric obese population. Seven hundred fifty-seven obese children and adolescents (BMI standard deviation score, SDS: >2.0; age range: 10–18.5 years), not consuming alcohol and without hepatitis B or C, were recruited after having been screened for NAFLD by ultrasonography. A series of demographic, biochemical and clinical parameters was compared between the two subgroups (with or without NAFLD); the same parameters were correlated with APRI; and finally, univariable and multivariable logistic regression was used to evaluate the predictors of NAFLD. NAFLD was diagnosed in about 39% of the entire paediatric population, predominantly in males and in subjects suffering from metabolic syndrome. APRI was correlated with the waist circumference (WC), high-density lipoprotein cholesterol (HDL-C), uric acid, total bilirubin, C reactive protein (CRP) and systolic blood pressure (SBP). Furthermore, APRI was higher in males than females, but independent from steatosis severity and metabolic syndrome. With the univariable analysis, the BMI SDS, triglycerides (TG), insulin, homeostatic model assessment for insulin resistance (HOMA-IR), APRI, uric acid and metabolic syndrome were positive predictors of NAFLD, with female sex being negative predictor. At multivariable analysis; however, only BMI SDS, TG, HOMA-IR and APRI were positive predictors of NAFLD, with female sex being a negative predictor. The accuracy of APRI as a biochemical marker of NAFLD was about 60%.In conclusion, in a large (Italian) paediatric obese population, parameters, such as BMI SDS, TG, HOMA-IR and APRI, were positive predictors of NAFLD, with female sex being a negative predictor and most of the prediction explained by APRI. Nevertheless, APRI appears to be a simple biochemical marker of liver injury rather than of NAFLD/NASH and, moreover, is endowed with a limited accuracy for the prediction/diagnosis of NAFLD.