

Development and internal validation of fatty liver prediction models in obese children and adolescents.

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To develop predictive models of fatty liver (FL), we performed a cross-sectional retrospective study of 1672 obese children with a median (interquartile range) age of 15 (13-16) years. The outcome variable was FL diagnosed by ultrasonography. The potential predictors were: (1) binary: sex; (2) continuous: age, body mass index (BMI), waist circumference (WC), alanine transaminase (ALT), aspartate transaminase, gamma-glutamyltransferase, glucose, insulin, homeostasis model assessment of insulin resistance (HOMA-IR), HDL-cholesterol, LDL-cholesterol, triglycerides, mean arterial pressure, uric acid, and c-reactive protein; (3) ordinal: Pubertal status. Bootstrapped multivariable logistic regression with fractional polynomials was used to develop the models. Two models were developed and internally validated, one using BMI and the other using WC as the anthropometric predictor. Both models included ALT, HOMA-IR, triglycerides, and uric acid as predictors, had similar discrimination (c -statistic = 0.81), and were similarly well calibrated as determined by calibration plots. These models should undergo external validation before being employed in clinical or research practice.

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