Nonalcoholic fatty liver disease (NAFLD) has become the most common liver disease and is related to metabolic risk factors such as obesity, insulin resistance, dyslipidemia, diabetes mellitus and metabolic syndrome. Gamma-glutamyl transpeptidase (GGTP) and high density lipoprotein cholesterol (HDL-C) have shown a correlation with the degree of steatosis and metabolic syndrome respectively. The objective of this study was to evaluate the diagnostic performance of the GGTP/HDL-C ratio for NAFLD in adults with obesity who are candidates for bariatric surgery.

Analytical cross-sectional study with diagnostic test evaluation, in which a secondary database of 249 adults with obesity was analyzed. The diagnosis of NAFLD was based on liver biopsy, the most appropriate cut-off point was determined by three methods and five adjustment models were built in the global population and stratified by sex.

Participants with NAFLD showed elevated values of glucose, GGTP, GGTP/HDL-C ratio, insulin, and HOMA-IR, but lower HDL-C. In the global group of the last adjusted model with high GGTP/HDL-C ratio, the prevalence of NAFLD was 14% (PR: 1.14, 95%CI: 1.04-1.33) higher, while in women with this altered parameter the prevalence was 19% (PR: 1.19, 95%CI: 1.07-1.42) higher than those with normal values. The optimal cutoff value was 20.5 U/mmol and the area under the curve (AUC) of the ratio was 0.81 (95%CI: 0.64-0.98), sensitivity and specificity were 82% and 77.8% respectively.

The analysis of the results suggests that the GGTP/HDL-C ratio is a useful biomarker for the diagnosis of NAFLD in adults with obesity.