

Title: Triglyceride Glucose-Waist Circumference (TyG-WC) Is a Reliable Marker to Predict Non-Alcoholic Fatty Liver Disease

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Abstract

Triglyceride and glucose index (TyG index), a marker of insulin resistance, is positively associated with NAFLD. Modified TyG indices, combining body composition markers including body-mass index (BMI) or waist circumference (WC) with TyG index, are reported to enhance predictability of insulin resistance. This study aimed to compare the usefulness of modified TyG indices for predicting NAFLD to TyG index and fatty liver index (FLI). This cross-sectional study included 12,757 Korean adults. TyG index and FLI were calculated using established formulas, and TyG-BMI and TyG-WC were calculated as TyG * BMI and TyG * WC, respectively. All measures were divided into quartiles. NAFLD severity (grade 0-3) was compared using ANOVA by quartiles of each index. Odds ratios (ORs) and 95% confidence intervals (CIs) for NAFLD were calculated using multiple logistic regression analysis. ROC and AUROC analyses were performed to compare predictability of NAFLD using WC, BMI, TyG, TyG-BMI, TyG-WC and FLI. Higher TyG index, TyG-BMI, TyG-WC, and FLI were associated with higher grade of NAFLD. ORs(CIs) for NAFLD increased in all indices, especially in TyG-WC [39.251 (31.304-49.215)] and FLI [38.937 (31.145-48.678)]. AUROC was 0.848 (0.840-0.855) for TyG-WC and 0.850 (0.842-0.857) for FLI. TyG-WC is a reliable indicator for the presence of NAFLD in Korean adults.