Triglyceride-Glucose Index May Help Predict ASCVD Risk

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January 31, 2022

The study covered in this summary was published on ResearchSquare.com as a preprint and has not been peer reviewed.

Key Takeaways

- Researchers found an independent relation between the triglyceride-glucose (TyG) index and thoracic-aorta intima-media thickness (IMT), an early marker of subclinical atherosclerosis in patients without atherosclerotic cardiovascular disease (ASCVD). They concluded that the TyG index can be used to identify otherwise healthy patients at increased risk for ASCVD.

- Increased TyG index is associated with a greater risk for diabetes, stroke, and coronary artery disease in healthy individuals, and it might be correlated with asymptomatic carotid artery atherosclerosis. An IMT greater than 1.5 mm has been associated with an increased risk for coronary artery disease and stroke.

- TyG, an independent marker of insulin resistance, is easily calculated from fasting glucose and triglyceride levels, making it a potentially valuable tool for clinical practice.

Why This Matters

- This study is the first to show an independent relation between the TyG index and thoracic-aorta IMT.

- The TyG index could be used as a relatively simple, noninvasive test to predict cardiovascular risk as an initial alternative to more complex studies, such as carotid ultrasound or echocardiography.

Study Design

- A total of 122 patients undergoing transesophageal echocardiography (TEE) for suspected noncoronary structural heart disease between January and June 2021 were enrolled in the study. The population was divided into two groups of 61 patients, according to IMT: high IMT (> median) or low IMT (≤ median); the median IMT was 1.42 mm.

- Patients with known cardiovascular disease or those taking drugs that affect lipid characteristics or insulin sensitivity were excluded.

- Fasting blood samples were drawn before the TEE procedure. The TyG index was calculated using the formula TyG = ln [(glucose (mg/dL) triglycerides(mg/dL)/2], and major risk factors for cardiovascular disease were recorded for each participant.

- SPSS 22.0 software was used for statistical analysis. Variables known to play a role in atherosclerosis were entered into the regression model, with P < .05 considered statistically significant.

Key Results

- The TyG index was higher in the high IMT group (8.69 ± 0.59 vs 8.37 ± 0.53; P = .003). The index was correlated with IMT (P = .005) and age (P < .001).

- People in the high-IMT group were older, with higher creatinine, glucose, and triglyceride levels, and a higher TyG index.

- Sex, smoking status, cholesterol levels, and TEE indications were similar among the high-IMT and low-IMT groups.

- Although IMT was correlated with age, glucose, triglycerides, creatinine, and TyG index, no correlation was seen with cholesterol levels.

Limitations

- A relatively small cross-section of at-risk patients (young subjects at low risk for cardiovascular disease) was included.

- The cross-sectional nature of the study precluded the identification of causal relations.

Study Disclosures

- The authors declare that they have no position in a healthcare-related company, do not hold patents, do not receive any funding or payment from external sources, and report no conflicts of interest.

This is a summary of a preprint research study, Triglyceride Glucose Index Is Independently Associated With Aorta Intima-Media Thickness In Patients Without Clinical Manifestations of Cardiovascular Disease, written by Süleyman Özbiçer and colleagues from the University of Health Sciences Adana City Training and Research Hospital, Adana, Turkey, and provided to you by Medscape. This study has not yet been peer-reviewed. The full text of the study can be found on ResearchSquare.com.

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Cite this: Triglyceride-Glucose Index May Help Predict ASCVD Risk - *Medscape* - Jan 31, 2022.