Can triglyceride-glucose index be used as a prognostic predictor in heart failure?

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KEYWORDS: heart failure, all-cause mortality, triglyceride-glucose index.

CITATION: Cardiol Croat. 2024;19(11-12):440. | https://doi.org/10.15836/ccar2024.440

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Introduction: The triglyceride-glucose index (TyG) has been proposed as a surrogate marker of insulin resistance (IR) in heart failure (HF). Recent studies have shown that higher TyG index was directly related to impaired left ventricular structure and function and to an increased risk of HF.[1] The aim of this study was to investigate the prognostic value of TyG index in patients with heart failure.

Patients and Methods: We examined the real-live cohort of patients with heart failure diagnosis from the registry of Dubrava University Hospital in the period between June 2021 and August 2023. The TyG index was calculated as ln [fasting triglyceride level (mg/dL) × fasting plasma glucose level (mg/dL)/2]. The primary outcomes were all-cause mortality and hospitalization during follow-up period. We used chi-square test and logistic regression to investigate the associations of the TyG index with primary endpoints and the p value of 0.05 was defined as statistically significant.

Results: This registry-based study included 916 patients with a median age of 69 years (IQR 62-76), and a median follow-up period was 365 days (IQR 281-386). The patients were divided into two groups using the median of the patients' TyG index values (10.39). A total of 97 (9.7%) all cause deaths occurred. Although the mortality rate was 32% higher in the group with TyG index above 10.39, the difference in mortality between the two groups was not statistically significant (chi-square 3.19, p=0.07), even with after the adjustment for confounding factors and performed logistical regression analysis (p=0.09). Similarly, the hospitalization rate (19% and 17%) between two groups was not statistically significant (p=0.39).

Conclusion: TyG index is readily available marker that has been associated with atherosclerotic cardiovascular diseases and incidence of HF in general population. While the difference in mortality between the two groups was not statistically significant at the conventional threshold, there is a trend toward increased mortality in a group of patients with the higher TyG index. These results require further investigation of the prognostic value of TyG index in heart failure with larger cohort of patients and longer follow-up period.

RECEIVED:
September 29, 2024
ACCEPTED:
October 31, 2024

LITERATURE

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