LETTER TO THE EDITOR

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Hamidiye Med J

Comments on "Evaluation of the Triglyceride-Glucose Index with Different Generations of Beta-Adrenergic Blockers"

"Farklı Nesil Beta-Adrenerjik Blokerlerle Trigliserit-Glukoz İndeksinin Değerlendirilmesi" Hakkındaki Yorumlar

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Anahtar Kelimeler: Beta blokerler, trigliserit-glukoz indeksi, insülin direnci

Dear Editor,

We read with great interest the article titled "Evaluation of the Triglyceride-Glucose Index with Different Generations of Beta-Adrenergic Blockers" by Erciyes et al. (1). The authors' focus on the metabolic effects of beta-blockers using the triglyceride-glucose (TyG) index, a simple indicator of insulin resistance, and their finding that third-generation agents are associated with a better metabolic profile provide a valuable contribution to the literature. Notably, the inclusion of a large sample size (n = 712) in this retrospective study strengthens its potential to address existing gaps in the field.

However, several methodological considerations merit further discussion. The exclusion of patients with diabetes mellitus warrants consideration from two perspectives. From a clinical translation standpoint, this restriction may limit the applicability of the findings to diabetic populations, a group in which the metabolic effects of beta-blockers are most critical, as illustrated by randomized controlled trials, such as Bakris et al. (2), which demonstrated that carvedilol significantly improved insulin sensitivity compared to metoprolol in patients with type 2 diabetes. On the other hand, because the TyG index is derived from fasting glucose and triglycerides and closely tied to glucose homeostasis and insulin resistance, restricting the analysis to non-diabetic individuals can also be regarded as a methodological strength, as it allows evaluation of metabolic differences between generations of beta-blockers in a more homogeneous population, free from the confounding effects of overt hyperglycemia and antidiabetic therapy. Furthermore, the retrospective design the reliable capture of limits the reliable capture of lifestyle-related factors such as diet and physical activity from routine clinical records, and intergroup differences may partly reflect these unmeasured lifestyle variations rather than drug effects alone. Beyond these, anthropometric parameters such as body mass index and waist circumference, well-established correlates of insulin resistance, may also influence TyG values and warrant consideration when interpreting the findings.

Secondly, although the prognostic value of the TyG index is consistent with the literature, its sensitivity to pharmacological treatments remains debated. Liu et al. (3) conducted a meta-analysis in the general population confirming the strong association between the TyG index and cardiovascular disease and mortality risk, validating it as a good risk predictor. However, the extent to which this index accurately reflects changes in response to pharmacological interventions and correlates with the gold-standard hyperinsulinemic-euglycemic clamp test remains controversial. It is crucial for the authors to support these findings with randomized studies based on hard endpoints (e.g., incidence of new-onset diabetes).

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Additionally, while the study found significant differences between bisoprolol and atenolol within the second-generation group, Poirier et al. (4) compared nebivolol with atenolol and demonstrated the metabolic superiority of nebivolol. Although the present study focuses on "generations" rather than drug-specific effects, a deeper comparison of pharmacological differences within the same generation (e.g., bisoprolol vs. metoprolol) and their effects on the TyG index could have made the results more meaningful.

While the study presents an encouraging hypothesis, these findings need to be confirmed by prospective, randomized studies that include hard endpoints before being translated into clinical practice.

Footnotes

Conflict of Interest: No conflict of interest was declared by the author.

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