Assessment of the Eligibility of TG-glucose index & TG-HDL-C ratio as insulin resistance indices Among overweight/obese Egyptians

Ghada Omar, Assistant Professor, National Institute of Diabetes and Endocrinology

Background:

Insulin resistance (IR) means the requirement of a higher insulin concentration to produce the expected biological effect. It was proposed that triglycerides–glucose index (TY G) and triglycerides–high-density lipoprotein cholesterol ratio (TG/HDL) were dependable, applicable, and less-expensive markers of IR.

However, their results varied significantly among different ethnic groups. Aim To assess the eligibility of TY G and TG/HDL as IR indices among overweight and/or obese Egyptians.

Patients and methods The participants in this cross-sectional study were 328 overweight and/or obese Egyptians. Their fasting blood glucose, TG, HDL, and fasting insulin blood concentrations were estimated.

Homeostasis model assessment-insulin resistance (HOMA-IR), TY G, and TG/HDL were calculated. Results A statistically significant positive correlation between HOMA-IR and both TY G ($r = 0.688$; $P < 0.001$) and TG/HDL ($r = 0.590$; $P < 0.001$) was identified. Four quartiles had been set up for HOMA-IR across which both indices showed trends of consistent increase.

Analysis of the receiver-operating characteristic curves revealed that TY G [area under the curve = 0.858 (95% confidence interval 0.819–0.897) ($P < 0.001$)] is a better marker for IR than TG/HDL [area under the curve = 0.796 (95% confidence interval 0.750–0.843) ($P < 0.001$)] and demonstrated more than or equal to 8.22 and more than or equal to 1.82 as their respective cutoff values.

Conclusion:

TY G and TG/HDL demonstrated significant association with HOMA-IR and might be applied as eligible indices of IR among overweight and/or obese Egyptians.