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The TYG index as a potential predictor of subclinical vascular disease after the menopause

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Context: Obese postmenopausal women present with a clustering of co-existing metabolic risk factors and are easily stratified in cardiovascular risk-categories, whereas lean women are more difficult to be risk-stratified.
Objective: To examine the association of the metabolic syndrome (MetS) and the triglyceride-glucose index (TyG-Index), a novel marker of insulin resistance, with subclinical atherosclerosis and arterial stiffness in a cohort of postmenopausal women, stratified according to their body mass index.
Methods: We evaluated the association between indices of vascular function/structure and the MetS and TyG-index, independently in lean and overweight/obese postmenopausal women.
Patients: 473 informed-consenting, non-diabetic postmenopausal women, without overt cardiovascular disease
Interventions: 1) Sonographical assessment of carotid/femoral intima-media thickness (IMT) and pulse wave velocity (PWV). 2) Fasting venous blood samples for biochemical and hormonal assessment.
Main outcome measures: Predictive ability of TyG-index vs MetS with respect to cardiovascular risk-classification in lean vs overweight/obese postmenopausal women.
Results: The TyG-Index correlated with PWV (r=0.157, p-value=0.013) and carotid IMT (r=0.155, p-value=0.012), only in lean women. Subclinical atherosclerosis was predicted by MetS in the overweight/obese group (OR=2.517, p-value=0.033), and by the TyG-Index in the lean group (OR=3.119, p-value<0.001). Applying a TyG-Index cut-off value of 8.0 in the lean subgroup, women with TyG index>8 had higher prevalence of subclinical atherosclerosis vs women with TyG-index levels ?8 (44.1% vs 29.4%, p-value=0.043).
Conclusions: The MetS serves as a better predictor of subclinical atherosclerosis in overweight/obese women, while the TyG-Index is associated with carotid atherosclerosis and arterial stiffness mainly in lean postmenopausal women.

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