Left ventricular global longitudinal strain rate is influenced by stable coronary artery disease

To the Editor,

We have read with great interest the article published by Doğduş et al. (1) about the relationship between subclinical left ventricular dysfunction and body mass index. Three-dimensional left ventricular strain echocardiography assessments have shown that overweight and obese patients have worse left ventricular function than normal controls (1).

Left ventricular strain imaging is an important tool to assess subclinical left ventricular dysfunction. Stable coronary artery disease (SCAD) is characterized by ischemic symptoms occurring with exercise or emotional or other stressful conditions and symptoms relief with rest (2). Radwan and Hussein (3) have demonstrated that left ventricular global longitudinal strain rate is worse in patients with SCAD than in those without SCAD. Also, left ventricular global longitudinal strain rate is associated with the severity of coronary artery disease (3). "SCORE" is a cardiovascular disease predicting score and is used to predict the patients who have potential risk to have coronary artery disease. Age and sex are the two parameters assessed in SCORE chart (4).

It is seen that the male to female ratio and age parameters are significantly different between overweight, obese, and normal groups in the study. Both age and male sex rates are lower in the normal group. As these two parameters are important predictors of coronary artery disease and although established coronary artery disease is an exclusion criteria, there may be difference between groups with regard to the presence of SCAD.

To conclude, SCAD is an important factor that affects left ventricular global longitudinal strain rate. Therefore, it would be better to either question patients about symptoms indicating SCAD or assess them using SCORE chart to evaluate the potential coronary artery disease risk. Undiagnosed SCAD might have influenced the results.

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Author`s Reply

To the Editor,

We thank the authors for their interest and agree with their opinion. However, we have stated that overweight patients did not show stable coronary artery disease (SCAD) symptoms in the conclusion section as "apparently healthy subjects". These patients were asymptomatic, and did not have angina pectoris or its equivalent. Therefore, we do not think that overweight people have undiagnosed SCAD in this study.

Strain results may vary with respect to sex and age (1). In our study, when the covariance analysis of strain values was corrected according to age and sex variables, age (p=0.001) and sex (p=0.021) were found to be effective for global longitudinal strain (GLS) variable (2).

We evaluated the relationship between CAD severity and resting three-dimensional speckle-tracking echocardiography (3D-STE) in patients with stable angina pectoris in another study (3). GLS and all other strain parameters were significantly worse in patients with critical CAD than in those with noncritical CAD. We showed that 3D-STE is a noninvasive and convenient option to detect subclinical left ventricular dysfunction and that global strain values were significantly correlated with CAD severity.

Further studies are needed to clarify the pathophysiology of "obesity cardiomyopathy" after exclusion of factors that may

cause subclinical LV dysfunction, such as age, sex, and stable CAD.

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