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Fat, Fit, or Myth?

Şişman mı? İdeal kilolu mu? Hepsi hikaye mi?

EDITORIAL COMMENT
EDİTÖRYAL YORUM

Obesity is the most dreadful pandemic of the 21st century and it is a major threat to cardiovascular (CV) health. Adipose tissue and its distribution in the body play an important role in the development of CV disease (CVD). Metabolic syndrome (MetS) is a pathological condition characterized by abdominal obesity, insulin resistance, hypertension, and hyperlipidemia. Together with obesity, the prevalence of MetS is increasing worldwide every year. Turkish women are the most obese compared to their counterparts when 56 countries in the European Society of Cardiology are taken into account and also abdominal obesity is more prominent in them.[1]

Increased visceral adipose tissue (VAT) is known to play an important role in the development of MetS. MetS is accepted as a systemic manifestation of adipose tissue disease. Epicardial fat (EF) is part of the VAT located around the heart and correlates with intra-abdominal VAT independently and accurately. EF volume is not only associated with coronary artery disease (CAD) but also with vulnerable plaque components, and it may have a role in the development of acute coronary syndromes.[2-7] EF is quantifiable, modifiable and metabolically active and can be considered as an endocrine organ having both local and systemic effects. When EF is enlarged, it increases the risk of CVD and also contributes to the development of MetS. Measurement of EF thickness (EFT) is thought to be an easy and powerful potential diagnostic tool in assessing CV and metabolic risk and also, it can be a therapeutic target.[2,3] Magnetic resonance imaging is now the gold standard for the measurement of EFT and computed tomography (CT) can also be used instead but these are costly and CT requires exposure to radiation. Measuring EFT via two-dimensional transthoracic echocardiography, just like in the current study, is a noninvasive, readily available, accurate inexpensive, and a reproducible technique.[4]

Previous studies have demonstrated a significant correlation between increased EF and all-cause mortality, incident heart failure and stroke, and an inverse association with cardiorespiratory fitness.[8-9]

In the study by Ersan Demirci et al,[10] the effect of weight loss and reversal of MetS on EFT is explored in a group of obese women scheduled for a 1-year weight reduction program, including a personally-arranged diet and exercise. There are 2 major findings of this study; first, the EFT decreased significantly with weight loss, second and may be more important, the decrease in EFT is significantly higher in subjects that reversed MetS with weight loss. The reversal of MetS is also found to be an independent predictor of EFT reduction in this study.

Although significant weight reduction is achieved at 1-year of follow-up, the women in the study group are still in the obese range (Body mass index:

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37.17±5.94 vs. 31.61±5.55 kg/m^2). The women with weight-loss and reversed MetS may be a select group of obese individuals described as the metabolically healthy obese (MHO), characterized by absence of metabolic disturbances and who seemed to be spared from complications of obesity. MHO status is not comparable to metabolically healthy normal weight (MHNW) status and can be categorized as an intermediate group between MHNW and metabolically unhealthy obese.[11] Cumulative data regarding the increased risk of type 2 diabetes and CVD among MHO individuals compared to that in MHNW individuals suggests that MHO is not a benign condition.[12,13]

In summary, the current study offers important insights into the emerging role of weight-loss and EFT reduction in patients with obesity and MetS. This study also reminds us about the gaps of knowledge in EFT, basically the lack of the standardized definitions and upper limits of normal. For the future, it would really be interesting to know if the type of intervention in reducing obesity may modify the amount of EFT and also the role of EFT reduction in the prognosis of patients with MetS and obesity.

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ABBREVIATIONS

CAD	Coronary artery disease
CT	Computed tomography
CV	Cardiovascular
CVD	Cardiovascular disease
EF	Epicardial fat
EFT	Epicardial fat thickness
MetS	Metabolic syndrome
MHNW	Metabolically healthy normal weight
MHO	Metabolically healthy obese
VAT	Visceral adipose tissue