



The relation between epicardial fat thickness and metabolic syndrome

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To the editor

We read the article *Usefulness of the epicardial fat tissue thickness as a diagnostic criterion for geriatric patients with metabolic syndrome* by Kaya, *et al.*^[1] The authors aimed to evaluate the epicardial fat tissue thickness (EFT) as a diagnostic criterion for geriatric patients with metabolic syndrome (MetS). They concluded that EFT levels were higher in geriatric patients with MetS and can therefore be used as a diagnostic criterion for MetS. Thanks to the authors for their good contribution of the present study, which is successfully designed and well-documented.

EFT releases numerous markers which play an important role in MetS. In addition, MetS may be associated with oxidative stress, endothelial dysfunction, and atherosclerosis.^[2,3] Various studies highlighted the importance of EFT in line with inflammatory status in cardiovascular diseases. EFT values are linked to abdominal visceral adiposity and subclinical atherosclerosis, which seems to have high capacity of proinflammatory activity. Furthermore, EFT is also associated with nonalcoholic fatty liver disease, chronic kidney disease, hyperlipidemia, type 2 diabetes, hypertension, smoking, and carotid atherosclerosis.^[4] Moreover, thyroid dysfunction, whether overt or subclinical, has multiple effects on the cardiovascular system. EFT may be a useful marker of subclinical atherosclerosis in patients with subclinical hypothyroidism or overt hypothyroidism.^[5]

After that, many methods can be used for EFT measurements.^[6] Although epicardial fat has three segments, the echocardiography cannot accurately measure the EFT levels because echocardiography measure two segments linearly. In fact, computed tomography (CT) or magnetic resonance imaging (MRI) are the gold standard method in assessing

EFT; so the main limitation of the present study is that it did not perform these methods for EFT measurements. Finally, EFT is highly dependent on acoustic windows. In this point of view, it would be better, if the authors gave interobserver and intraobserver variability for EAT measurement in the current study.^[7]

As a conclusion, although EFT levels were higher in geriatric patients with MetS and can therefore be used as a diagnostic criterion for MetS in present study, one should be kept in mind that EFT measurement and levels can be related to many factors. Rather, no matter how EFT is measured, it gives clinicians important data for assessing patients inflammatory status.^[8] We believe that these findings will be evaluated further studies.

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Authors' reply

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We greatly appreciate the thoughtful comments by Balta, *et al.* on our study, which makes two points: first, the limitation use of transthoracic echocardiography (TTE) in defining epicardial fat tissue thickness (EFTT); and second, EFTT is highly dependent on inter-observer and intra-observer variability. We would like to respond to each of the points delineated by Dr. Balta.

We partially agree with Dr. Balta's comment on the measurement of the EFTT using TTE. More detailed information would be gained by assessing EFTT using computed tomography or magnetic resonance imaging along with TTE, our investigation would perhaps provide deeper insight into the levels of the EFTT for geriatric patients with metabolic syndrome and might add to the value of our manuscript. However, among those techniques, TTE is the simplest method which is easily applicable, reproducible, inexpensive, and does not expose patients to radiation. Besides, several studies have confirmed the validity and reliability of a direct assessment of EFTT by means of TTE.^[1–4]

We also agree with the second point of Dr. Balta. All TTE assessments were performed by the same experienced

cardiologist to prevent inter-observer variabilities. Intra-observer variability for EFTT measurements was < 5%. We should have stated this knowledge in the methods section of our manuscript.

We hope we have addressed the comments raised by Balta, *et al.* and we thank them for their constructive input.

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