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Epicardial adipose tissue and atrial fibrillation: The other side of the coin

To the Editor,

Epicardial adipose tissue, a specialised visceral adipose tissue, produces numerous pro-inflammatory and pro-atherogenic mediators that promote the initiation and progression of coronary atherosclerosis (1). Increased epicardial adipose tissue is related to the presence and angiographic severity of coronary artery disease and coronary plaque vulnerability and independently predicts major adverse cardiovascular events (2). Furthermore, in visceral obesity, the epicardial adipose tissue undergoes conformational and functional changes, leading to the secretin of pro-inflammatory and pro-atherogenic adipokines (e.g., interleukin-6, tumor necrosis factor α, adiponectin, leptin, and plasminogen activator inhibitor) (2), which are involved in a causal relationship between inflammation and atrial fibrillation (3). Consequently, beyond classical cardiovascular risk factors, a causative link between the epicardial adipose tissue and atrial fibrillation has also been suggested because of the structural and functional interplay between atrial fibrillation and the epicardial adipose tissue and the existing evidence of abnormal atrial architecture, adipocyte infiltration, and atrial fibrosis that predispose the myocardial tissue to arrhythmic genesis (4).

In their very interesting and well-conducted clinical research article entitled "An increase in epicardial adipose tissue is strongly associated with carotid intima-media thickness and atherosclerotic plaque, but LDL only with the plaque" recently published in the Anatolian Journal of Cardiology 2017; 17: 56-63, Kocaman et al. (2) emphasized that the epicardial adipose tissue had a stronger association with carotid intima-media thickness than other risk factors. The epicardial adipose tissue has a complex pathophysiological function; potential direct interactions through paracrine or vasocrine mechanisms between the epicardial adipose tissue and myocardium are strongly suggested because of its metabolically active role as a source of several both pro- and anti-inflammatory adipokines (5). Therefore, it is reasonable to assume its additional role in the modulation of biochemical and metabolic triggers leading to atrial fibrillation (5). The association between the epicardial adipose tissue amount and atrial arrhythmia is supported by a consistent body of evidences suggesting a strong relationship; moreover, the presence of other cardiovascular risk factors does not weaken this link, clearly indicating that the epicardial adipose tissue depot can play a role in the complex pathophysiological scenario of atrial fibrillation (5).

Hence, one could hypothesize that the role of epicardial adipose tissue as a novel cardiovascular risk predictor involves both coronary artery disease and atrial fibrillation. Considering that this probable role in providing continuous pro-atherogenic and pro-inflammatory stimuli could be involved in both the initiation and progression of atherosclerosis, in addition to that a modulator in the arrhythmia genesis and as a possible substrate or trigger, this relationship is not clinically negligible and should be considered a very important element in the prevention/management of cardiovascular disease. In conclusion, based on these evidences, we can suggest that the epicardial adipose tissue is a novel and comprehensive surrogate of cardiovascular risk. Therefore, further consensus on the definition and method to assess and quantify the epicardial adipose tissue should be reached; the epicardial adipose tissue can become a therapeutic target, and evaluating the epicardial adipose tissue amount can become a major need, both for the diagnostic work up and for the assessment of therapy response.

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Author`s Reply

To the Editor,

We would like to thank the authors for their comments on our article in their letter entitled "Epicardial adipose tissue and atrial fibrillation: the other side of the coin." published in Anatol J Cardiol 2017; 17: 56-63. (1) epicardial adipose tissue (EAT), a special fat depot that is related to visceral fat rather than total adiposity, shares the same microcirculation with the myocardial tissue and coronary vessels. Recent studies have identified EAT as an active organ, which secretes several mediators, called adipokines, affecting the vascular system. In a prior study, we determined that EAT is associated with diastolic dysfunction and left atrial dilatation because of local or systemic effects in untreated hypertensive patients (2). We also revealed that EAT is an independent factor for adverse changes in the carotid intima-media thickness, flow-mediated dilation, and pulse wave velocity (3). Vascular structure and functions were mainly related to EAT, possibly with perivascular adiposity.

In our opinion, EAT has two main causative roles in atrial fibrillation (AF) development. The first role is the direct local interactions, which predispose the myocardial tissue to arrhythmic genesis due to abnormal atrial architecture, adipocyte infiltration, and atrial fibrosis (4). The second role is the indirect effects on left atrium reflecting from vasculature, which is mainly related to increased blood pressure because of increase in the peripheral vascular resistance after structural and functional impairment in the vascular endothelium (3). The latter mechanism is also a possible driver of the diastolic heart failure and diastolic dysfunction (2) as well as AF. Therefore, as a phrase, "peripheral resistive" may be more reason-oriented than "diastolic" in heart failure with preserved ejection fraction. These roles may be important in the prevention/management of cardiovascular diseases.

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P2Y12 inhibition after thrombotic thrombocytopenic purpura remission

To the Editor,

We read the article entitled "Ticagrelor-associated thrombotic thrombocytopenic purpura" by Doğan et al. (1), which was recently published in the Anatolian Journal of Cardiology, with great interest. It is well known that patients with acute coronary syndrome (ACS) who visit the emergency department have increased rates of recurrent ischemic events. Dual antiplatelet therapy (DAPT) is of importance to reduce these rates; further, DAPT duration after drug-eluting stent (DES) implantation is one the most significant determinant for reducing recurrent ischemic events, including stent thrombosis (2). In your case, DAPT was discontinued 5 weeks after ACS because of ticagrelor-associated thrombotic thrombocytopenic purpura (TTP), and aspirin was used as the only antiplatelet therapy for 6 months. According to the guidelines, DAPT should be administered for at least 12 months after ACS is treated with DES implantation (2). Further, retreatment with P2Y12 after TTP complete remission in ACS can be considered necessary. Reportedly, it is possible to encounter rechallenge with the same P2Y12 inhibitors, leading to TTP after remission. It was indicated that this approach does not induce relapse (3). In addition, in one case, ticlopidine was used instead of clopidogrel because of clopidogrel-linked TTP after TTP complete remission, and no relapse occurred after ticlopidine usage (4). Considering the foregoing data, a group of P2Y12 inhibitors different from ticagrelor could have been used with aspirin after TTP remission in your patient. Thienopyridines have action mechanisms different from those of ticagrelor and can be administered after ticagrelor-linked TTP.