

THE RELATION OF EPICARDIAL FAT THICKNESS, NEUTROPHIL TO LYMPHOCYTE RATIO AND CIRCADIAN RHYTHM OF BLOOD PRESSURE

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Is this issue of the journal, Kim et al.¹⁾ aimed to explain the association between epicardial fat thickness (EFT) and neutrophil to lymphocyte ratio (NLR) as systemic inflammatory markers in hypertensive patients according to diurnal variation of blood pressure (BP). They concluded that EFT and NLR are independently associated with impaired diurnal variation of BP in hypertensive patients.

Recently, epicardial fat tissue has been proposed as a new cardiometabolic risk factor, carrying more risk than subcutaneous fat accumulation.²⁻⁴⁾ Epicardial fat tissue is the true visceral fat deposition of the heart, and active organ that produces several pro-inflammatory and pro-atherogenic cytokines such as angiotensinogen and free fatty acids.⁵⁾ The major difference between epicardial adipose tissue and other visceral adipose tissue is its greater capacity for free fatty acid release.⁶⁾ Elevated plasma free fatty acid concentrations may stimulate cardiac autonomic nervous system activity through an increase in plasma catecholamine concentrations. Therefore, high level of free fatty acid may cause autonomic dysfunction and sympathetic overactivity, both of which are known mechanisms of the nocturnal hypertension may be related to decrease in nocturnal BP fall.^{7,8)} Since, O'Brien et al.⁹⁾ firstly demonstrated the lack of decrease in nocturnal BP, known as non-dipping, is associated with advanced organ damage. In these days, it is well known that the non-dipper BP pattern is associated with increased cardiovascular mortality and cerebrovascular disease.¹⁰⁻¹²⁾ Therefore, the early detection of a non-dipper BP pattern through increased EFT may help identify high-risk individuals for adverse cardiovascular events.

However, there is a small limitation in the present study. The echocardiographic method might not be the optimal tech-

nique for quantification of epicardial tissue. Epicardial adipose tissue has a 3-dimensional distribution and 2-dimensional echocardiographic EFT may not reflect the total epicardial fat volume exactly. Furthermore, echocardiographic EFT cannot give adequate window of all cardiac segments especially in obese subjects and is highly dependent on acoustic windows.¹³⁾ Many methods can be used for EFT measurements and computed tomography or magnetic resonance imaging can be better method in assessing EFT.¹⁴⁾ However, echocardiographic epicardial fat measurement has several advantages, including its low cost, easy accessibility, rapid applicability, and good reproducibility. In the present study, the intra- and inter-observer variabilities of EFT were good.

Recently, the NLR has emerged as a marker for assessing inflammatory status and predicting future cardiovascular risks.¹⁵⁾¹⁶⁾ Although, NLR might be just a marker reflecting the inflammatory process, but recent studies demonstrated the relationship between NLR and cardiovascular risk. And high level of NLR is reported to be associated with the non-dipping BP pattern.¹⁶⁻¹⁸⁾

In the present study, EFT and NLR were increased in patients with non-dipper and there was a correlation between EFT and NLR. And EFT and NLR were independent predictors of the non-dipper BP pattern in hypertensive patients.

As a conclusion, EFT and NLR may provide information to clinicians about the systemic inflammation. So, we believe that these findings will evaluate further studies about EFT and NLR on cardiovascular risks in hypertensive patients.

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