LETTER TO THE EDITOR

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Re: Relationship between mean platelet volume and left ventricular systolic function in patients with metabolic syndrome and ST-elevation myocardial infarction

Dear Editor;

We have read with great interest the recently published report of Yazici et al. [1], which investigates the relationship between mean platelet volume (MPV) and left ventricular systolic function in patients with metabolic syndrome and ST-elevation myocardial infarction. The authors demonstrated that increased MPV on admission can be associated with the degree of left ventricular systolic depression in these patients.

It has been reported that MPV, a measure of platelet size, reflects platelet function and activity [2]. In subjects with established cardiovascular disease, elevated MVP may be a marker for adverse cardiovascular events [3]. In a recent study by Yilmaz et al. [4], higher MPV values were found to be associated with greater risk of having non-ST-elevation acute coronary syndrome and ischemic complications in patients presenting with acute coronary syndrome. Pereg et al. [5] also reported that in patients with ST-elevation myocardial infarction who was treated with thrombolysis, higher MPV values were found to be correlated with thrombolysis failure. Moreover, Huczek et al. [6], found that MVP was an independent predictor of impaired angiographic reperfusion and six-month mortality in patients with ST-elevation myocardial infarction treated with primary percutaneous coronary intervention. The concept of optimal reperfusion must include not only early and sustained epicardial patency but also optimal microvascular flow and tissue reperfusion [7]. Larger platelets with higher MPV may create reperfusion abnormalities through secretion of prothrombotic and vasoconstrictor mediators, such as thromboxane, serotonin and thrombin, and they may also contribute to leukocyte-mediated injury by secreting a variety of inflammatory mediators [8,9].


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On the other hand, metabolic syndrome is associated with an increased risk of cardiovascular disease and a higher incidence of severe heart failure following acute myocardial infarction [10,11]. In a recent study by Zeller et al. [12], the presence of metabolic syndrome was found to be associated with worse in-hospital outcomes and a higher risk of development of severe heart failure.

The coupling of higher MPV (that is, more active platelets) with the prothrombotic and proinflammatory state found in metabolic syndrome can explain the findings of the study by Yazici and coworkers [1]. Metabolic syndrome is highly prevalent in patients with acute ST-elevation myocardial infarction and is known to have a detrimental impact on short term outcome. Therefore, in the light of the findings of this study, in the setting of acute myocardial infarction, patients with metabolic syndrome and high MPV should be evaluated for the presence of left ventricular systolic dysfunction as the authors have demonstrated that increased MPV on admission can be associated with the degree of left ventricular systolic depression in this group of patients.

References


