

Med Princ Pract 2014;23:391–392  
DOI: 10.1159/000358252

### Clinical Outcomes and Inflammatory Markers Should Be Kept in Mind when Assessing the Mean Platelet Volume in Patients with Infective Endocarditis

Uğur Canpolat, Osman Turak, Fırat Özcan, Özcan Özeke, Dursun Aras

Cardiology Clinic, Türkiye Yüksek İhtisas Training and Research Hospital, Ankara, Turkey

Dear Editor,

In a recent issue of your journal, we were grateful to read an interesting article by Icli et al. [1] assessing the mean platelet volume (MPV), which is an indicator of platelet activation in patients with infective endocarditis (IE), and changes in MPV values after antibiotic treatment. They found that the MPV was significantly higher among patients with IE when compared with the control group and that the MPV values of patients with IE decreased significantly with treatment (from  $9.86 \pm 1.1$  to  $7.86 \pm 1.0$  fl,  $p < 0.01$ ). We thank these authors for their complementary contributions to the area of platelet activation in IE patients.

Platelets exhibit intraindividual and interindividual heterogeneity in their size and density. MPV, the most commonly used measure of platelet size, is a simple, inexpensive and widely available marker of platelet reactivity. It has been shown that MPV is associated with various cardiovascular conditions including IE and adverse outcomes [2]. Previous studies with IE patients show that normaliza-

tion of inflammatory markers with antimicrobial therapy is a good predictor of favorable late outcome [3, 4]. In addition, one of the determinants of an adverse outcome in IE is the presence of systemic embolization, particularly cerebral embolization. IE vegetations consist of bacteria, platelets and inflammatory cells in a fibrin mesh. Thus, the results of the current study should be combined and endorsed with clinical outcomes like systemic embolization and correlation with other proinflammatory markers like C-reactive protein [3, 4] and neutrophil-to-lymphocyte ratio [5]. Medications like aspirin which can affect the MPV values should be reported along with the other medications administered to patients.

#### References

- 1 Icli A, Tayyar S, Varol E, et al: Mean platelet volume is increased in infective endocarditis and decreases after treatment. *Med Princ Pract* 2013; 22:270–273.
- 2 Gunebakmaz O, Kaya MG, Kaya EG, et al: Mean platelet volume predicts embolic complications and prognosis in infective endocarditis. *Int J Infect Dis* 2010;14:e982–e985.
- 3 Heiro M, Helenius H, Sundell J, et al: Utility of serum C-reactive protein in assessing the outcome of infective endocarditis. *Eur Heart J* 2005;26: 1873–1881.
- 4 Olaison L, Hogeveik H, Alestig K: Fever, C-reactive protein, and other acute-phase reactants during treatment of infective endocarditis. *Arch Intern Med* 1997;157:885–892.
- 5 Turak O, Ozcan F, Isleyen A, et al: Usefulness of neutrophil-to-lymphocyte ratio to predict in-hospital outcomes in infective endocarditis. *Can J Cardiol* 2013;29:1672–1679.

Uğur Canpolat  
Cardiology Clinic  
Türkiye Yüksek İhtisas Training and Research Hospital  
TR-06100 Sıhhiye, Ankara (Turkey)  
E-Mail [dru\\_canpolat@yahoo.com](mailto:dru_canpolat@yahoo.com)

## Reply

### The Relationship between Mean Platelet Volume, Inflammatory Markers and Clinical Outcomes in Infective Endocarditis

Atilla Icli<sup>a</sup>, Senol Tayyar<sup>b</sup>, Ercan Varol<sup>b</sup>, Fatih Aksoy<sup>b</sup>, Akif Arslan<sup>b</sup>, Ibrahim Ersoy<sup>b</sup>, Selaheddin Akcay<sup>b</sup>

<sup>a</sup>Department of Cardiology, Ahi Evran University Education and Research Hospital, Kirsehir, and

<sup>b</sup>Faculty of Medicine, Suleyman Demirel University, Isparta, Turkey

Dear Editor,

We would like to thank Canpolat et al. for their interest in our article [1]. They pointed out that mean platelet volume (MPV) should be evaluated together with other inflammatory markers and that the results of the current study should be combined and

endorsed with clinical outcomes like systemic embolization. These are indeed valid suggestions. In our study, we did not measure inflammatory markers, but we did exclude inflammatory diseases that could influence MPV such as rheumatic diseases. We also did

not investigate the prognostic value of MPV. We aimed only to assess its diagnostic value and any changes in MPV values after treatment.

In a previous study, Gunebakmaz et al. [2] found that MPV was significantly higher in patients with observed embolic and other complications and death. They presumed that inflammation might cause procoagulant changes in platelet activity and that this inflammation-induced hypercoagulability might lead to embolization, one of the major causes of death. Other studies on patients with infective endocarditis showed that the normalization of inflammatory markers with antimicrobial therapy predicted a favorable outcome regarding surgery and death [3, 4]. Recently, Turak et al. [5] found that a high neutrophil-to-lymphocyte ratio at admission is an independent predictor of in-hospital mortality and nervous system events in patients with infective endocarditis.

We therefore agree that it would be useful to evaluate changes in MPV along with other inflammatory markers as a prognostic indicator of MPV in infective endocarditis.

#### References

- 1 Icli A, Tayyar S, Varol E, et al: Mean platelet volume is increased in infective endocarditis and decreases after treatment. *Med Princ Pract* 2013; 22: 270–273.
- 2 Gunebakmaz O, Kaya MG, Kaya EG, et al: Mean platelet volume predicts embolic complications and prognosis in infective endocarditis. *Int J Infect Dis* 2010; 14: 982–985.
- 3 Heiro M, Helenius H, Sundell J, et al: Utility of serum C-reactive protein in assessing the outcome of infective endocarditis. *Eur Heart J* 2005; 26: 1873–1881.
- 4 Olaison L, Hogevis H, Alestig K: Fever, C-reactive protein, and other acute-phase reactants during treatment of infective endocarditis. *Arch Intern Med* 1997; 157: 885–892.
- 5 Turak O, Ozcan F, İşleyen A, et al: Usefulness of neutrophil-to-lymphocyte ratio to predict in-hospital outcomes in infective endocarditis. *Can J Cardiol* 2013; 29: 1672–1678.

Fatih Aksoy  
Suleyman Demirel Univesitesi Tıp Fakultesi  
Cardiology Department  
TR–32200 Isparta (Turkey)  
E-Mail dr.aksoy@hotmail.com