letters

Mean platelet volume as one part of platelet function determining inflammation

To the Editor: We read the article "Can mean platelet volume and mean platelet volume/platelet count ratio be used as a diagnostic marker for sepsis and systemic inflammatory response syndrome?" by Ates et al.[1] In that very well-designed and well-presented study, Ates and coworkers tried to determine whether the mean platelet volume (MPV) and MPV/platelet count ratio can be used in the study of sepsis and systemic inflammatory response syndrome (SIRS). They concluded that although no significant reduction was observed in the platelet values between patients with sepsis and SIRS, the MPV and MPV/platelet ratio values were found to have significant differences. The ready availability of MPV measurements at no additional cost may encourage its wider use in clinical practice.

A complete blood count is a comparatively routine, cheap, practical, and easy examination method that gives important information about inflammation.[2] MPV, as a part of platelet function, is a widely used laboratory marker associated with coronary artery disease based on inflammatory conditions.[3] At present, increased MPV levels were also demonstrated in atrial fibrillation,[4] cerebrovascular disease, peripheral artery disease, stroke, malignancy, ulcerative colitis and celiac disease, and Behcet disease.[5,6] All these conditions are related to endothelial dysfunction on the basis of inflammation.[7] Also, medications such as aspirin that may affect the MPV values should also be reported with other medications of the patients.[8]

Moreover, the authors did not mention about the type of the tube (ethylenediaminetetraacetic acid [EDTA] or citrate) that contained the sample blood collected. It is well known that MPV increases over time in EDTA-anticoagulated samples. The MPV increases up to 30% within 5 min of exposure to EDTA and increases further by 10%–15% over the next 2 h with impedance technology. So, the optimum time of MPV measurement is about 2 h after blood sample collection in the EDTA tube.[8] Another limitation of the EDTA tube is that EDTA-dependent pseudothrombocytopenia is seen between 0.1% and 0.5% of the general population.[9] This phenomenon is also related to substantial and time-dependent changes in MPV, and must hence be recognized to prevent inappropriate interpretation of spurious platelet size variations. Importantly, EDTA also generates a small shape change and swelling in platelets, so that the MPV measured in citrated blood can differ from that assessed in the EDTA blood of the same donor.

In conclusion, it is believed that the findings of the current study will lead to further studies examining the relationship between MPV and inflammation. However, MPV alone without other inflammatory indicators may not provide enough information about the inflammatory status.[10] It is strongly recommended that MPV should be assessed together with other serum inflammatory markers.

Sevket Balta,[a] Mustafa Aparci,[b] Cengiz Ozturk,[a] Mustafa Demir,[a] Ali Osman Yildirim,[a] Turgay Celik[a]

From the [a]Department of Cardiology, Gulhane Medical Academy, Ankara, Turkey; [b]Department of Cardiology, Haydarpasa Military Hospital, Istanbul, Turkey

Correspondence:
Dr. Sevket Balta,
Department of Cardiology,
Gulhane Medical Faculty,
Ankara 066610, Turkey
T: +90-312-3044281;
F: +90-312-3044250
drsevketb@gmail.com

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