The Mean Platelet Evaluation in Crimean Congo Hemorrhagic Fever

Kırım Kongo Kanamalı Ateşi Hastalarında Ortalama Trombosit Hacmi Değerlendirilmesi

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To the editor:

I read the article published by Ayse Inci with a great interest [1]. They assessed the platelet indices in Crimean Congo hemorrhagic fever (CCHF) patients. Mean platelet volume (MPV) values were higher in patients with CCHF than controls. I congratulate the author for this study which is successfully written. On the other hand, I want to make minor criticism about this study from methodological aspect.

The author screened complete blood counts of patients with CCHF retrospectively. However, they didn't mention about MPV measurement technique. Accurate measurements of platelet count and volume are important for diagnostic, therapeutic, and research purposes. The choice of anticoagulant (ethylenediaminetetraacetic acid (EDTA) or citrate), time interval of measurement, and temperature at which MPV is analyzed are important factors in MPV measurement. The time dependent swelling of platelets in samples anticoagulated with EDTA can result in an artefactual increase of MPV and misinterpretation of prothrombotic changes [2]. In actual daily practice, MPV measurements are performed at room temperature and temperature factor can be neglibible. However, the choice of anticoagulant and time interval of MPV measurement are important issue. MPV increases over time in EDTA-anticoagulated samples and this increase was shown to be proportional with the delay in time between sample collection and laboratory analysis. With impedance counting, the MPV increases over time as platelets swell in EDTA, with increases of 7.9% within 30 min having been reported and an overall increase of 13.4% over 24 h, although the majority of this increase occurs within the first 6 h [2]. Dastjerdi et al. recommended to measure MPV within 1 hour regardless of anticoagulant [3]. Lancé et al. reported that an optimal stability was detected in K2-EDTA after 120 minutes. It is widely accepted that platelet swelling in test tubes can be minimized by rapid processing of samples (within less than 1 h) [3]. For reliable MPV measurement, the potential influence of EDTA anticoagulant on the MPV must be carefully controlled by standardizing the time delay between sampling and analysis.

Secondly, there are significant associations of MPV with many cardiovascular risk factors like smoking, obesity, hypertension, diabetes mellitus, prediabetes, hyperlipidemia, metabolic syndrome, atrial fibrillation and fatty liver disease [4,5]. They didn't mention about these confounding factors. Obesity, smoking, hypertension, diabetes mellitus, hyperlipidemia metabolic syndrome, rhythm status and fatty liver disease increase MPV values [4,5]. It would have been useful if the authors had provided information about these factors.

MPV is universally available with routine blood counts by automated hemograms and a simple and easy method of assessing platelet function. In comparison to smaller ones, larger platelets have more granules, aggregate more rapidly with collagen, have higher thromboxane A2 level and express more glycoprotein Ib and IIb/IIIa receptors [2,4,5]. MPV can be affected by many cardiovascular risk factors. Because of that all confounding factors should be to taken into account. In addition, standardized methods must be used in MPV measurement [6].

References

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