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Mean Platelet Volume Evaluation in Patients with Nasal Polyp: Methodological Drawbacks

Letter to the Editor

Mean Platelet Volume Evaluation in Patients with Nasal Polyp: Methodological Drawbacks

I read the article documented by Cevik et al. with a great interest (1). They assessed mean platelet volume (MPV) values in patients with nasal polyp. MPV values were lower in nasal polyp patients when compared with the control group. This is a well written study. However, there are some methodological drawbacks in the study and I want to draw attention to these methodological drawbacks.

The authors retrospectively screened complete blood counts of nasal polyp patients. However, they did not mention about the MPV measurement technique in detail. Accurate MPV evaluation is important for clinical and research purposes. The type of anticoagulant [ethylenediaminetetraacetic acid (EDTA) or citrate], time interval between blood sampling and MPV analysis, and temperature at which MPV is measured are important factors in MPV measurement.

The platelets swell in EDTA with time and consequently MPV values increase (2). In daily practice, complete blood count measurements are performed at room temperature; as a result, the temperature factor can be negligible. However, the anticoagulant type and the time interval between blood sampling and MPV analysis are important factors. MPV increases over time in EDTA and this increase was proportional with the time delay between blood sampling and MPV analysis. In half an hour, MPV increases 7.9%, and over 24 h, MPV increases overall 13.4% (2). Dastjerdi et al. (3) recommended measuring MPV within 1 h regardless of anticoagulant type. Lancé et al. (2) showed that an optimal stability was detected after 2 h in K2-EDTA anticoagulated samples. Currently, it is widely accepted that platelet swelling in EDTA can be minimized by rapid analysis of samples (within less than 1 h) (3). For accurate MPV measurement, the time delay between blood sampling and MPV analysis must be within 1 h and the time delay must be standard in patients and controls.

Furthermore, many cardiovascular risk factors affect MPV values, such as obesity, hypertension, smoking, hyperlipidemia, diabetes mellitus, prediabetes, atrial fibrillation, metabolic syndrome, fatty liver disease, and rheumatic and inflammatory chronic diseases (4, 5). The authors did not consider the factors of obesity, smoking, hypertension, hyperlipidemia, and diabetes mellitus in patients and controls. It has been shown that smoking, obesity, hyperlipidemia, hypertension, and diabetes mellitus increase MPV values (4, 5). It is clear that these factors should be taken into account in MPV assessment. It would have been better if the authors had presented this information.

MPV is a measurement of the platelet volume that is included within full blood count parameters. When compared with smaller platelets, larger platelets aggregate more rapidly with collagen, have more granules, express more glycoprotein Ib and IIb/IIIa receptors, and have higher thromboxane A2 levels (2, 4, 5). Previous studies have shown that many cardiovascular risk factors and cardiovascular diseases can affect MPV. Thus, all confounding factors should be taken into account. In addition, standardized methods should be used in MPV measurement. If MPV measurement is the main goal in related studies, maximum effort must be directed toward the MPV measurement technique.

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Author's Reply

Dear Editor,

We disagree with the methodological criticism that was made to our article titled "The Comparison of Mean Platelet Volume Values between Patients with Nasal Polyps and Healthy Individuals," which was published in the journal *Turkish Archives of Otolaryngology*. In the planning stage of the study, opinions were received from the biochemistry and hematology departments. The collection, weighing, and evaluation of the samples were performed in the same manner in both groups. Furthermore, the collected samples were stored in tubes with ethylenediaminetetraacetic acid (EDTA) and studied as soon as possible. Information regarding the use of tubes with EDTA in the measurement of mean platelet volume (MPV) values is available either in recent literature (1) or in the references (2, 3) used in this article.

Because the MPV values of patients and healthy individuals were compared in the study, any changes that occurred in these values would be valid for both groups. Moreover, because MPV values of the patients and healthy individuals were evaluated in the same manner, we are in the opinion that the results obtained in this study will not change.

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