Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Primary Care Diabetes 15 (2021) 892

Contents lists available at ScienceDirect

Primary Care Diabetes

journal homepage: http://www.elsevier.com/locate/pcd

Letter to the Editor

Mean platelet volume may not be responsible for increased male mortality in diabetic patients with severe coronavirus disease

Keywords:
COVID-19
Diabetes mellitus
Mean platelet volume
Mortality
Predictive value of tests

Dear Editor,

We have carefully read the retrospective study of Hammad and Alseoudy claiming that they found some laboratory abnormalities that predispose to higher mortality in male patients with diabetes mellitus than female patients with severe Coronavirus disease (COVID-19) [1]. The researchers found lower mean platelet volume (MPV) and higher MPV/lymphocyte ratio in male patients compared to women, blaming these results for the higher male mortality rate. We think that there are other factors that may have negatively affected the results of this study.

Researchers have defined MPV and MPV/lymphocyte ratio as inflammatory markers. However, to date, MPV measurement could not be standardized, and therefore, it has been emphasized that MPV measurements should not be used for purposes such as diagnosis and prognosis in acquired diseases [2]. The main variables affecting the standardization are which anticoagulant is used in the measurement, how long before the MPV measurement the blood was taken, and which blood analyzer is used in the measurement [3,4]. The most commonly used anticoagulant in complete blood count is ethylenediaminetetraacetic acid (EDTA). In the blood tube, the platelets that come into contact with EDTA begin to increase in diameter rapidly and this increase in diameter can reach up to 30% in the first five minutes and up to 40–45% in the first two hours [3]. Various studies have reported the increase in MPV with EDTA contact at rates varying between 2–50% [3,4]. MPV measurement variability has also been reported with other anticoagulants [5]. Lance et al. determined the optimal MPV measurement time for citrate and EDTA as 60 min and 120 min after blood collection, respectively [5]. MPV values change according to the blood analyzers measured, and the deviation in MPV values can develop up to 40% [4]. In this study, there was no explanation about how MPV measurement was made, and the reliability of the obtained MPV data was significantly adversely affected due to the lack of information about the main variables affecting MPV measurement standardization. Moreover, it is not possible to rule out analytical errors in studies where data were obtained retrospectively. In addition, the absence of a healthy control group in this study leads to the inability to understand whether the MPV values obtained in the patient groups are indeed abnormal.

In conclusion, MPV may not be responsible for increased male mortality in diabetic patients with severe COVID-19.

Declarations of interest

None.

References

[1] M.O. Hammad, M.M. Alseoudy, The sex-related discrepancy in laboratory parameters of severe COVID-19 patients with diabetes: a retrospective cohort study, Prim. Care Diabetes (2021), http://dx.doi.org/10.1016/j.pcd.2021.05.002.
[2] P. Noris, F. Melazzini, C.L. Balduini, New roles for mean platelet volume measurement in the clinical practice? Platelets 27 (2016) 607–612, http://dx.doi.org/10.1080/09537104.2016.1224828.
[3] S.R. Jackson, J.M. Carter, Platelet volume: laboratory measurement and clinical application, Blood Rev. 7 (1993) 104–113, http://dx.doi.org/10.1016/s0268-960x(05)80020-7.
[4] C. Beyan, E. Beyan, Were the measurements standardized sufficiently in published studies about mean platelet volume? Blood Coagul. Fibrinolysis 28 (2017) 234–236, http://dx.doi.org/10.1097/MBC.0000000000000586.
[5] M.D. Lancé, R. van Oerle, Y.M. Henskens, M.A. Marcus, Do we need time adjusted mean platelet volume measurements? Lab. Hematol. 16 (2010) 28–31, http://dx.doi.org/10.1532/LH96.10011.

Cengiz Beyan *
Department of Hematology, Ufuk University Faculty of Medicine, Cigdem Mahallesi, 1551. Cadde. Iskent Sitesi, No: 7/7, Cankaya, 06520 Ankara, Turkey

Esin Beyan
University of Health Sciences, Kecioren Training and Research Hospital, Department of Internal Medicine, Ankara, Turkey

* Corresponding author.
E-mail addresses: cengizbeyan@hotmail.com (C. Beyan), esinbeyan@hotmail.com (E. Beyan).

15 May 2021
Available online 2 August 2021

https://doi.org/10.1016/j.pcd.2021.07.014