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Letter to the Editor

Letter to the editor: Is mean platelet volume a diagnostic marker in patients with acute mesenteric ischemia?

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Dear Editor,

We read the review which evaluated the diagnostic accuracy of hematological parameters in patients with acute mesenteric ischemia performed by Khan et al. [1]. The researchers stated that some parameters such as mean platelet volume (MPV) had a high specificity in determining acute mesenteric ischemia. We are concerned that the assessment related to MPV may not be reflecting the truth.

Although the authors initially evaluated 560 articles relating to acute mesenteric ischemia published between 1940 and 2018, only two retrospective studies have evaluated the role of MPV in acute mesenteric ischemia. The retrospective nature of the researches negatively affects the data reliability. As it is well-known that pre- and post-analytical factors are important sources of error in complete blood count measurements, variety of factors, such as clotting in the tube of whole blood, presence of cold agglutinins etc. can lead to differences in complete blood count values. Much more importantly, MPV measurements are still not standardized and therefore it is not accepted to play a role in the diagnosis or prognosis of acquired diseases [2]. MPV is influenced by the time elapsed for measurement after venipuncture, the anticoagulant used and the measuring device. In the present study, the data of the first MPV related reference came from three different centers [3]. Also, the measurement times after venipuncture and the devices used in the measurements were not specified in both of MPV related references [3,4]. We conducted a meta-analysis study showing that published studies on MPV were not sufficiently standardized [5]. The MPV measurements in our study varied up to 27.7% by combining different instruments used plus MPV measurement times after venipuncture.

In conclusion, contrary to the proposal in this study, MPV values may not play a role as a diagnostic marker in patients with acute mesenteric ischemia. There is a need for conducting proper prospective studies to standardize MPV measurement to truly understand whether or not MPV can be used as a diagnostic marker for acute mesenteric ischemia.

Ethical approval

Nothing to declare.

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Conflicts of interest

None.

Author contribution

Cengiz Beyan: Conceptualization, Methodology, Formal Analysis, Investigation, Resources, Writing – Original Draft, Visualization, Supervision.

Esin Beyan: Conceptualization, Methodology, Formal Analysis, Investigation, Writing – Review & Editing, Visualization, Project Administration.

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Cengiz Beyan, Esin Beyan.

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References

[1] S.M. Khan, S.H. Emile, Z. Wang, M.A. Agha, Diagnostic accuracy of hematological parameters in acute mesenteric ischemic-A systematic review, Int. J. Surg. (2019), https://doi.org/10.1016/j.ijsu.2019.04.005.

[2] P. Noris, F. Melazzini, C.L. Balduini, New roles for mean platelet volume measurement in the clinical practice? Platelets 27 (2016) 607–612 https://doi.org/10.1080/

https://doi.org/10.1016/j.ijsu.2019.05.014
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09537104.2016.1224828.
[3] Y. Tanrikulu, C. Sen Tanrikulu, M.Z. Sabuncuoglu, A. Temiz, F. Kokturk, B. Yalcin, Diagnostic utility of the neutrophil-lymphocyte ratio in patients with acute mesenteric ischemia: a retrospective cohort study, Ulus. Travma. Acil. Cerrahi. Derg. 22 (2016) 344–349 https://doi.org/10.5505/tjtes.2015.28235.
[4] R. Aktimur, S. Cetinkunar, K. Yildirim, S.H. Aktimur, M. Ugurlucan, N. Ozlem, Neutrophil-to-lymphocyte ratio as a diagnostic biomarker for the diagnosis of acute mesenteric ischemia, Eur. J. Trauma. Emerg. Surg. 42 (2016) 363–368 https://doi.org/10.1007/s00068-015-0546-4.
[5] C. Beyan, E. Beyan, Were the measurements standardized sufficiently in published studies about mean platelet volume? Blood Coagul. Fibrinolysis 28 (2017) 234–236 https://doi.org/10.1097/MBC.0000000000000586.

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