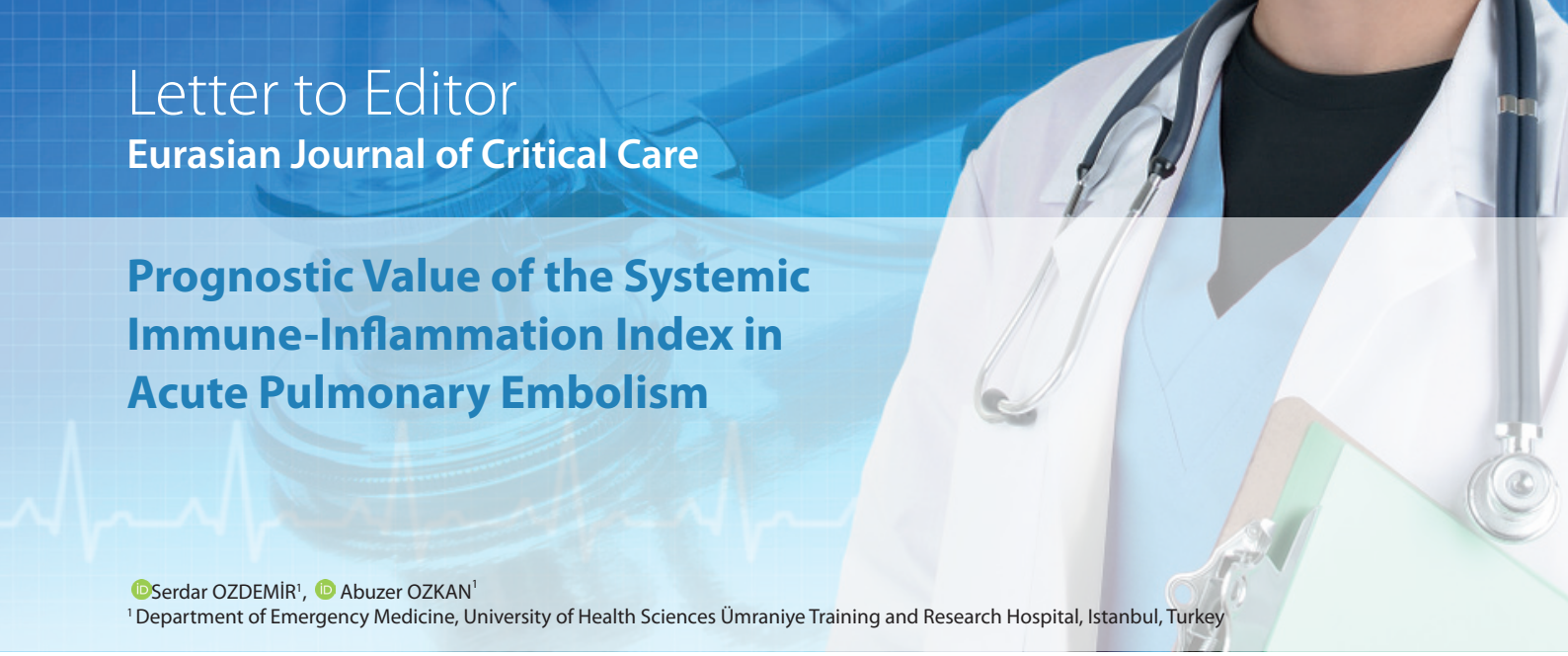
Letter to Editor
Eurasian Journal of Critical Care



# Prognostic Value of the Systemic Immune-Inflammation Index in Acute Pulmonary Embolism

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## Dear editor

We read with interest the research article prepared by Duyan et al. and titled "Is it Possible to Predict High-Risk Patients in Acute Pulmonary Embolism with Systemic Immune-Inflammation Index" published in the last issue of 2022 of your journal. They reported that it is a more valuable biomarker in predicting high-risk acute pulmonary embolism than other combined hematological indices (1). We thank the authors and editorial board for this informative and interesting article.

Different cellular factors that may be important in the pathophysiology and etiology of acute diseases and the information provided by the hematological parameter indices developed as a combination of these factors about the progression of the diseases have been examined in many studies. The knowledge of the level of systemic immune and inflammatory response enables the clinician to evaluate the diseases. It is stated that the systemic immune-inflammation index is a new generation inflammation biomarker created with whole blood parameters (2). In this biomarker, it is a value formed by the product of the neutrophil count and the platelet count multiplied by the lymphocyte count. It is stated that leukocytes, one of the blood components, perform a physiological response to stress in humans and the increase in the amount of this response is manifested by a decrease in the number of lymphocytes. In cases such as inflammation, there is an increase in the number of neutrophils in the blood. The main task of the platelet group in the blood is to maintain the internal balance of the body and the coagulation mechanism (3).

Acute pulmonary thromboembolism is the most serious complication of deep vein thrombi. Although it is seen frequently, it is one of the diseases that are missed in the emergency department more than it is thought. It causes vague, nonspecific symptoms, which is the biggest reason why it is difficult to diagnose. The clinical picture of pulmonary embolism can mimic countless diseases. A noninvasive diagnostic method that proves or definitively excludes the diagnosis has not been developed yet. Missing the diagnosis of pulmonary embolism during the patient's admission to the emergency department increases mortality 5 times more. It is vital to recognize and prognosticate high-risk acute pulmonary embolism in the emergency department (4). Therefore, it is vital to recognize and prognosticate high-risk acute pulmonary embolism in the emergency department. Current literature is the recommended severity index of pulmonary embolism severity index (PESI), sPESI and gPESI to identify high-risk patients (5).

In the aforementioned study, combined hematological indices were significantly increased in high-risk patients with acute pulmonary embolism according to univariate test results. Secondly, they performed receiver operating characteristic analysis to test and compare the abilities of combined hematological indices to predict high-risk acute pulmonary embolism. The authors found areas under the curve for neutrophil to lymphocyte ratio, platelet to lymphocyte ratio, monocyte to lymphocyte ratio, erythrocyte distribution width to lymphocyte ratio, and systemic immune inflammation index 0.78, 0.77, 0.76, 0.68, and 0.84, respectively (1). The authors provide useful information by demonstrating that the systemic immune-inflammation index can predict the high-risk acute pulmonary embolism. We congratulate them.

## References

1. Duyan M, Sarıdaş A, Vural N. Is it Possible to Predict High-Risk Patients in Acute Pulmonary Embolism with Systemic Immune-Inflammation Index? Eurasian Journal of Critical Care. 2022; 4(3): 101-105.

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**2.** Özdemir S, Altunok İ, Özkan A et al. The role of the hematological inflammatory index and systemic immuno-inflammation index in acute cholecystitis. Eur J Clin Exp Med. 2022;20(3):330–335. doi: 10.15584/ejcem.2022.3.11.

**3.** Öcal L, Keskin M, Cerşit S, et al. Systemic immune-inflammation index predicts in-hospital and long-term outcomes in patients with ST-segment elevation myocardial infarction. Coron Artery Dis. 2022;33(4):251–260.

**4.** Ünlüer EE, Denizbaşı A. Pulmoner emboli olgularında tedavi ve yaklaşım. Solunum Hastalıkları 2002; 13: 67-72.

**5.** Akça HŞ, Özdemir S, Algın A, Altunok İ. Comparison of geriatric pulmonary embolism severity index (G-PESI) with PESI and s-PESI in predicting prognosis and mortality. J Health Sci Med 2022; 5(2): 676-681.