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Authors: Sergii Nasheda, Alla Navolokina, Ivanna Hrytsan

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[LETTER TO THE EDITOR]

BIOMARKERS LEVELS INDICATE COVID-19 SEVERITY AND FATALITY

[Short title: Role of biomarkers in COVID-19]

Sergii Nasheda, Alla Navolokina, Ivanna Hrytsan

European School of Medicine, International European University, Kyiv, Ukraine

ADDRESS FOR CORRESPONDENCE:

Alla Navolokina, European School of Medicine, International European University,
Akademika Hlushkova Ave, 42B, Kyiv, Ukraine, phone: +380673772377, e-mail:
allanavolokina@ie.u.edu.pl

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To the Editor,

we read with great interest the article by Kilic and Dalkilinc Hokenek concerning to association between D-dimer levels and COVID-19 patients' mortality [1]. Since December 2019, a new coronavirus known as SARS-CoV-2 has produced a global outbreak of respiratory sickness known as coronavirus disease 2019 (COVID-19), which is still spreading rapidly. By the end of January 2023, there will have been over 668.8 million verified COVID-19 patients globally.

Understanding the fluctuation and profile of various biomarkers as a function of different COVID-19 outcomes would assist in the creation of a risk-stratified strategy for the management of individuals with this condition [2, 3]. One area of scientific interest is the thrombosis reported with this rare viral pneumonia. Unlike patients with community-acquired pneumonia, the COVID-19 patient appears to have an increased thrombotic reaction to the virus. The presence and severity of microthrombosis in these individuals have been linked to worse outcomes [4, 5]. D-dimer, a fibrin breakdown product, is well established as an indirect measure of thrombotic activity in venous thromboembolism (VTE) population risk assessment. Furthermore, D-dimer has been demonstrated to be raised in various hypercoagulable situations such as cancer, sepsis, pregnancy, and the postoperative period. D-dimer has been recognized as a helpful prognostic marker in this patient group, with the suspicion of thrombosis in COVID-19 patients adding to disease severity and as a driving element of the respiratory illnesses observed in this disease process.

Elevated D-dimer levels have been found to be one of the most prevalent test results in COVID-19 patients requiring hospitalization. Kilic and Dalkilinc Hokenek indicate that patients with high D-dimer levels had higher in-hospital mortality rates. It is worth emphasizing here that [1] Zhang et al. [6] showed that D-dimer levels larger than 2.0 g/mL on admission (a fourfold rise) might successfully predict in-hospital mortality in COVID-19 patients, indicating that D-dimer could be an early and useful marker to enhance COVID-19 patient care.

With the global increase in COVID-19 cases due to its highly infectious nature, various research has reported on also other predictors of illness severity in COVID-19 patients.

According to studies, severe or fatal cases of COVID-19 disease are linked to an increased white cell count, creatinine, interleukin-6 (IL-6), C reactive protein (CRP), lactate

dehydrogenase, blood urea nitrogen, markers of liver and kidney function as well as albumin levels, when compared to milder cases where survival is the outcome [7–10]. These studies provided an early insight into the impact of SARS-CoV-2 infection, although the conclusions cannot be generalized in many situations due to geographical limits, single-center experience, and small cohorts.

In view of the above, it was critical to establish a worldwide database on the clinical parameters of COVID-19 patients, from which multivariate data analyses could be done.

Conflict of interest

None declared.

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