LETTER TO THE EDITOR

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Chosen laboratory markers as a determinant of COVID-19 severity

Ihor Navolokin[1], Oleksandra Tuboltseva[1], Alla Navolokina[2]

[1]School of Medicine, International European University, Kyiv, Ukraine
[2]Department of Public Health and Social Medicine, International European University, Kyiv, Ukraine

We read with great attention the article by Fialek et al. [1] titled "Diagnostic value of lactate dehydrogenase in COVID-19: A systematic review and meta-analysis" in which the authors try to define the relationship between lactate dehydrogenase (LDH) values as a predictor of coronavirus disease 2019 (COVID-19) severity. According to available research, this is the largest meta-analysis in this field throughout the world. Since December 2019, when the first mention of the new severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) appeared, the world has been struggling with the new COVID-19 disease, which has taken the form of a global pandemic [2, 3]. Even though vaccines are now available, COVID-19 should still be considered a highly contagious disease, as we never know whether its subsequent mutations will pose a potential risk of their failure to work. We must also remember that vaccination does not protect against infection, but only prevents a severe course, so this virus will continue to spread throughout society [4]. Searching for markers that are able to identify patients at high risk of severe disease and/or death due to COVID-19 in a fast and highly predictable manner is a key element of screening [5, 6]. An important issue is also the development of effective methods of predicting complications in long-COVID-19 syndromes as well as those with which patients will be exposed as post-COVID-19 syndrome. As a result, the medical staff is able to implement specialist treatment already at the initial stage of treatment of these patients, which is to prevent

the progression of the patient to a serious condition [7]. The currently available meta-analyzes indicate the potential importance of various markers, however, it is necessary to conduct extensive research as well as research of new markers, the sensitivity and specificity of which will be as high as possible. Meta-analysis performed by Fialek et al. [1] showed that elevated LDH was associated with a poor outcome in COVID-19. It should be kept in mind that therapy and medications used for treatment may affect the levels of markers in patients — this is a possible limitation that the authors of the meta-analysis did not address. How the currently utilized medication groups in COVID-19 affect the changes in concentrations of specific markers is one of the aspects that should be taken into consideration and in the context of which research should be conducted. This will allow us to adapt the prediction scales as precisely as possible. It is worth emphasizing here, that typical cardiac biomarkers are also of great importance in predicting the severity of a patient with COVID-19. An example is the confirmed predictive value of cytokines, including interleukin 6 [8], D-dimers, high-sensitivity troponin I [9] or creatine kinase--MB [10]. However, the use of biomarkers that have not been routinely used in medical practice so far should also be considered, and whose accuracy and functions will also provide us with insight into the pathogenesis of COVID-19 — an example is mid-regional pro-adrenomedullin and its function showing endothelial damage. Due to the high costs of this determination, they are not routinely per-

formed, but the reduction of costs and work on the cheapest tests consisting in marking markers will bring us closer to detailed diagnostics and possible complications, which will enable identification at the stage of their early beginnings.

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