

Determination of risk in SARS-CoV-2 infection

SARS-CoV-2 enfeksiyonunda risk belirlenmesi

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Dear Editor,

SARS-CoV-2 was first identified at the end of 2019. A pandemic was declared by the World Health Organization (WHO) on March 11, 2020. The additional burden of the pandemic on the health system around the world has affected the social, economic and health behaviors of the society (1). Risk scores were developed for the effective use of the health system and the recognition of the disease by the clinician (2). In this article, we planned a brief overview of the new scoring systems developed.

Demographic data and laboratory parameters were sought first to determine the risk. Advanced age, lymphopenia, D-dimer, ferritin, C-reactive protein was defined as independent variables for poor outcome (3). Weng et al. developed the ANDC score based on age, lymphopenia, D-dimer, ferritin, C-reactive protein using the LASSO analysis method. They reported the ANDC score as a good predictor of short-term mortality with the area under the curve of 0.921 (4).

MuLBSTA score was developed by Guo et al. for predicting mortality risk in patients with viral pneumonia in December 2019. This score is based on multilobar infiltration, lymphopenia, bacterial coinfection, smoking history, hypertension, and age. Guo et al. reported that this score has a strong predictive ability for 90-day mortality in patients with viral pneumonia (5). García Clemente et al. tested the ability of MuLBSTA score to predict intensive care unit (ICU) admission in patients with SARS-CoV-2 infection and showed that this score is a good predictor of ICU admission (6).

Fumagalli et al. retrospectively analyzed data from 512 patients to develop a clinical risk score to predict in-hospital mortality in patients infected with SARS-CoV-2. According to the results of their study, tertiles of increasing age, number of chronic diseases, respiratory rate, PaO₂/FiO₂, serum creatinine and platelet count were found as

predictors of mortality. Based on these variables, they defined the COVID-19MRS score as a predictor of in-hospital mortality with the area under the curve of 0.921 (7).

Torres-Macho et al. retrospectively evaluated the data of 1968 patients to develop a model that could predict in-hospital mortality. As a result of the study, they named the score that calculated using age, oxygen saturation, smoking, serum creatinine, lymphocytes, hemoglobin, platelets, C-reactive protein, and sodium as PANDEMYC score. PANDEMYC score was reported as easily applicable predictive model for in hospital mortality with the area under the curve of 0.865 (8).

As a result, the researchers developed scores such as the ANDC score, MuLBSTA Score, COVID-19MRS score, and PANDEMYC score to contribute to the management of the pandemic. However, the changes in virulence of SARS-CoV-2 with the mutations, the increase in the experience of clinicians and the widespread usage of Covid-19 vaccination and immunization cause these scoring systems to be questioned. As the authors, we believe that these scores, which were developed in the early period of the pandemic, should be revalidated in the current situation.

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