


Evaluation of D-dimer Level in Patients with Pulmonary Thromboembolism Accompanied by SARS-Cov-2 Infection

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Dear Editor;

We read with interest your articles in the first issue of 2022 of the dear editor's journal, in which the experiences of patients with pulmonary embolism in the emergency department were shared. We would like to thank Bilir et al. and Örün et al. for these interesting articles (1,2). On the other hand, we would like to point out a few points about the evaluation of D-dimer level in patients with pulmonary thromboembolism accompanied by SARS-CoV-2 infection, which may be useful in the post-pandemic period.

In cases of pulmonary thromboembolism, leukocytosis, increase in serum lactate dehydrogenase and aspartate transaminase levels, increase in C-reactive protein and sedimentation rate can be detected. However, these findings are not specific for pulmonary thromboembolism. D-Dimer level can increase up to 8 times in pulmonary thromboembolism cases. The sensitivity of D-Dimer level in detecting pulmonary thromboembolism is reported to be 97-100% above 500 ng/ml. D-Dimer tests have a low sensitivity rate of 35-45% (3). Surgical intervention, trauma, kidney diseases, malignancies, severe infections, systemic lupus erythematosus, pregnancy, etc. In some cases, the test may be positive. D-dimer negativity is used to exclude pulmonary thromboembolism, especially in outpatients with low and moderate clinical probability without comorbidities (4).

Patients with SARS-CoV-2 infection have increased inflammatory markers such as lymphopenia, elevated lactate dehydrogenase, elevated C-reactive protein, D-dimer, ferritin, and interleukin-6 (IL-6). It has been stated that high IL-6 level is significant in terms of disease severity and procoagulation (5). Thrombocytopenia and D-dimer elevation were found to be significant in terms of intensive care admission, mechanical ventilator requirement and mortality (6). Elderly patients with comorbidities were associated with higher D-dimer values and severe SARS-

CoV-2 infection(5). In a retrospective study, Okşaşoğlu grouped the sample of hospitalized patients with SARS-CoV-2 infection into groups with and without pulmonary thromboembolism. The mean D-Dimer level was 530±46 mcg/L in the patients with SARs-CoV-2 infection without pulmonary thromboembolism and 2880±2710 mcg/L in the patients with SARs-CoV-2 infection with pulmonary thromboembolism (7). In a cohort study of 974 patients by Ooi et al., a D-dimer value of 2247 mcg/L was found to provide a sensitivity and specificity of 72% and 74%, respectively, for the development of pulmonary thromboembolism in SARS-CoV-2 infected patients (8). Leonard-Lorant et al. showed the cut-off value of D-dimer levels to be 2660 mcg/L to predict pulmonary thromboembolism in SARS-CoV-2 infected patients (9).

As a conclusion, D-dimer values above 500 mcg/L are used by many clinics in patients with suspected pulmonary thromboembolism at moderate risk of management. In the management of SARS-CoV-2 infected patients, higher cut-off values for D-dimer should be used in the presence of clinical suspicion of pulmonary thromboembolism.

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