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Cut-off value of D-dimer in pulmonary thromboembolism and pneumonia

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Abstract: Aim: The differential diagnosis of pulmonary thromboembolism (PTE) and pneumonia remains difficult in emergency rooms. High D-dimer levels in the pneumonia may be misdiagnosed as PTE on the basis of similar clinical, radiological, and laboratory findings. Since D-dimer elevation may also be seen in pneumonia cases, the comparison of D-dimer values in patients diagnosed as pneumonia and PTE, in order to determine a cut-off value between the 2 diseases, was aimed in this study. Materials and methods: Patients in the community acquired pneumonia (CAP) group were classified according to the American Thoracic Society (ATS) 2001 criteria. Groups III and IV patients, who were hospitalized, were included in the study. The final CAP group consisted of 52 patients (30 in Group IIIa, 15 in Group IIIb, 2 in Group IVa, and 5 in Group IVb) and 68 patients with a diagnosis of PTE. All patients’ D-dimer levels in the first day were recorded. Results: Mean D-dimer levels of the PTE and pneumonia group were 4868 ng/mL and 2068 ng/mL, respectively ($P < 0.001$). Cut-off value was 4374 ng/mL. Mean levels of D-dimer in the massive PTE group and sub-massive PTE group were 5438 ng/mL and 4175 ng/mL,respectively, ($P = 0.04$). Conclusion: Elevation of D-dimer is more significant in PTE than pneumonia. As a result, if D-dimer level is higher than 4374 ng/mL, the patient should be evaluated for the diagnosis of PTE. A cut-off value of 4374 ng/mL will help the discrimination of PTE and pneumonia.

Key words: Pneumonia, pulmonary embolism, D-dimer, cut-off value

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