

The Relationship between the Results of Coagulation Profile and Severity of Pulmonary Involvement in COVID-19 Patients

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Abstract:

Introduction: COVID-19 is currently a global pandemic, and coagulation-related mortality has been widely reported in patients suffering from it. **Objective:** this article aimed to investigate the coagulation profile of COVID-19 patients. **Methods:** This was a cross-sectional study conducted using a retrospective research design. We recruited patients with COVID-19 admitted to a hospital from June 15th to July 7th, 2020. Upon patients' entering a blood sample was drawn from each patient for assessing patient's coagulation profile (PT, PTT, INR, Platelet count); and a chest high-resolution computed tomography (HRCT) scan was performed for each patient. The study patients were divided into severe group (CO-RADS score 5) and non-severe group (CO-RADS score <5). **Results:** Thirty-six patients (20 males and 16 females) with a mean age of 54.7 ± 17.5 years were studied. Of them, 11 cases (30.56%) had severe pulmonary involvement. Also, the coagulation profiles were longer in the severe group than non-severe group. As well, the means of platelet count that were 232.440 per microliter in the non-severe group and 289.180 per microliter in the severe and non-severe groups, respectively; but still not statistically significant ($p > 0.05$). The Area under the ROC Curve (AUC) for PT and INR was 0.615 and 0.611, respectively. The AUC for platelet count was 0.680 (95% CI: 0.501 to 0.859) and had an acceptable discriminating power. **Conclusions:** In this study, we did not find any statistically significant relationship between the results of coagulation tests and the severity of pulmonary involvement according to HRCT scan findings in COVID-19 patients. But further analyses suggest that, except PTT, the other coagulation tests (PT, INR, and platelet count) may discriminate severe COVID-19 patients.

Keywords: Blood Coagulation; COVID-19; Lung; Severity of Illness Index