Category :**Respiratory: other**

A126 - *Routine d-dimer assessment for the prediction of pulmonary embolism in patients with covid-19 pneumonia in the icu*

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Introduction

Pulmonary embolism (PE) is a common complication of the coronavirus disease 2019 (COVID-19) and is associated with an increased mortality risk in hospitalized patients[1]. We conducted this study to assess the specificity of an elevated absolute D-dimer for PE in COVID-19 patients admitted to the ICU, as well as the specificity of a D-dimer increment in COVID-19 patients who developed PE during ICU-stay.

Methods

We conducted a case-control study in patients with COVID-19 pneumonia admitted to our ICU. D-dimer values were paired with results of CT pulmonary angiograms (CTPA), and compared in patients with and without PE on admission. In patients without PE on initial imaging and available follow-up CTPA during ICU-stay, the D-dimer increment between initial and follow-up imaging was calculated. Patients that developed PE during ICU-stay were compared with those with persistently no PE.

Results

Of 124 patients, CTPA on admission was performed in 100, and PE was diagnosed in 22. D-dimer values were elevated in both groups, but more in those with proven PE (median 6060, IQR 1105-16600 vs 850, IQR 492-1570 µg/L; $p<0.0001$). Using the standard cut-off value of 500 µg/L, specificity was 27.3%, which increased to 100.0% when an adjusted cut-off value of 9000 µg/L was used.

In 38 patients without PE on initial CTPA, follow-up imaging was obtained during ICU-stay; PE was diagnosed in 21, increasing the overall incidence of PE in COVID-19 patients in our ICU to 34.7%. Patients that developed PE during ICU-stay, showed a higher D-dimer increase than those who remained PE negative(median 8890 IQR 5640-19000 vs 4970 IQR 1970-7803 µg/L; P<0.01). Using a cut-off value of >8000 µg/L for delta D-dimer, specificity was 100% in our study population.

Conclusions

When adjusted cut-off values are used, routine measurement of D-dimer might aid clinicians in diagnosing pulmonary embolism in patients with COVID-19 pneumonia admitted to the ICU.

References

1. Van den Berg et al. J. Crit. Care 64:18-21, 2021