P1680 INFLUENCE OF D-DIMERS ON THROMBOEMBOLIC RISK IN PATIENTS WITH SARS-COV-2 IN AN INTENSIVE CARE UNIT

Topic: 34. Thrombosis and vascular biology - Biology & Translational Research

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Background:

Patients with COVID-19 have a higher incidence of thromboembolic events (TE) probably due to endothelial injury caused by the binding of SARS-CoV-2 to the ACE-2 receptors. The current literature showed that these patients have a tendency to a procoagulation state, and D-dimers (D-d) may be a global marker of hemostasis activation. In this way, the increase in D-d levels prompted the need to assess them at hospital admission and start anticoagulation (AC) prophylaxis, especially in intensive care unit (ICU) hospitalizations. Further, there is no consensus about the levels of D-d that could predict new TE.

Aims:

This study intends to determine whether D-d levels at hospital admission are related with an increased risk for TE during ICU hospitalization and determine an eventual cut-off level that could predict the risk of these events.

Methods:

Retrospective, observational, single-center study of patients with an established diagnosis of COVID-19, who underwent hospitalization in the ICU of a tertiary care hospital between December 2020 and January 2021. Clinical, analytical and demographic data were collected through clinical medical records. The data analysis was executed using IBM SPSS Statistics 28. To evaluate the predictive value of D-d on TE risk and survival in patients at ICU admission, a logistic regression and a ROC analysis were performed.

Results:

A total of 116 patients were included, 38 (32.8%) females and 78 (67.2%) males, with a median age of 62 (27-86) years old, 15 (12.9%) of them with a previous AC therapy. The mean number of days spent in the ICU was 16 (13-18) days. Out of the 116 patients, 46 (39.7%) patients passed away during ICU stay and 17 (14.7%) patients presented with thromboembolic events (2 of them with 2 TE). Out of the 19 total TE, there were 8 (42.1%) deep vein thrombosis, 3 (15.8%) pulmonary embolisms, 3 (15.8%) arterial strokes, 3 (15.8%) upper limb infarctions and 1 (5.3%) myocardial infarction. The logistic regression model shows that the D-d levels at ICU admission are statistically significant on the likelihood to have TE (χ²(2)=9.089, p=.011). The model explained 13.9% (Nagelkerke R²) of the variance in TE and correctly classified 86.1% of cases. Increasing levels of D-d at an ICU admission were associated with a slightly increased likelihood of exhibiting those events (relative risk=1.000051750). Another logistic regression was performed to evaluate whether D-d levels at ICU admission influenced prognosis (survivor vs non-survivor), however we didn’t find any differences statistically significant (p=0.727). Furthermore, the ROC analysis
executed to determine the cut-off D-d level at ICU admission that would better predict the TE determined a value of 763.5 ng/mL with a sensibility of 76.5% and a specificity of 63.7%.

**Summary/Conclusion:**

D-d levels at ICU admission are a risk factor to account for on the likelihood of future TE on COVID-19 patients, although the relative risk is low. Despite the lack of consensus for predicting D-d levels, our results suggest that D-d values, at ICU admission, can be predictive of future TE. In spite of this finding, D-d levels at admission are not correlated to survival. At the moment, despite AC therapy during ICU stay, there were still patients with TE, which means that the current prophylaxis isn’t totally effective. Further investigation is needed to establish criteria for an upgraded AC, for a lower ICU stay time and to improve the prognosis.