

Biomarkers intra-hospital (IL-6, CRP and D-dimer) of post-COVID-19 depression.

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Introduction: Cognitive and neuropsychiatric impairment persisting months after acute SARS-CoV-2 infection has been described.

Objectives: Evaluate the role of the main inflammatory biomarkers (IL-6, CRP and D-dimer) as a risk factor for post-COVID-19 depression.

Methods: In this prospective cohort study, between June and August 2020, we collected laboratory (IL-6, CRP and D-dimer) from 273 hospitalized patients with COVID-19. After hospital discharge, 74 patients were followed up for 30 – 45 days. We divided them into depressive (28) and non-depressive (46), based on a score on the Beck Depression Inventory.

Results: 74 patients [median age: 56 (45-68) years] were stratified depressive (28) and non-depressive (46). Seven patients (9.4%) were admitted to the intensive care unit.

In univariate logistic regression (corrected by comorbidities), the biomarkers represented related independent risk factors for depression post-COVID-19: age > 56 years (odds ratio [OR]: 4.26; 95% confidence interval [CI 1.59 – 12.3]; p = 0.005) and D-dimer > 730 ng/mL (OR: 5.16; [CI 1.91 – 15.1]; p = 0.0017). The multivariate logistic regression (age > 60 years, sex, diabetes, obesity, and hypertension) revealed correlation between D-

dimer > 730 ng/mL and post-COVID-19 (OR: 5.55; [CI 1.53 – 23.9]; p = 0.017). IL-6 (OR: 1.00; [CI 0.99 – 1.01]; p = 0.732) and CRP (OR: 0.99; [CI 0.99 – 1.01]; p = 0.716) did not correlate with COVID-19 depression.

Conclusion: We conclude that D-dimer > 730 ng/mL measured at hospital admission was an independent risk factor for depression in patients with Covid-19. This should be considered when using the plasma D-dimer level as a screening tool or prognostic indicator for post-COVID-19 depression.