

Atrial fibrillation incidence in SARS-CoV-2 infected patients: predictors and relationship with in-hospital mortality

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Funding Acknowledgement: Type of funding sources: Public hospital(s). Main funding source(s): ASST GOM Niguarda Ca' Granda, Milan, Italy

Background: Among the different CardioVascular (CV) manifestation of the COroNaVirus-related Disease (COVID) particular attention has been paid to arrhythmia and particularly to Atrial fibrillation (AF). The aim of our study was to assess the incidence of AF episodes in patients hospitalized for COVID and to evaluate its predictors and its relationship with in-hospital all-cause mortality.

Methods: We enrolled 3435 cases of SARS-CoV2 infection admitted in four hospitals in Northern Italy. We collected data on clinical history, vital signs, Intensive Care Unit (ICU) admission, laboratory tests and pharmacological treatment. AF incident and all-cause in-hospital mortality were considered as outcomes.

Results: 145 (4.2%) patients develop AF during hospitalization, with a median time of 3 days (IQR: 0, 11.5) from admission. Incident AF patients were older and had lower eGFR, lower platelet and lymphocytes count

and higher C-Reactive Protein (CRP), were admitted more frequently to ICU and more frequently died compared to subjects that didn't present AF. At the Cox regression model significant determinants of incident AF were older age (HR 1.070; 95% CI: 1.048, 1.092), history of AF (HR 2.800; 95% CI: 1.465, 5.351), ischemic heart disease (HR 0.324; 95% CI: 0.130, 0.811) and ICU admission (HR 8.030; 95% CI: 4.511, 14.292). Incident AF was a predictor of all-cause mortality (HR 1.679; 95% CI: 1.170, 2.410), together with age (HR 1.053; 95% CI: 1.042, 1.065), dementia (HR 1.553; 95% CI 1.151, 2.095), platelet count (HR 0.997; 95% CI: 0.996, 0.999) higher CRP (HR 1.004; 95% CI: 1.003, 1.005) and eGFR (HR: 0.991; 95% CI: 0.986, 0.996)

Conclusion: AF present as the main arrhythmia in COVID-19 patients and its development during the hospitalization strongly relates with in-hospital mortality.