

Atrial fibrillation and COVID-19 in older patients: a complex, dangerous, association. An analysis of the GeroCovid Registry

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OnBehalf: the GeroCovid Investigators

Introduction. Atrial fibrillation (AF) is the most frequent arrhythmia diagnosed in elderly patients. It often associates with disabling complications, such as stroke and systemic embolism. COVID-19 severely affects older subjects, who show a particularly high mortality, often related to relevant alterations in coagulation and inflammation cascade.

Purpose. Aim of this study was to evaluate how the presence of a prevalent form of AF (at admission or in clinical history) influenced the clinical course of COVID-19 in an aged in-hospital population.

Methods. We studied the acute patients included in GeroCovid, a multicenter retrospective-prospective registry designed by the Italian Society of Gerontology and Geriatric Medicine and the Norwegian Geriatrics Society. GeroCovid, independently of the healthcare setting and without exclusion criteria, enrolled subjects aged >60 years to analyze risk factors, signs, symptoms and outcomes of COVID-19 in older people. For the purpose of this study, only the acute, in-hospital, cohort was evaluated.

Results. Between March 1st and June 6th 2020, 2474 patients were enrolled in GeroCovid. Of these, 806 (32.6%) were assisted in hospital, for an acute condition (age: 79 ± 9 years; men: 51.7%). The prevalence of AF was 21.8%. Patients with the arrhythmia were older (82 ± 8 vs. 77 ± 9 years; $p < 0.001$) and with a higher CHA₂DS₂-VASc score (4.1 ± 1.5 vs. 3.2 ± 1.5 ; $p < 0.001$). The prevalence of almost all comorbidities was higher in AF patients (in particular, hypertension, cardiac diseases, diabetes, heart failure, peripheral artery disease, chronic renal failure, COPD, stroke, obesity). At multivariable analysis, advanced age ($p = 0.010$), an increased number of white blood cells ($p = 0.031$), the presence of cardiac diseases ($p < 0.001$), peripheral artery disease ($p = 0.030$) and of signs or symptoms of heart failure ($p = 0.003$) characterized older patients with AF. In-hospital mortality was significantly higher in patients with the arrhythmia (36.9 vs. 27.5%; OR = 1.55, 95%CI = 1.09-2.20; $p = 0.015$). A multivariable logistic regression model showed that AF was an independent predictor of mortality ($p = 0.021$), such as male gender ($p = 0.014$) and the presence of peripheral artery disease ($p = 0.003$). COPD, stroke, chronic renal failure, diabetes and obesity were deleted from the final model.

Conclusions. AF is frequently observed in older patients with COVID-19. Subjects with both conditions have a more complex clinical status and show a higher in-hospital mortality, thus requesting a particularly careful and intensive management.