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RESEARCH AREA: EPIDEMIOLOGY

TITLE: Age and Multimorbidity Predict Death Among COVID-19 Patients: Results of the SARS-RAS Study of the Italian Society of Hypertension.

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UNIVPM Research Group: Clinica di Medicina Interna e Geriatria INRCA

Research activity description: Several factors have been proposed to explain the high death rate of the coronavirus disease 2019 (COVID-19) outbreak, including hypertension and hypertension-related treatment with Renin Angiotensin System inhibitors. Also, age and multimorbidity might be confounders. No sufficient data are available to demonstrate their independent role. We designed a cross-sectional, observational, multicenter, nationwide survey in Italy to verify whether renin-angiotensin system inhibitors are related to COVID-19 severe outcomes. We analyzed information from Italian patients diagnosed with COVID-19, admitted in 26 hospitals. One thousand five hundred ninety-one charts (male, 64.1%; 66 ± 0.4 years) were recorded. At least 1 preexisting condition was observed in 73.4% of patients, with hypertension being the most represented (54.9%). One hundred eighty-eight deaths were recorded (11.8%; mean age, 79.6 ± 0.9 years). In nonsurvivors, older age, hypertension, diabetes mellitus, chronic obstructive pulmonary disease, chronic kidney disease, coronary artery diseases, and heart failure were more represented than in survivors.

The Charlson Comorbidity Index was significantly higher in nonsurvivors compared with survivors (4.3 ± 0.15 versus 2.6 ± 0.05 ; $P < 0.001$). ACE (angiotensin-converting enzyme) inhibitors, diuretics, and β -blockers were more frequently used in nonsurvivors than in survivors.



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After correction by multivariate analysis, only age ($P=0.0001$), diabetes mellitus ($P=0.004$), chronic obstructive pulmonary disease ($P=0.011$), and chronic kidney disease ($P=0.004$) but not hypertension predicted mortality. Charlson Comorbidity Index, which cumulates age and comorbidities, predicts mortality with an exponential increase in the odds ratio by each point of score. In the COVID-19 outbreak, mortality is predicted by age and the presence of comorbidities. Our data do not support a significant interference of hypertension and antihypertensive therapy on COVID-19 lethality.

Link: <https://bit.ly/3dnLVWM>

Collaborators: Centri della SIIA (Società Italiana dell'Ipertensione Arteriosa)
