

COVID-19 infection impact on cardiovascular and thrombotic events during acute phase and medium-term of the disease

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Background: Coronavirus disease (COVID-19) was labelled a global pandemic in April 2020 by the World Health Organisation. By December of the same year the disease caused by SARS-CoV-2, known as COVID-19 (Coronavirus disease 2019), had spread over 200 countries, infecting more than 70 million people, causing more than 1.5 million of deaths.

Recent studies suggest SARS-CoV-2 infection may be related to cardiovascular and thrombotic events although the strength of association remains unclear.

Aims: Evaluate the emergence of cardiovascular and thrombotic events (such as major acute cardiovascular events, ictus and other thrombosis) in the acute moment and in medium-term follow-up in COVID-19 patients.

Methods: Single-Center, retrospective, observational study of cohorts based on all the inhabitants of the health area. Survival analysis of main outcomes (mortality, heart failure [HF], and major acute cardiovascular events – MACE - [a composite of cardiovascular mortality, myocardial infarction and stroke]) were adjusted by multivariate logistic regression.

Results: Of the total population studied, 447,979 inhabitants, 1,030 (0.23%) were diagnosed with COVID-19 infection, of which 14.8% were

smokers, 31.2% had high blood pressure (HTA), 12.8% had diabetes, 29.2% had dyslipidaemia, 2.7% had peripheral artery disease, 4.7% had ischemic heart disease, 3.3% had had a previous transient ischemic attack, 10% were in anti-aggregation treatment and 5.8% were in anticoagulation treatment at the time of diagnosis. Concerning the analytics middle values, the group treated with ACEI/ARAB had higher troponins and ferritin than the group without ACEI/ARAB treatment, whereas higher reactive C protein and D-dimer were found in this last group. The main results showed that COVID-19 infection had no effect regarding to cardiovascular and thrombotic disease on mortality (OR: 1.64, 95% CI 0.98 2.76, p=0.062), heart failure (OR: 0.98, 95% CI 0.53 1.79, p=0.942), thrombotic events (OR: 1.02, 95% CI 0.22 4.83, p=0.98) and major acute cardiovascular events (OR: 0.88, 95% CI 0.48 1.60, p=0.665).

Conclusions: In conclusion, COVID-19 infection had no effect on the emergence of cardiovascular or thrombotic events taking into account the 6-month prognosis, defined as mortality, heart failure, or major acute cardiovascular events.