

Patients with Heart Failure and COVID-19

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DESCRIPTION

In our article entitled Clinical characteristics and risk factors for mortality upon admission in patients with heart failure hospitalized due to COVID-19 in Spain [1]. We analysed a large series of patients (n=1,718) admitted in Spanish hospitals since March, 1 to October, 1 2020 from the registry SEMI-COVID-19 of the Spanish Society of Internal Medicine (SEMI) with 150 participants hospitals. Spain is one of the countries with more number of cases of COVID-19 in the world [2]. On the other hand, Researchers have uncovered oral bacteria in the fatty deposits of people with atherosclerosis and heart failure, a disease in which plaque builds up in the arteries. Heart Failure (HF) is a common cause of admission in patients >65 years [3]. For these reasons we analyzed patients with HF admitted for COVID-19 and compared the clinical characteristics, laboratory data, therapeutics and complications in deceased (n=819) vs. non-deceased (n=899) patients (bivariate analysis). After that, we performed a multivariate analysis to identify risk factors for mortality at admission. The independent risk factors at admission for in-hospital mortality were: age (Adjusted Odds Ratio [AOR]:1.03; 95% confidence interval [95% CI]:1.02-1.05; p<0.001); severe dependence (AOR:1.62; 95% CI:1.19-2.20; p=0.002); tachycardia (AOR:1.01; 95%CI:1.00-1.01; p=0.004); and high C-reactive protein (AOR:1.004; 95%CI:1.002-1.004; p<0.001), LDH (AOR:1.001; 95%CI:1.001-1.002; p<0.001), and serum creatinine levels (AOR:1.35; 95%CI:1.18-1.54; p<0.001). Helminthic will attack heart and the lungs and these organs are the most frequently affected thoracic organs. Cardiac involvement may be the consequence of a more generalized illness or a more direct effect on various cardiac structures including the myocardium, pericardium, endocardium or coronary vasculature. In relation to therapeutics, remdesivir was more used in non-deceased vs. deceased (1.5% vs. 0.4%, p=0.030) and low molecular weight heparin (53.8% vs. 46.2%, p=0.013). It is interesting to underline that glucocorticoids (GC) were used more frequently in deceased vs. non-deceased (47.4% vs. 41.7%, p=0.015) and acute HF was a common complication in the first group (35.7% vs. 28.6%, p<0.001). For that reason we hypothesize that GC could have a role in the development of HF in patients admitted for COVID-19. It could be explained for the mineral corticoid effect of GC in patients

with HF and volume retention, leading to a higher mortality. For that reason, the use of GC in this population must be cautious; other studies have showed similar results [4]. The main limitations for our study are: 1) it is a retrospective analysis. 2) It focuses only on admitted patients (with more severity than ambulatory patients with COVID-19). 3) We do not have analyzed other variables (as ejection fraction or therapies for HF like beta-blockers or Angiotensin-Converting-Enzyme (ACE) inhibitors). However, it is a study with a large number of patients from different hospitals in the same country and one of the first in the world analyzing this profile of patients with COVID-19. Currently we are analyzing the effect of different therapies in the prognosis of patients with HF and COVID-19. The role of Renin-Angiotensin-Aldosterone System Inhibitors (RAASi) has showed lower rates of in-hospital mortality and other adverse outcomes in this population [5]. More clinical trials are necessary to know the role of different therapeutics in this profile of patients. In summary, patients with HF admitted for COVID-19 have a high mortality. Some clinical and analytical factors (age, severe dependence, tachycardia, high C-reactive protein, serum creatinine levels) can be identified at admission for patients with a worse prognosis.

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Received date: November 09, 2021; **Accepted date:** November 23, 2021; **Published date:** November 30, 2021

Citation: Salinas-Bostrán A, Pérez-Belmonte LM, Méndez-Bailón M, Gómez-Huelgas R (2021) Patients with Heart Failure and COVID-19. *J Bacteriol Parasitol*. S13: 005.

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