

## **Abstract**

**Background:**In December 2019, a sudden outbreak of pneumonia caused by severe acute respiratory syndrome coronavirus SARS-CoV2 occurred in Wuhan, China, known as coronavirus disease 2019 (COVID-19). This disease quickly spread throughout the world and became an epidemic. Our previous knowledge proved that viral infections such as influenza can be a trigger for disability and decompensation in patients with heart failure. Considering that there is very little information about covid-19 disease and related diseases such as people with a history of heart failure and in some cases conflicting results, we concluded in this study that in patients with covid-19 heart failure in Ardabil Imam Khomeini Hospital to evaluate clinical and laboratory findings of patients.

**Aim:**The purpose of this study is to evaluate clinical and laboratory findings in HF patients with covid-19 and compare it between recovered and deceased patients in Ardabil Imam Khomeini Hospital from March 2018 to March 2019.

**Materials and Methods:**This study is a retrospective cross-sectional study that was conducted from the beginning of March 2018 to the end of March 2019 in all HF patients with covid-19 hospitalized in Imam Khomeini hospital in Ardabil. The criteria for inclusion in the study were all patients with HF whose PCR time-real test was positive in connection with the disease of Covid-19, or people for whom the diagnosis of Covid-19 was confirmed according to the national guidelines based on the CT scan findings. For all the studied subjects, the questionnaire including demographic characteristics, clinical findings and laboratory findings was completed. Questionnaire information was collected and after entering into SPSS version 21 software, the results were analyzed using Fisher's exact test and  $P < 0.05$ .

**Results:**Among the 38 patients with HF who also had covid-19, 20 were women (52.6%) and 18 were men (47.4%). The average age in the studied group and in 38 HF patients with covid-19 was 70.42 with a minimum age of 38 years and a

maximum age of 94 years. The most common underlying diseases were blood pressure with a frequency of 73.7%, heart infarction with a frequency of 78.9%, diabetes with a frequency of 44.7%, lung diseases with a frequency of 23.7%, and kidney diseases with a frequency of 15.8%. Shortness of breath with a frequency of 92.1%, fatigue with 47.4%, nausea with 47.4%, fever and muscle pain with 42.1% were the most frequent. Among the 38 people included in the study, 27 (71.1%) patients recovered and 11 patients (28.9%) died.

**Conclusion:**It was found that in the clinical findings between the two sexes, cough is significantly more in women. Other symptoms were not statistically significant. In the laboratory findings based on gender, it was found that the levels of troponin, potassium, AST and ALT in The group of men is significantly more. No significant difference was observed in other tests. In the laboratory findings, it was found that the level of troponin, ferritin, urea, and creatinine in patients hospitalized in special care has increased levels. In the laboratory findings based on age group, it was found that ALT and BS are significantly higher in people under 60 years old, while the amount of CK-MB/ESR/CR is higher in the elderly. The clinical symptoms are shown based on the result, which revealed that there is no significant statistical relationship between the clinical symptoms of recovered and deceased people. It was found that the amount of monocyte is higher in recovered people, while the level of WBC and PTT/LDH/BUN/CR is higher in deceased people. In the laboratory findings, it was found that the amount of monocytes and platelets was significantly higher in the group that had EF above 50% than other groups.

In the laboratory findings, it was found that CK-MB/AST/ALT in FC4 group had high statistical and significant levels compared to others. Also, the amount of platelets was significantly higher in FC2 compared to others.

**Keywords:**HF, COVID-19