



Cardiopulmonary Resuscitation in COVID-19 Patients Experiencing In-Hospital Cardiac Arrest



COVID-19 continues to infect people across the globe, and the United States continues to be one of the most affected regions in the world. Coronavirus primarily affects the respiratory system through angiotensin-converting enzyme (ACE) 2 receptor on host cells. It also affects other systems because ACE2 is present in the heart, GI tract and kidneys. Infection with COVID-19 leads to an imbalance between ACE and ACE2 and can cause increased activity of angiotensin II, leading to vasoconstriction, pro-inflammatory, and pro-fibrotic pathways.

While several studies have been conducted to identify the risk factors for COVID-19 and patient outcomes but data regarding outcomes after in-hospital cardiac arrest in COVID-19 patients is quite limited. In this study, the researchers describe the characteristics of in-hospital cardiac arrest (IHCA) in COVID-19. This is the first study of its kind to report outcomes of IHCA in COVID-19 patients in the U.S.

1094 patients were hospitalised for COVID-19 during the study period, out of which 149 died and 63 suffered from in-hospital cardiac arrest with attempted resuscitation. 49.2% of the patients were males, and the median age of the study population was 66 years. 90.5% of the patients were African American. The most common comorbidities were hypertension, obesity, diabetes, and chronic kidney disease. The most common presenting symptoms included shortness of breath, fever, and cough.

During hospitalisation, 66.7% of the patients developed septic shock, and 84.1% had ARDS. Arrhythmias occurred in 12.7% of the patients. Prior to the in-hospital cardiac arrest, 81% of the patients were on a ventilator, 60.3% on vasopressors and 39.7% on dialysis. 84.1% of the in-hospital cardiac arrests occurred in the ICU. Advanced cardiac life support (ACLS) protocol was initiated in less than a minute for all in-hospital cardiac arrests and in less than 2 minutes for the remaining patients. Return of spontaneous circulation was achieved in 29% of the patients, but this was brief, and in-hospital mortality was 100%.

It is important to note that the median symptom duration in this study was 14 days, which suggests that many patients presented late in the inflammatory phase of the likely. This could account for the poor outcomes. The majority of IHCA occurred in the ICU, but the location of the arrest did not improve overall outcomes. 81% of the patients were already on the ventilator at the time of the arrest and had a secure airway.

Return of spontaneous circulation was achieved in 29% of the patients suffering from an in-hospital cardiac arrest but this was brief and in-hospital mortality was 100%.

Overall, these findings show that COVID-19 related IHCA is associated with an extremely high rate of mortality. This raises questions about the futility of ACLS measures in these patients. There is a need to institute measures to ensure that goals of care are discussed and incorporated into the care pathway of critically ill COVID-19 patients.

Source: [Critical Care Medicine](#)

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