

January 2021

## the Cardiovascular Manifestations of COVID-19: A Review of the Literature and Institutional Experience

Gina Polsinelli

*wayne state university school of medicine, gina.polsinelli@med.wayne.edu*

Steven J. Korzeniewski

*Wayne State University School of Medicine, skorzeni@med.wayne.edu*

Oksana M. Doubrovski

*Wayne State University School of Medicine, oksana.doubrovski@med.wayne.edu*

James Paxton

*Wayne State University School of Medicine, jpaxton@med.wayne.edu*

Follow this and additional works at: [https://digitalcommons.wayne.edu/som\\_srs](https://digitalcommons.wayne.edu/som_srs)



Part of the [Cardiology Commons](#), [Critical Care Commons](#), [Emergency Medicine Commons](#), [Infectious Disease Commons](#), and the [Virus Diseases Commons](#)

---

### Recommended Citation

Polsinelli, Gina; Korzeniewski, Steven J.; Doubrovski, Oksana M.; and Paxton, James, "the Cardiovascular Manifestations of COVID-19: A Review of the Literature and Institutional Experience" (2021). *Medical Student Research Symposium*. 57.

[https://digitalcommons.wayne.edu/som\\_srs/57](https://digitalcommons.wayne.edu/som_srs/57)

This Research Abstract is brought to you for free and open access by the School of Medicine at DigitalCommons@WayneState. It has been accepted for inclusion in Medical Student Research Symposium by an authorized administrator of DigitalCommons@WayneState.

## **“The Cardiovascular Manifestations of COVID-19: A Review of the Literature and Institutional Experience”**

Polsinelli GN, Korzeniewski SJ, Doubrovski OM, Paxton JH.

Department of Emergency Medicine, Wayne State University School of Medicine (Detroit, MI)

The cardiovascular health of those infected with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) plays a major role in rates of hospitalization, mortality risk, and rates of mechanical ventilation. In patients with COVID-19, acute myocardial injury and history of cardiovascular disease are both independently established risk factors for poor patient prognosis. In addition to myocardial injury, numerous acute cardiovascular manifestations of COVID-19 disease have been identified. Previous work on this topic typically focused either upon a general description of the acute cardiovascular manifestations and sequelae of COVID-19, or upon broad-based clinical outcomes associated with COVID-19 in patients with history of cardiovascular and/or metabolic disease. However, the role of pre-existing cardiovascular and metabolic disease in predicting the development and severity of COVID-19-related cardiovascular complications remains unclear. We queried our institutional COVID-19 patient registry, extracting data on all patients who were tested for the presence of SARS-CoV-2 and myocardial injury from 3 March 2020 – 30 July 2020. We identified a total of 5,451 patients from our institutional COVID-19 registry who met our criteria, including 734 (13.5%) subjects ultimately confirmed to be COVID-19 positive, and 4,717 subjects confirmed to be COVID-19 negative. Those with a prior history of cardiovascular disease can have increased frequency of cardiovascular manifestations. Cardiovascular events in COVID-19 include acute myocardial injury, myocardial infarction, myocarditis, pericarditis, electrocardiogram abnormalities, acute thrombosis, and acute heart failure. Identifying underlying cardiovascular disease and evidence of myocardial injury may predict which patients should be prioritized or potentially require more aggressive management and treatment strategies.

**Keywords:** COVID-19, SARS-CoV-2, myocardial infarction, myocardial injury, cardiomyopathy, cardiovascular