

Unvaccinated heart failure patients three times more likely to die from COVID than boosted heart failure patients

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Heart failure patients who are unvaccinated against SARS-CoV-2, the virus that causes COVID-19, are three times more likely to die if

infected with the virus compared to fully boosted heart failure patients, according to new research out of Mount Sinai Heart. The study, published June 9 in the *Journal of Cardiac Failure*, is the first to look at COVID-19 vaccination status and outcomes in patients with this cardiovascular condition, and shows how dramatic the protective effects are in this high-risk patient population.

The research is important since many [heart failure](#) patients are hesitant to get the COVID-19 vaccine due to fear of myocarditis, or inflammation of the heart muscle. This condition is a rare side effect of the Pfizer-BioNTech and Moderna vaccines but a more common complication of COVID-19 infection. The results of this work can help heart failure patients better understand the benefits of being fully vaccinated and boosted against COVID-19, and the protection it offers.

"I launched this study because our heart failure patients often express fear of getting the COVID-19 vaccine after hearing reports of vaccine-related myocarditis, which would cause another cardiac setback for them. Until now, it has been difficult to explain to these patients how the cardiovascular benefits of vaccination substantially outweigh the risks of complications to them, because we didn't have concrete evidence to show the substantial risks of being unvaccinated, as few studies have focused on this specific high-risk population and COVID-19 vaccinations," says corresponding author Anurhada Lala, MD, Director of Heart Failure Research and an Associate Professor of Medicine (Cardiology) at the Icahn School of Medicine at Mount Sinai. "Having specific data showing patients with heart failure who don't have their full vaccine series are at a much higher risk of death, [intensive care unit](#) (ICU) admission, and general hospitalization—even after accounting for factors that might be related to an individual's decision to become vaccinated—is helpful."

Mount Sinai researchers conducted a retrospective study to analyze the

impact of COVID-19 vaccination status in the heart failure patient population. They looked at electronic records of 7,094 patients from the Mount Sinai Health System with a heart failure diagnosis (not including heart transplant and left ventricular assist device patients) who had office visits, emergency department visits, or hospitalizations between January 1, 2021, and January 24, 2022.

Of that group, 2,200 (31 percent) were fully vaccinated with two doses, 1,053 (14.8 percent) were fully vaccinated and had also received one booster—the recommended guidance from Centers for Disease Control and Prevention at that time; 645 (9.1 percent) were partially vaccinated with only one dose, and 3,196 (45 percent) were unvaccinated. That unvaccinated proportion in this study is approximately double the proportion of unvaccinated adults in the general New York City population.

Researchers compared [survival rates](#) and numbers of admissions to the hospital and intensive care units between the groups, looking at both all-cause mortality and mortality associated with concurrent, documented SARS-CoV-2 infection. They found the unvaccinated and partially vaccinated patients were three times more likely to die from COVID-19-related illness than fully vaccinated and boosted patients. The study goes on to show that unvaccinated and partially vaccinated patients were 15 percent more likely to be hospitalized if infected with the virus and nearly twice as likely to be admitted to the ICU when compared to fully vaccinated and boosted patients.

"The findings further emphasize that [heart failure patients](#) need to take vaccines seriously, since they have worse outcomes if infected with COVID-19, and stresses the importance of receiving the full COVID-19 vaccination dosage, especially since our previous work shows those with heart failure are 2.5 times more likely to die from the virus," Dr. Lala adds. "I have used these results to help educate reluctant patients and in

many cases this has been effective in encouraging them and getting them to follow through with full vaccination. The hope is that cardiologists will use these results as a tool to help their patients and improve their chances of survival."

More information: Association of Reduced Hospitalizations and Mortality Among COVID-19 Vaccinated Patients with Heart Failure, *Journal of Cardiac Failure* (2022).

Provided by The Mount Sinai Hospital

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