



International Study Shows Low Incidence of COVID Vaccine-Related Myocarditis, Higher Risk from Virus

SARS-CoV-2 virus confers greater risk for the condition than taking a vaccine.



Joshua Hare, M.D., and
Bettina Heidecker, M.D.

An international team including University of Miami Miller School of Medicine researcher Joshua Hare, M.D., has shown that COVID-19 vaccines slightly increase the risk of developing myocarditis and/or pericarditis (myocarditis). By contrast, the SARS-CoV-2 virus generates a much higher risk of developing these once-rare conditions.

The study also showed that most pandemic-related myocarditis cases are quite mild and offered best practices to diagnose and treat them. The study titled “Myocarditis Following COVID-19 Vaccine: Incidence, Presentation, Diagnosis, Pathophysiology, Therapy, and Outcomes put into Perspective,” published online on September 6, in the *European Journal of Heart Failure*.

“While it’s true that vaccines occasionally cause myocarditis, those cases are rare and generally quite mild,” said Dr. Hare, a practicing cardiologist and director of the Miller School’s



Interdisciplinary Stem Cell Institute (ISCI). “The critical piece here is that the risk of developing myocarditis from the SARS-CoV-2 virus is much higher than it is from taking the vaccine.”

Myocarditis is a rare form of heart muscle inflammation that can, in extreme cases, restrict the heart’s ability to pump blood. Pericarditis inflames the heart’s outer lining. Both of these conditions are generally uncommon and have not been extensively studied.

“Prior to COVID, myocarditis was an extremely rare condition,” said Dr. Hare. “There were some cardiologists who would go through their entire careers and never see a single case. As a result, the condition is poorly understood.”

Vaccine’s Low Relative Risk

Dr. Hare collaborated with the study’s lead author Bettina Heidecker, M.D., FESC, FACC, of the Charité, Universitätsmedizin Berlin. Dr. Heidecker completed her training at the Miller School, both at ISCI and at the UM/Jackson Memorial Health System as a medical intern and resident.

The study showed that vaccine-related myocarditis is highest in men between 12 and 39. However, the risk is still quite low, with only .95 people in 100,000 developing the condition.

The risk of developing myocarditis from SARS-CoV-2 is much higher. The Centers for Disease Control and Prevention has found that COVID infection generates 146 cases per 100,000 people. Regardless of whether the condition is caused by the virus or the vaccine, the cases have been generally quite mild.



“My interest in myocarditis, going back many years, stems from treating people who get quite sick,” said Dr. Hare. “I have been pleasantly surprised that most people who have been getting myocarditis since COVID have had mild cases. There’s a tiny tip of the iceberg of people who get severely ill, but the good news is that 99% of these patients are going to recover fully.”

In addition to quantifying the risks, the study also discussed best practices for diagnosing myocarditis, including cardiac magnetic resonance imaging and endomyocardial biopsy, as well as sharing the current understanding of how the disease progresses. Still, the authors believe the most important message is that the vaccines are quite safe.

“For anyone who is doing the risk/benefit calculations on whether to get vaccinated, it’s really no contest,” said Dr. Hare. “The risk of developing myocarditis or pericarditis from the vaccine is much, much lower than it is from the virus.”

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