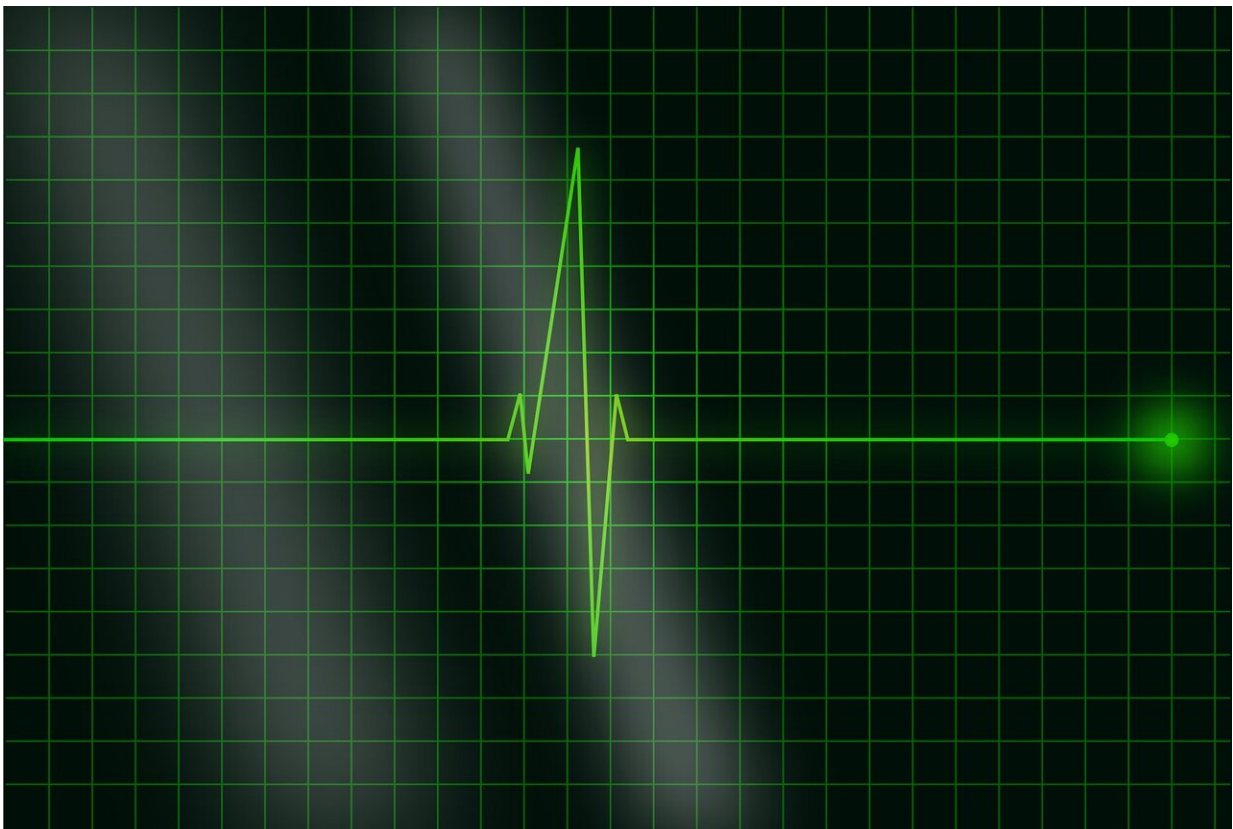


Symptoms resolved in 7 patients with myocarditis-like illness after COVID-19 vaccination

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Findings from a small study detailing the treatment of myocarditis-like symptoms in seven people after receiving a COVID-19 vaccine in the

U.S. are published today in the American Heart Association's flagship journal *Circulation*. These cases are among those reported to the Centers for Disease Control and Prevention's Vaccine Adverse Event Reporting System (VAERS) documenting the development of myocarditis-like symptoms in some people who received the COVID-19 vaccine.

Myocarditis is a rare but serious condition that causes inflammation of the middle layer of the wall of the [heart muscle](#). It can weaken the [heart](#) and affect the heart's electrical system, which keeps the heart pumping regularly. It is most often the result of an infection and/or inflammation caused by a virus.

The study included seven patients hospitalized for acute myocarditis-like illness following a COVID-19 vaccination, treated at hospitals in Falls Church, Virginia (a suburb of Washington, D.C.) and Dallas. All patients were males under the age of 40; the youngest was 19 years of age and the oldest was 39. Six of the men were white adults, one was a Hispanic adult. Only one patient reported a history of previous COVID-19 infection; six of the seven patients were tested for COVID-19 during hospitalization and were negative.

Six of the men received mRNA COVID-19 vaccines; five of the vaccines were manufactured by Pfizer/BioNTech and one by Moderna. One patient received the adenovirus Johnson & Johnson COVID-19 vaccine.

All patients were hospitalized within three to seven days after receiving a COVID-19 vaccine, with sudden onset chest pain. Myocardial injury was confirmed by either cardiac troponin I or elevated high sensitivity troponin testing. All patients had stable vital signs. None had a pericardial friction rub or rash, a sound that could signal the diagnosis of pericarditis, which is inflammation of the thin membrane surrounding the heart. ECG results varied from a normal heart rhythm to ST-segment

elevation, which can indicate a decrease in blood flow to the heart muscle. The three patients who underwent invasive medical imaging showed no signs of coronary blockage. None of the patients reported heart palpitations, and none had signs of heart arrhythmias.

Treatment varied and included beta-blocker and anti-inflammatory medications. Patients left the hospital within two to four days of their admission, and all symptoms were resolved before hospital discharge.

"The clinical course of vaccine-associated myocarditis-like illness appears favorable, with resolution of symptoms in all patients. Given the potential morbidity of COVID-19 infection even in younger adults, the risk-benefit decision for vaccination remains highly favorable. Vaccine adverse event reporting remains of high importance and further studies are needed to elucidate the pathophysiological mechanism to potentially identify or prevent future occurrences," said the researchers.

The American Heart Association continues to urge all adults and children ages 12 and older in the U.S. to receive a COVID-19 vaccine as soon as they can, as recommended by the CDC. Research continues to indicate that the COVID-19 vaccines are 91% effective at preventing severe COVID-19 infection and spreading the virus to others. In addition, the benefits of vaccination far exceed the very unusual risks.

According to the CDC, fewer than 1,000 cases of myocarditis-like illnesses were reported as of May 31, 2021, and nearly 312 million doses of COVID-19 vaccines have been administered in the U.S. to-date.

The CDC is holding a special meeting on Friday, June 18 to review the evidence of cases of suspected myocarditis developing in some [patients](#) after receiving the COVID-19 [vaccine](#), as reported to the Vaccine Adverse Event Reporting System. The Association's science leaders are attending the meeting for further developments.

More information: Kathryn F. Larson et al, Myocarditis after BNT162b2 and mRNA-1273 Vaccination, *Circulation* (2021). [DOI: 10.1161/CIRCULATIONAHA.121.055913](https://doi.org/10.1161/CIRCULATIONAHA.121.055913)

Alagarraju Muthukumar et al, In Depth Evaluation of a Case of Presumed Myocarditis Following the Second Dose of COVID-19 mRNA Vaccine, *Circulation* (2021). [DOI: 10.1161/CIRCULATIONAHA.121.056038](https://doi.org/10.1161/CIRCULATIONAHA.121.056038)

Provided by American Heart Association

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