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## Spotlight on Special Topics

### A SYSTEMATIC REVIEW ON ECHOCARDIOGRAPHIC FINDINGS OF MYOCARDITIS AFTER THE SECOND COVID-19 MRNA VACCINATION DOSE

Poster Contributions

For exact presentation time, refer to the online ACC.22 Program Planner at <https://www.abstractsonline.com/pp8/#!/10461>

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Session Title: Spotlight on Special Topics Flatboard Poster Selections: COVID

Abstract Category: 61. Spotlight on Special Topics: Coronavirus Disease (COVID-19)

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**Background:** COVID-19 vaccines have reduced global morbidity and mortality rates. However, there are reports of Pfizer-BioNTech and Moderna mRNA vaccines are causing myocarditis which can present as mild asymptomatic heart inflammation or progress to heart failure and could lead to death. We aim to conduct a systematic review of myocarditis-related echocardiographic findings after the second Covid-19 mRNA vaccine dose.

**Methods:** We reviewed studies that focused on the echocardiographic findings of myocarditis after the second Covid-19 mRNA vaccination dose. There were no restrictions on the study design or language. The study population includes anyone who developed myocarditis after receiving the second Covid-19 mRNA vaccine dose anywhere in the world, regardless of age, comorbidities, or prior COVID-19 infection.

**Results:** Thirty studies met our inclusion criteria with 108 patients who developed myocarditis after receiving the second dose of the mRNA covid19 vaccine. All patients presented within one week of receiving the second dose of the vaccine. ECHO findings were normal in 41 (37.9%) of the cases of myocarditis, including no wall motion abnormalities and a normal left ventricular ejection fraction greater than 50, with LVEF ranging from 35 to 61 for all study patients. Other patients have a mild LVEF decrease, trace pericardial effusion, and mild regional wall abnormalities.

**Conclusion:** Young males may develop myocarditis after receiving the second dose of mRNA vaccines, regardless of previous COVID-19 infection. It usually recovers quickly, with only a few exceptions requiring a brief stay in the intensive care unit. There is limited data regarding post-discharge follow-up. Additional research is needed to determine the long-term effects of myocarditis and the diagnostic and prognostic value of echocardiography in the investigation of second-dose mRNA vaccine-induced myocarditis.