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Spotlight on Special Topics

CARDIAC MAGNETIC RESONANCE (CMR) FINDINGS IN PATIENTS WITH ACUTE MYOCARDITIS AFTER RECEIVING THE SECOND DOSE OF COVID19 MRNA VACCINE: A SYSTEMATIC REVIEW

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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Background: Mass immunization campaigns have been initiated to contain the ongoing COVID-19 pandemic. COVID-19 mRNA vaccines (BNT162b2 (Pfizer-BioNTech) and mRNA-1273 (Moderna)) have been given emergency use authorization. Recently the lay press has reported concerns for vaccine-associated myocarditis. The aim of this study is to present a systematic review of the Cardiac Magnetic Resonance (CMR) findings of myocarditis following the second dose of Covid-19 mRNA vaccination.

Methods: PRISMA search strategy was used in the database search of studies that discussed the Cardiac Magnetic Resonance findings in patients following the second dose of Covid-19 mRNA vaccination. We had no restrictions on study design, population, or language.

Results: 28 studies were included in this study, 113 out of 136 patients developed myocarditis after the second dose of covid19 mRNA vaccination. Cardiac magnetic resonance (CMR) findings were suggestive of myocarditis in all subjects. Results were similar in most subjects and included non-ischemic early or late gadolinium enhancement in a patchy or diffuse or nodular pattern that involved epicardial or myocardial layer or both of cardiac walls, myocardial edema, and fibrosis, hypokinesis of ventricular walls. Some subjects showed normal ventricular wall and function. The ejection fraction ranged from 45% to 63%

Conclusion: Younger men are more prone to develop myocarditis after the second dose of COVID19 mRNA vaccination. Moderna vaccine has a higher risk compared to Pfizer. CMR is useful to determine the development of myocarditis after vaccination. A limitation of this study was the lack of sufficient studies with most of the studies being a case report, so more studies are needed. In addition to that, more data is needed about the patient's follow-up course