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Discussion/Conclusion: The mechanism behind mCV-related pericarditis/myocarditis is unknown, with suggestion there is an immune-mediated trigger, molecular mimicry or anti-idiotypic antibodies. An immunogenetic risk is supported by this report in monozygotic DCDA twins. Knowledge of the underlying aetiology may allow predicting who is at risk of developing pericarditis/myocarditis following mCV, and to offer alternative vaccine platforms and anti-inflammatory treatments.

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mRNA COVID-19 Vaccine Related Myocarditis and Pericarditis in the Australian Capital Territory
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Background: COVID-19 vaccines have been crucial to control the COVID-19 pandemic. The Australian Capital Territory (ACT) has one of the highest vaccination rates internationally. Adverse events including myocarditis and pericarditis have been associated with mRNA COVID-19 vaccines [1,2]. We describe incidence and patient characteristics of mRNA vaccine related myocarditis and pericarditis referred to the only ACT tertiary hospital.

Method: We retrospectively reviewed medical records of patients admitted to Canberra Hospital from February 2021 to January 2022, with a discharge diagnosis of myocarditis or pericarditis. Inclusion criteria included CCU admitted patients, vaccination with at least one dose of mRNA vaccine, and definite or probable myocarditis or pericarditis as defined by the Brighton Collaboration [3].

Results: 95 patients were screened, of which 23 met inclusion criteria. Median age was 26 years (IQR 20–42), and 7 (30%) of the included patients were female. 10 patients (44%) had myocarditis, 10 patients (44%) had pericarditis, while 3 (13%) patients met criteria for both myocarditis and pericarditis. 21 (91%) received BNT162b2 (Pfizer-BioNTech) vaccine and 2 (9%) received mRNA-1273 (Moderna) vaccine. 18 (82%) cases occurred after the 2nd dose, 1 (5%) occurred after the 1st dose, 3 (17%) occurred after booster vaccination. Median peak troponin 1 in those with suspected myocarditis was 2.250 (IQR 731–10,144). Median peak CRP was 9 (IQR 3–38). Average length of stay was 1.2 days (SD 0.5).

Conclusion: Patients identified with mRNA vaccine related myocarditis and pericarditis were more commonly younger men who received the 2nd dose of a vaccine and had a short length of hospital stay.

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