



Clinician alert #65 – all clinicians

Effective from 10 September 2021

New information

Myocarditis and Pericarditis following mRNA COVID-19 vaccination

Myocarditis and/or pericarditis have been reported as rare side effects after mRNA COVID-19 vaccines, including Comirnaty (Pfizer) and Spikevax (Moderna). These reports have been characterised by:

- a predominance of males under 30 years of age
- more commonly following the second dose
- typically occurring within 1-5 days of vaccination
- resulting in mostly mild illness, which responds well to standard treatment.

Data from the United States has found the reported incidence in males aged 12-29 years was 40.6 cases per million second doses of an mRNA COVID-19 vaccine, and in females aged 12-29 years was 4.2 cases per million. The rate in males aged 30 years or older was 2.4 cases per million second doses, and in females of the same age was 1.0 case per million second doses.

People who develop myocarditis or pericarditis attributed to their first dose of an mRNA COVID-19 vaccine are advised to defer further doses and to discuss this with their treating doctor.

Most pre-existing cardiac conditions are not regarded as contraindications to vaccination. Comirnaty is a recommended vaccine for people with a history of heart conditions: this includes myocarditis, pericarditis or endocarditis > 6 months prior to vaccination, coronary artery disease, myocardial infarction, stable heart failure, arrhythmias, rheumatic fever, prior history of rheumatic heart disease (RHD), Kawasaki Disease, most congenital heart disease and people with implantable cardiac devices.

The Australian Technical Advisory Group on Immunisation (ATAGI) advises that people with a history of any of the following conditions can receive an mRNA vaccine but should consult a GP or cardiologist about the best timing of vaccination and whether any additional precautions are recommended:

- recent (i.e. within the past 6 months) or current inflammatory cardiac illness e.g. myocarditis, pericarditis, endocarditis
- acute rheumatic fever or acute rheumatic heart disease
- people aged 12-29 years with dilated cardiomyopathy
- complex or severe congenital heart disease including single ventricle (Fontan) circulation
- acute decompensated heart failure
- cardiac transplant recipients.

ATAGI and the Cardiac Society of Australia and New Zealand (CSANZ) emphasise that the overwhelming benefits of vaccination using an mRNA vaccine in protecting individuals against COVID-19 and its serious outcomes (such as hospitalisation and death) as well as the wider benefits of reducing spread of the disease in the community, greatly outweigh the rare risk of myocarditis or pericarditis after vaccination.

Background

Myocarditis (inflammation of the heart muscle) and Pericarditis (inflammation of the pericardial sac surrounding the heart) can occur separately or together (myopericarditis). Myocarditis and pericarditis occur in the general population due to non-vaccine causes, including SARS-CoV-1 infection.

Possible symptoms of myocarditis/pericarditis include:

- chest pain, pressure or discomfort
- palpitations (irregular heartbeat, skipped beats or 'fluttering')
- syncope (fainting)
- shortness of breath
- pain with breathing.

Assessment of suspected myocarditis or pericarditis

Vaccine recipients, especially males aged under 30 years, should be made aware of an increased risk for myocarditis and pericarditis and to seek medical care if they develop symptoms. People presenting with any of the above symptoms should be clinically assessed. Initial investigations should include:

- a 12-lead ECG
- troponin
- chest X-ray
- other tests for other differential diagnoses as clinically indicated.

If clinical suspicion of myocarditis or pericarditis is high, a cardiologist should be consulted even if investigation results are normal. Those who appear unwell should be referred immediately to an emergency department.

Reporting of suspected vaccine reactions and advice on future doses

All suspected adverse events following vaccination should be reported to the West Australian Vaccine Safety Surveillance (WAVSS) system [online](#). WAVSS clinicians can also arrange referral to a vaccine specialist service if warranted i.e. to the SCGH adult clinic for those aged 16 and over and to Perth Children's Hospital for persons aged 15 years and under.

Currently ATAGI and CSANZ advise people who have had myocarditis or pericarditis attributed to an mRNA COVID-19 vaccine, where other causes have been excluded, to defer future doses. Data on myocarditis/pericarditis following COVID-19 vaccination are accumulating rapidly and further updates to guidance from ATAGI and CSANZ are expected.

Further information

Refer to the ATAGI and CSANZ Guidance on Myocarditis and Pericarditis after mRNA COVID-19 vaccines available on the Australian Department of Health [website](#).

The Metropolitan Communicable Disease Control (MCDC) call line 9222 8588 is available for general clinical COVID-19 vaccination queries (not to be used for booking vaccinations or adverse event reporting).

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