



## Training/Practice Practical Clinical Practice Update

# Myocarditis and Pericarditis After COVID-19 mRNA Vaccination: Practical Considerations for Care Providers

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### ABSTRACT

The mRNA vaccines against COVID-19 infection have been effective in reducing the number of symptomatic cases worldwide. With widespread uptake, case series of vaccine-related myocarditis/pericarditis have been reported, particularly in adolescents and young adults. Men tend to be affected with greater frequency, and symptom onset is usually within 1 week after vaccination. Clinical course appears to be mild in most cases. On the basis of the available evidence, we highlight a clinical framework to guide providers on how to assess, investigate, diagnose, and report suspected and confirmed cases. In any patient with highly suggestive symptoms temporally related to COVID-19 mRNA vaccination, standardized workup includes serum troponin measurement and polymerase chain reaction testing for COVID-19 infection, routine additional lab work, and a 12-lead electrocardiogram. Echocardiography is recommended as the imaging modality of choice for patients with unexplained troponin elevation and/or pathologic electrocardiogram changes. Cardiovascular specialist consultation and hospitalization should be considered on the basis of the results of standard investigations. Treatment is largely supportive, and

The mRNA vaccines against COVID-19 have shown unprecedented efficacy with respect to prevention of symptomatic

### RÉSUMÉ

Les vaccins à ARNm contre la COVID-19 ont permis de réduire efficacement le nombre de cas symptomatiques de cette infection dans le monde entier. Par suite de l'usage généralisé du vaccin, une série de cas de myocardite ou de péricardite liées au vaccin a été signalée, en particulier chez les adolescents et les jeunes adultes. Le phénomène tend à toucher plus fréquemment les sujets de sexe masculin, et les symptômes apparaissent généralement au cours de la semaine suivant la vaccination. L'évolution clinique semble bénigne dans la très grande majorité des cas. À partir des données disponibles, nous dégageons un cadre de référence clinique auquel les fournisseurs pourront se reporter au moment d'évaluer, d'examiner, de diagnostiquer et de signaler les cas suspects et confirmés. Chez tout patient qui a des symptômes fortement évocateurs et présentant un lien temporel avec l'administration du vaccin à ARNm contre la COVID-19, le bilan diagnostique systématique comprend le dosage de la troponine sérique et le dépistage de la COVID-19 par PCR, d'autres analyses de laboratoire courantes et un électrocardiogramme (ECG) à 12 dérivation. L'échocardiographie est la technique d'imagerie

infection and severe illness. With the development of COVID-19 variants of concern including variant B.1.617.2 for which 2 vaccinations are needed to confer immunity, continued public health initiatives promoting vaccine use has continued. Recently, an association with myocarditis and pericarditis has been reported to be related to mRNA vaccination.<sup>1</sup> Historically, myocarditis/pericarditis has been reported after a smallpox live vaccine, with an incidence of 2.16–7.8 per 100,000 vaccines with reports occurring up to 30 days

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