

# Hong Kong, US, Israeli Data Illuminate COVID Vaccine Myocarditis

---

[medscape.com/viewarticle/967355](https://www.medscape.com/viewarticle/967355)

Steve Stiles

Why some COVID-19 vaccines seem occasionally to cause a distinctive form of myocarditis, and why adolescent boys and young men appear most vulnerable, remain a mystery. But the entity's prevalence, nuances of presentation, and likely clinical course have come into sharper view after additions to the literature this week.

Two new publications all but confirm that the rare cases of myocarditis closely following vaccination against SARS-CoV-2, primarily with one of the mRNA-based vaccines from Pfizer-BioNTech and Moderna, is a clinically different creature from myocarditis physicians were likely to see before the pandemic.

A third report unveils rates of hospitalization for myocarditis linked to Pfizer-BioNTech vaccination in the 12-to-15 age group, based on active surveillance across Israel. Of note, the rates were lower than corresponding numbers among the country's 16- to 19-year-olds published in late 2021 by the same authors.

## No Link With CoronaVac

---

A case-control study covering almost the entire population of Hong Kong from February to August 2021 confirms a slight but significant excess risk for myocarditis and, to a lesser degree, pericarditis, after injections of the Pfizer-BioNTech vaccine. As consistently reported from other studies, the risks were highest in adolescent and young adult males and after a second dose.

The study estimated an overall carditis incidence of 5.7 cases per million doses of Pfizer-BioNTech, for a risk 3.5 times that in the unvaccinated Hong Kong population. Carditis rates after a first dose were about 2.5 per million and 10 per million after a second dose.

Hong Kong launched its public SARS-CoV-2 immunization program in late February 2021 with the Chinese-made CoronaVac (Sinovac) inactivated-virus vaccine, and introduced the mRNA-based alternative several weeks later. By August 2021, the vaccines had reached about 3.3 million people in the region — 49% of the Hong Kong population at least 12 years of age — notes the report published January 25 in *Annals of Internal Medicine*.

In a novel finding, there were no excesses in carditis cases after CoronaVac vaccination. The difference between vaccines likely isn't due to chance, because three-fourths of the carditis-associated Pfizer-BioNTech injections arose within a week, whereas "71% of cases following

the use of CoronaVac occurred more than 30 days after vaccination," senior author Ian Chi Kei Wong, PhD, University of Hong Kong, Hong Kong Special Administrative Region, China, told *theheart.org* | *Medscape Cardiology*.

"This onset distribution for cases having received CoronaVac demonstrates that it is highly unlikely the carditis cases are related to the vaccine," he said. And that "plausibly implies a specific underlying mechanism between vaccination and carditis that may only be applicable to mRNA vaccines."

That inference is in line with case reports and other research, including large population-based studies from [Israel](#) and [Denmark](#), although a recent [study](#) from the United Kingdom hinted at a potential excess myocarditis risk associated with the adenovirus-based AstraZeneca-Oxford vaccine.

The Hong Kong study identified 160 patients age 12 or older with a first diagnosis of carditis during February to August 2021, in electronic health records covering nearly the entire region.

- 22
- 17

Credits:

Lead Image: Dreamstime

Medscape Medical News © 2022

Cite this: Hong Kong, US, Israeli Data Illuminate COVID Vaccine Myocarditis - *Medscape* - Jan 26, 2022.