Myocarditis After COVID Vaccination

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COMMENTARY

How Bad Can Myocarditis Be After COVID Vaccination?

F. Perry Wilson, MD, MSCE

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Welcome to Impact Factor, your weekly dose of commentary on a new medical study. I'm Dr F. Perry Wilson of the Yale School of Medicine.

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The chance that any given boy will develop myocarditis after COVID-19 vaccination is extremely low, and for the most part is lower than his chance of developing myocarditis after COVID-19 infection.

But... what if it happens? What can we expect?

We get the most detailed data yet on this question from this paper, appearing in Circulation, which examines 139 children and young adults with vaccine-associated myocarditis from 26 centers across the US and Canada.

Okay, let's start with some info about the patients.

About half were aged 12-16 and the rest were between ages 16 and 20. At the time the data were collected, vaccines were not approved for those under age 12 yet. The cohort is skewed heavily toward males, and while there isn't a control group — unless males were substantially more likely to get vaccinated than females in the catchment areas of these medical centers — this is further confirmation that being a male is a significant risk factor for vaccine-associated myocarditis.

Fully 90% of these cases occurred after the second dose of the vaccine — a median of 2 days after, though one patient presented 22 days after.

Not many kids got myocarditis after the first dose of vaccine, but 12 did, and there's an interesting finding here.

Of the 12 kids who got myocarditis after the first dose of the vaccine, half had evidence of prior COVID infection, based on history or antibodies.

Just 10% of kids in the overall study had evidence of prior COVID infection. Taken together, this strongly suggests that this is an immune phenomenon, not an idiopathic reaction to some vaccine constituent.

The main symptom? Chest pain in virtually all the kids. Associated symptoms included fever in 30% and shortness of breath in 30%. Palpitations, rash, and conjunctivitis were relatively rare.

Treatments were variable, but most kids got NSAIDs. A good number received IVIG or steroids.

Now, to be part of this case series, you had to have received a coronavirus vaccine, be hospitalized at one of these centers, and have an elevated troponin. So I want to point out the obvious here: We are seeing what might be considered the worst cases of vaccine-induced myocarditis; we can't really make inferences about the absolute incidence of the condition from these data.

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Credits
Image 1: CDC
Image 2: F. Perry Wilson, MD, MSCE
Image 3: F. Perry Wilson, MD, MSCE
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