COVID-19 Messenger RNA Vaccination and Myocarditis—A Rare and Mostly Mild Adverse Effect

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Several recent case series have described acute myocarditis after COVID-19 messenger RNA (mRNA) vaccination. While the cardiac complications of vaccines are important, discussion has been limited by small sample sizes that lack gender and racial and ethnic diversity. In this issue of JAMA Internal Medicine, Simone et al examine the incidence and outcomes of acute myocarditis following COVID-19 mRNA vaccination in a large community health system. During the 6 months of follow-up, there were 15 cases of myocarditis among the 2,392,924 Kaiser Permanente Southern California members who received at least 1 dose of the Pfizer and Moderna vaccines (1 case per 172,414 fully vaccinated individuals). This represents a relative ratio of 2.7 compared with unvaccinated individuals. The study population was 54.0% women and 31.2% White, 6.7% Black, 37.8% Hispanic, and 14.3% Asian individuals. Interestingly, the affected patients were all men younger than 40 years with no prior cardiac history, and they were discharged within a week of conservative management. These results parallel prior studies that showed incidence of post-COVID-19 mRNA vaccination myocarditis primarily in young men who have recently received their second vaccine dose.

Overall, vaccination-related myocarditis was a rare and mostly mild adverse event. Data from the Vaccine Adverse Event Reporting System indicate that it is not unique to just the COVID-19 mRNA vaccine. Moreover, this risk is small when weighed with the morbidity and mortality of COVID-19 infection, in which up to 28% of hospitalized patients showed signs of myocardial injury. Randomized clinical trials show that COVID-19 mRNA vaccines represent a safe and effective method of preventing infection; the identification of rare myocarditis does not change clinical decision-making. However, it would be worthwhile to identify the mechanism of cardiac injury from vaccines. In addition, we anticipate seeing more cases of myocarditis, as vaccination was recently approved for teenage males aged 12 to 16 years.

ARTICLE INFORMATION

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Conflict of Interest Disclosures: None reported.

REFERENCES


Racial and Ethnic Differences in Age at Diabetes Diagnosis—A Call for Action

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In the November issue of JAMA Internal Medicine, Wang et al conducted a cross-sectional analysis of pooled National Health and Nutrition Examination Survey data from 2011 to 2018 to examine racial and ethnic differences in age at diagnosis of type 2 diabetes. They found that the mean (95% CI) age at diagnosis for Mexican American adults (44.9 [43.4-46.4] years) and non-Hispanic Black adults (47.2 [46.1-48.4] years) was significantly younger than that for non-Hispanic White individuals (51.8 [50.8-52.9] years). Asian American individuals’ mean (95% CI) age at onset (50.5 [48.4-52.6] years) was not significantly different from that of non-Hispanic White individuals. The authors suggest that younger age at diagnosis—and correspondingly longer diabetes duration over the life span—may be a contributing factor to racial and ethnic disparities in diabetes-related morbidity and mortality.

These findings have implications for both the treatment and prevention of type 2 diabetes. More than one-third of Mexican American adults (35.0%) and one-quarter of non-Hispanic Black adults (25.1%) were diagnosed with diabetes before age 40 years (compared with only 14.4% for non-Hispanic White adults). For these younger adults, age-based and racial and ethnic differences in glycemic control are apparent within a year of the diabetes diagnosis. Individuals with younger-onset type 2 diabetes are less likely to achieve key

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