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Spotlight on Special Topics

A SYSTEMATIC REVIEW OF MYOCARDITIS FOLLOWING COVID-19 VACCINATION

Poster Contributions

For exact presentation time, refer to the online ACC.22 Program Planner at <https://www.abstractsonline.com/pp8/#!/10461>

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Background: The safety of COVID-19 vaccination has been a topic of interest, as people are concerned about potentially serious side effects that may lead to death. The WHO and the CDC have included myocarditis as one of those potential serious side effects. We performed a systematic review of all reported cases of myocarditis following COVID-19 vaccination and analyze clinical outcomes.

Methods: Using the PRISMA guidelines and its corresponding checklist, we conducted a systematic search of eight online databases, including PubMed, Scopus, Web of Science, CINAHL PLUS, Cochrane, NYAM Grey Literature Report, SIGLE OpenGrey, and Google Scholar. The search yielded 292 papers that were screened to finally include 31 articles (20 case reports and 11 case series). The inclusion criteria were as follows: any person who received any type of COVID-19 vaccine and was confirmed to have myocarditis due to the vaccine, with no limit on the time of presentation after the vaccine, and no limits on the number of doses of vaccine. We excluded studies with no confirmation of myocarditis after the vaccination.

Results: Of the 74 cases that were included, 66 (89%) were male and mostly young (median, IQR = 24, 17.5 years). Only three (4%) patients have received the non-mRNA-based vaccine, while the rest of the patients received one of the mRNA-based vaccines. Mostly, the symptoms would develop after the second dose of the vaccine (85%). The most common symptoms are chest pain (93%), fever (30%), and shortness of breath (20%). 73% of included cases were confirmed by cardiac MRI. A small portion (16%) were admitted to the ICU/CCU or the Cath Lab. Only two patients (2.7%) died from vaccine-induced myocarditis due to multiorgan failure.

Conclusion: From included cases, most patients recover after acquiring COVID-19 associated myocarditis. Physicians need to be well informed about the potential side effects of COVID-19 vaccinations, to better inform patients and clear up misunderstandings.