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COVID-19 Literature Review Group

Prepared by The Ohio State University

COVID-19 Vaccine Adverse Effects and SARS-CoV-2 Infection in Children

ODH Literature Review Group
THE OHIO STATE UNIVERSITY



Public Health
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COVID-19 Literature Review
Prepared by Kenya Moyers, The Ohio State University
July 13, 2021

Topic: COVID-19 Vaccine Adverse Effects

Title: Specialist confirmed allergic reactions to COVID-19 mRNA vaccines at a mass vaccination site

Source: Science Direct

Publication Date: June 22, 2021

Link: <https://www.sciencedirect.com/science/article/pii/S0264410X21008112?via%3Dihub>

Study Period: N/A

Study Location: Albany, New York

Sample Size: 14, 655 participants

Summary: This article discusses a prospective study of the Pfizer-BioNTech vaccinations administered at the Albany Community Vaccination Center. Researchers decided upon this study design because they wanted to observe a real-time, prospective evaluation of allergic reactions in a diverse community in order to aid in the understanding of the risk of allergic reaction to mRNA SARS-CoV-2 vaccination. The study population consisted of a variety of races and ethnicities; however, it was predominantly White (63.1%). Additionally, 33% of the population were in the highest anaphylaxis incidence age range of 16-39 years. Participants were screened for allergic history prior to the start of the study. If cleared, participants were vaccinated and monitored for either 15-(low risk group) or 30-min (prior history of anaphylaxis). In the first 14 days, 14,655 individuals were screened and vaccinated. Only 3.9% had history of anaphylaxis. After receiving the vaccine, no participants suffered any objective, immediate allergic symptoms. These findings are in alignment with the CDC reported rate of anaphylaxis being 2.4-4.5 per million vaccinations, as well as the complication rates reported during clinical trials. Additionally, findings indicate that specialist-confirmed rates of immediate allergic reaction to mRNA SARS-CoV-2 vaccination are far lower than self-reported rates defined by subjective, unconfirmed symptoms.

Key Findings Relevant to Ohio's Response: Healthcare providers, especially allergists, can play a key role in reaching the target for vaccine uptake for individuals by educating the public on the reported risk of severe allergic reactions to these vaccines.

COVID-19 Literature Review
Prepared by Kenya Moyers, The Ohio State University
July 15, 2021

Topic: SARS-CoV-2 Infection in Children

Title: Hide and seek in a pandemic: Review of SARS-CoV-2 infection and sequelae in children

Source: The Physiological Society

Publication Date: July 9, 2021

Link: <https://physoc.onlinelibrary.wiley.com/doi/10.1113/EP089399>

Study Period: N/A

Study Location: N/A

Sample Size: N/A

Summary: Findings from reviewing previous studies indicate that children infected with SARS-CoV-2 have a clinical phenotype that is distinct from that observed in adult cases. Children may experience a range of symptoms following infection, such as respiratory, gastrointestinal, and neurological symptoms. A more severe symptom that children may experience is a delayed hyperinflammatory syndrome (Paediatric Multisystem Inflammatory System – Temporally Associated with SARS-CoV-2; PIMS-TS), which often requires treatment in an intensive care unit. PIMS-TS is similar to other inflammatory disorders that occur in children such as Kawasaki disease, particularly the clinical aspects. The development of these symptoms among children could be due to the unique expression of transmembrane receptors and immune physiology overall. Children’s physiological profiles are of interest because we know that they are infected less frequently and have less severe COVID-19 complications in comparison to adults. Children may have severe illness secondary to SARS-CoV-2, but this is an infrequent occurrence, and their overall mortality is low. Being able to study the physiological profile of children would allow for there to be an advancement in the understanding of the mechanisms of disease and infection, which ultimately helps assist the development of potential therapies and disease prevention strategies. Regarding long-term complications of SARS-CoV-2 infection, both adults and children may experience neurological and cardiac morbidity after recovering from disease. As of today, vaccination against SARS-CoV-2 is still not permitted among children under 12 years of age. Due to the lack of vaccination in this age group, we would expect to see an increase in COVID-19 cases among these children in the upcoming months.

Key Findings Relevant to Ohio’s Response: Overall, children are infected less frequently and have less severe COVID-9 complications in comparison to adults. However, with schools returning to in-person in the fall, we may witness an increase in cases among children under 12 years old because they are not able to receive vaccination yet.