DSEN ABSTRACT

Safety and Immunogenicity of COVID-19 Vaccines in Pediatric Populations with Systemic Immune-Mediated Diseases

Summary

- Canada's National Advisory Committee on Immunization (NACI) needs evidence on the safety and effectiveness of COVID-19 vaccines in adolescents and children with autoimmune disease (including those who are immunocompromised)
- A pan-Canadian prospective observational pediatric cohort can provide relevant real-world evidence on uptake, safety and effectiveness
- Between May and December 2021, the majority of SickKids pediatric subjects aged 12-18 with a diagnosis of juvenile idiopathic arthritis, vasculitis, systemic lupus erythematosus or inflammatory bowel disease received two doses of the Pfizer COVID vaccine.
- Further data generation will continue through CITF's Vaccine Surveillance Reference Group

Authors: S. Bernatsky, R. Yeung

For more information, please contact :
rae.yeung@sickkids.ca

What is the current situation?

In May 2021, Health Canada authorized the Pfizer COVID vaccine for children aged 12-18. The National Advisory Committee on Immunization (NACI) is an external advisory body to the Public Health Agency of Canada (PHAC), providing recommendations and guidance on the use of vaccines in Canada. NACI recommendations on COVID-19 vaccines supported the use of COVID-19 vaccines in adolescent and pediatric populations of this age. However, evidence on the safety or immunogenicity of COVID-19 vaccines in pediatric/adolescent populations with autoimmune diseases is lacking.

What was the aim of the study?

We aimed to evaluate COVID-19 vaccines in Canadian adolescent and pediatric populations with juvenile idiopathic arthritis, vasculitis, systemic lupus erythematosus or inflammatory bowel disease, particularly those on immunosuppression.

How was the study conducted?

CAN-AIM supported the early development of a pan-Canadian prospective observational study of pediatric patients with autoimmune disease receiving COVID-19 vaccination. These patients have an intrinsically overactive immune system, so concerns existed regarding possible adverse events post-vaccination. Moreover, many of these patients receive immune-suppressive therapies, which could hamper their response to vaccination. We worked with existing pediatric/adolescent cohorts of patients with autoimmune diseases at the Hospital for Sick Children (SickKids) in Toronto, Canada, to help enroll subjects and collect data and biospecimens. As of April 2022, funding for these research activities has been taken on by the COVID Immunity Task Force (CITF) Vaccine Surveillance Reference Group.

What did the study find?

Early descriptive results from pediatric/adolescent subjects followed at SickKids demonstrated a strong uptake in immunization against COVID. As of December 2021, the majority of pediatric subjects aged 12-18 with a diagnosis of juvenile idiopathic arthritis, vasculitis, systemic lupus erythematosus or inflammatory bowel disease had received two doses of the Pfizer COVID vaccine, with a number beginning their third.

Data generation will continue with funding from CITF. Thus, going forward, CITF will oversee progress updates and outcome reports to NACI and PHAC.

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