

Reactogenicity of influenza vaccination in children with cancer and hematologic diseases.

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LETTER TO THE EDITOR

REACTOGENICITY OF INFLUENZA VACCINATION IN CHILDREN WITH CANCER AND HEMATOLOGIC DISEASES

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To the Editor:

Patients with cancer are at increased risk of influenza related hospitalization and death.¹ Influenza vaccine has been proven safe in adults with cancer,^{2,3} but reactogenicity in pediatric patients has been poorly characterized.⁴

All patients in the oncology and hematology clinic in a referral pediatric hospital in Mexico City who received the trivalent inactivated influenza vaccine during the 2020-2021 season were invited to participate in a telephone survey regarding adverse reactions to vaccination.

A questionnaire covering systemic and local symptoms, as well as the need for medical care or hospitalization was applied at days three, seven and fourteen after vaccination. The clinical record was reviewed in case of hospitalization.

Ninety children vaccinated from October 2020 to February 2021 agreed to participate and were included in the study; 54% were male and the median age was 9 years (interquartile range 6.7-14 years). Fifteen patients had a non-malignant hematologic disease and the rest had a diagnosis of cancer. The most frequent underlying conditions were acute leukemias (n= 37 acute lymphoblastic leukemia and 4 acute myeloid leukemia), malignant bone tumors (n= 8), lymphomas (n= 5), Langerhans cell histiocytosis (n= 4) and hemophilia A (n= 4).

Twenty-seven patients experienced any local or systemic reactions after vaccination. Pain in the site of injection was the most frequent symptom (22.2%), followed by headache (5.6%), fever (4.4%) and myalgias (4.4%). Most events were mild and resolved within 2 days (Table 1). No adverse reactions requiring medical attention were documented.

No patient experienced solicited or unsolicited adverse reactions after day three. One patient with hematopoietic stem-cell transplantation and graft-versus-host disease was vaccinated during a prolonged hospitalization and had fever for one day, with no other reactions reported. No patient required hospital admission in the fourteen days after vaccination.

Our findings are in line with those of a systematic review from 2013 which found no life-threatening events after influenza vaccination among 391 pediatric patients receiving chemotherapy for cancer. Low-grade fever and mild local reactions were no greater in children with cancer compared with healthy controls.⁴

A small randomized trial comparing the high-dose to the standard-dose trivalent influenza vaccine in children with acute lymphoblastic leukemia found no severe adverse events related to vaccination in any group.⁵ The most frequent adverse events were fatigue, pain and tenderness in the injection site. Most events were grades 1 or 2.

Individuals with hematologic diseases and those receiving chemotherapy for cancer are considered among high-risk groups who should be prioritized for influenza vaccination.⁶ However, a low compliance with immunization in this group of patients has been reported which could be related to a variety of factors, including lack of awareness of recommendations and concerns regarding efficacy and side-effects of vaccination.⁷⁻⁹

In conclusion, influenza vaccination appears to have a good reactogenicity profile among children with hematologic and oncologic diseases. Education regarding safety and efficacy of vaccination should be reinforced among caregivers of patients with increased risk of complications and their healthcare providers, and their concerns should be addressed to improve vaccine compliance.

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