Secondary Characteristics of Side Effects Experienced in Pediatric Oncology Patients Receiving the COVID-19 Vaccine

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Background

- The Coronavirus Disease 2019 (COVID-19) pandemic led to the swift development of multiple vaccines
- Common side effects of COVID-19 vaccination include lymphadenopathy and fever in healthy adults
- Fever and lymphadenopathy are concerning symptoms in children with cancer
- It is important to distinguish features of reactive lymphadenopathy to the vaccine versus concern for malignant tissue
- Vaccine hesitancy within the pediatric and adolescent hematology/oncology communities stems in part by a lack of data
- This study investigated the side effects of the COVID-19 vaccination in children with cancer and Sickle Cell Disease (SCD)

Methods

- Retrospective chart review utilizing patient data from Riley Hospital for Children
- Patients 0-30 years of age with cancer or SCD, diagnosed from January 2017 – December 2020
- Received any COVID-19 vaccination as of September 1, 2021

Results

Table 1: Demographics of Children with Cancer and Sickle Cell Disease

	Cancer Cohort	SCD Cohort
Characteristic	N (%)	N (%)
Unique Patients	122	37
Male Sex	68 (55.7)	15 (40.5)
Median age years (range)	18 (12-30)	17 (13-20)
Race		
White	112 (91.8)	1(2.7)
Asian	5 (4.1)	0
Black	4 (3.3)	36 (97.3)
Pacific Islander	1 (0.8)	0
Diagnoses		
Solid Tumor	33 (27.0)	
Leukemia	25 (20.1)	
CNS[3] Cancer	25 (20.1)	
Lymphoma	22 (18.0)	
SCD – HBSS		24 (64.9)
SCD – HBSC		12 (32.4)
Other	17 (13.9)	1 (2.7)

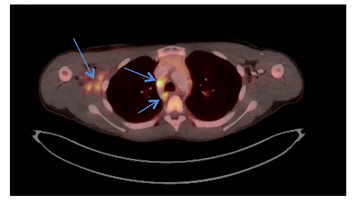
[3]Central Nervous System

Table 2: COVID-19 Vaccine Side Effects in Patients with Cancer and Sickle Cell Disease

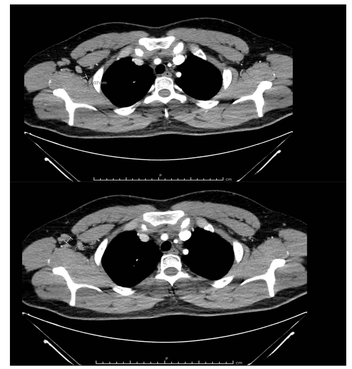
Characteristic	Cancer Cohort N (%)	SCD Cohort N (%)
Unique patients with reaction	3 (2.5)	3 (8.1)
Reported side effects with 8 weeks		
Fever	1 (0.82)	0
Chills	1 (0.82)	0
Myalgia	1 (0.82)	0
Headache	1 (0.82)	0
Lymphadenopathy	1 (0.82)	0
Other	0	3 (8.1)
Routine Surveillance Imaging	47 (38.5)	11 (29.7)
Incidental Lymphadenopathy	1 (0.82)	0

Lymphadenopathy Results

Patient A: Symptomatic lymphadenopathy detected on PET scan 4 days after 1st dose of Pfizer



Patient B: Incidentally detected lymphadenopathy on routine CT scan 1 day after 2nd dose of Pfizer



Discussion and Next Steps

- The majority of pediatric patients with cancer or SCD who received the COVID-19 vaccination had few side effects
- Occurrence of side effects were reflective of those seen in the general population
- Hematologists/oncologists should be aware of the post-vaccine course for patients to appropriately guide patients and families
- Future studies should continue to track and report side effects of COVID-19 vaccination

References and full affiliations available:

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