

SARS-CoV-2 infection in children and adolescents with cancer at a Pediatric Oncology Institution in Sao Paulo, Brazil.

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Introduction

The SARS-CoV-2 can potentially cause more severe disease in children and adolescents with cancer, since chemotherapy and cancer itself can alter the patient's immune function. There is a paucity of information about how this disease evolves in these patients.

Aim

Analyse the incidence and characteristics of SARS-CoV-2 infection in children and adolescents with cancer who presented respiratory symptoms, with confirmed infection by SARS CoV-2.

Methods

A case series of patients treated at the Pediatric Oncology Institute - GRAACC - UNIFESP, São Paulo Brazil. RT-PCR for SARS Cov-2 was collected in all patients under 21 years of age treated at the IOP-GRAACC from March 2020 to January 2021, which presented respiratory or other symptoms that could be related to SARS-CoV-2. Diagnoses were confirmed by RT-PCR in nasal swabs.

Results:

In 28 confirmed cases, the median age was 10 years (range 1-22). Hematologic malignancy were the most common underlying disease (16), followed by solid tumours (12).

Two patients died from underlying disease and other infection, 67 e 140 days after the 1st RT-PCR positive for SARS-CoV-2. In 10 patients, the manifestations were mild, with outpatient treatment.

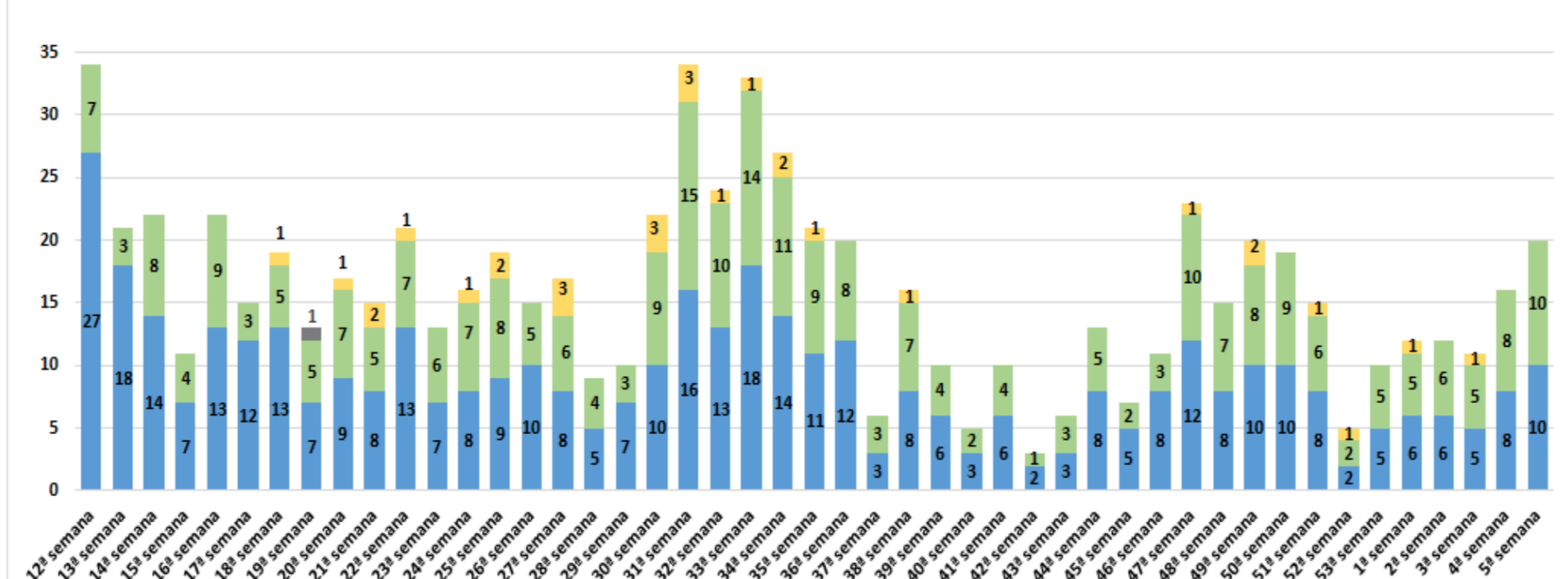
In 12, the manifestations were considered moderate, with admission to the ward. Nine cases required ICU. The median length of hospital stay was 8 days (range 1-81), and the ICU stay, 6 days (2-16).

Two patients required mechanical ventilation.

Pulmonary CT scans were performed in 14 patients, with ground-glass opacification observed in seven, and consolidation in one patient. One patient required continuous haemodialysis.

Five patients had neutropenia $<1000/\text{mm}^3$; median of neutrophils counts was 1730 (p25-75: 785-3310). Fourteen patients were lymphopenic. The lymphocyte median was $720/\text{mm}^3$ (p25-75: 370-1800). The median C-reactive protein was 49.8 mg/L (p25-75: 20-74.9). Interleukin 6 was measured in 11 patients, with a median of 41 pg/mL (p25-75: 11-320). D-dimer was measured in 16 patients, with a median of 1012 ng / mL (p25-75: 519-1409).

Suspected cases of COVID-19 treated at IOP-GRAACC/UNIFESP per epidemiological week.



Gray: inconclusive. Yellow: confirmed. Green: tested. Blue: cases attended.

Clinical and epidemiological characteristics of confirmed COVID-19 cases.

Patients	Inpatients	Age	Gender	Underlying disease	Neutropenia	Lymphopenia	ICU	Death
1	X	11y	F	ALL		X		
2	X	3y	F	ALL				
3	X	17y	F	ALL			X	
4	X	15y	M	ALL	X	X		X
5		5y	M	Solid tumor				
6	X	8m	M	Investigation				
7	X	14y	F	NHL		X		
8	X	15y	F	NHL		X	X	X
9	X	22y	F	Solid tumor			X	
10		10y	M	Solid tumor		X		
11	X	7y	M	AML	X	X	X	
12	X	7y	F	AML				
13		9y	M	ALL		X		
14		14y	F	NHL		X		
15	X	2y	M	AML				
16	X	15y	M	Solid tumor		X	X	
17		3y	M	ALL		X		
18	X	5y	M	AML	X	X	X	
19		4y	M	Solid tumor		X		
20		7y	F	Solid tumor				
21	X	15y	M	AML			X	X
22		3y	M	Solid tumor				
23	X	16y	M	Solid tumor	X	X		
24	X	17y	M	ALL	X	X	X	
25	X	5y	F	Lymphoma				
26	X	13y	M	Investigation				
27	X	11y	F	Solid tumor				
28		4y	M	Solid tumor				

Conclusions

Most children and adolescents with cancer in this series had mild and moderate symptoms, and the mortality can be considered low.

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