

SARS-CoV-2 infection in children in Parma

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Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which causes coronavirus disease 2019 (COVID-19), emerged from Wuhan, Hubei province, China, in late 2019 and has now reached pandemic status (1).

Coronaviruses typically cause mild upper respiratory tract infections; however, SARS-CoV-2, severe acute respiratory syndrome coronavirus (SARS-CoV) (3), and Middle East respiratory syndrome coronavirus (MERS-CoV) (4) have all been associated with severe illness and death. Common symptoms reported in adults with COVID-19 are fever, dry cough, and fatigue; severe cases have been associated with dyspnoea and bilateral ground-glass opacities on chest CT.

Severe COVID-19 in children is rare. To date, the largest review of children with COVID-19 included 2143 children in China. Only 112 (5,6%) of 2143 children had severe disease

(defined as hypoxia) and 13 (0,6%) children developed respiratory or multiorgan failure or acute respiratory distress syndrome (ARDS).

Data from 149,760 laboratory-confirmed COVID-19 cases in the United States occurring during February 12–April 2, 2020 were analyzed. Among 149,082 (99.6%) reported cases for which age was known, 2,572 (1.7%) were among children aged <18 years. Three deaths were reported among the pediatric cases included in this analysis (5).

The Spanish series in Madrid suggesting that only 2% of affected individuals are younger than

19 years and 60% of confirmed infections in children required hospital admission. Twenty five of 41 children with confirmed COVID-19 (60%) were

hospitalized, 4 of 41 (9.7%) were admitted to a pediatric intensive care unit (PICU), and 4 of 41 (9.7%) needed respiratory support beyond

nasal prongs. Of these, 1 of 4 (25%) had only 1 previous condition (recurrent wheezing). No patients died (6).

Children are susceptible to SARS-CoV-2 infection, but frequently do not have notable disease. Children with COVID-19 might not have reported fever or cough as often as do adults (7). Paediatric patients with COVID-19 had mild or asymptomatic disease accompanied by pneumonia

in about half the cases (8).

We evaluated children symptomatic and asymptomatic, with known contact with persons having confirmed or suspected SARS-CoV-2, at the “Barilla Children’s Hospital” of Parma.

Nasopharyngeal or throat swabs were obtained for detection of SARS-CoV-2 RNA by

established methods (9). The clinical outcomes were monitored up to April 19, 2020.

Of the 61 children assessed and tested from 26.02.2020 to 14.04.2020. A total of 14 (23 %) were confirmed to have SARS-CoV-2 infection.

Demographic data and clinical features are summarized in Table 1.

The median age of the infected children was 22 months. Fever was present in 100 of the children with median duration of 17 hours. Other common signs and symptoms included cough (35%) and pharyngeal erythema (50%). Nobody had pneumonia or necessity of oxygen therapy. 1 patient has febrile seizures. 1 patient has anemia and lymphopenia.

Table 1.

		Value (n.)	Value (%)
Swab	Total	61	
	Positive	14	22,95
	Inpatient	47	11,47
Epidemiological and clinical characteristics of children with SARS-CoV2 infection			
Age			
Median		22 months	
Distribution	< 1 year	7	50
	01-05 yr	3	21,4
	06-10 yr	1	7,14
	11-15 yr	3	21,4
Sex	Male	9	64,28
	Female	5	35,71
Diagnosis	Asymptomatic infection	0	0
	Upper respiratory tract infection	14	100
	Pneumonia	0	0
Contact			
Family cluster	Confirmed	3	21,4
	Suspected	7	50
Non family cluster		1	7,14
Unidentified source		4	28,57
Signs and symptoms	Fever	14	100
	Cough	5	35,7
	Pharyngeal erythema	7	50
	Diarrhea	2	14,28
	Vomiting	2	14,28
	Inappetence	3	21,4
	Exanthema	2	14,28
	Neurologic symptoms	2	14,28
Fever during hospitalization			
Median duration of fever		17 hours	
Highest temperature	< 37,5 °C	1	14,28
	37,6 – 38 °C	3	42,8
	38,1 – 39 °C	1	14,28
	> 39,1 °C	2	28,5

In contrast with infected adults, infected children appear to have a milder clinical course. Asymptomatic children play a role in a transmission and spread of COVID-19. For this reasons preventive behaviors are recommended for persons of all ages.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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