Frequency of SARS-CoV-2 Positivity Among Children Presenting With Gastroenteritis in Emergency Department

To the Editors:

SARS-CoV-2 infection typically presents with respiratory symptoms, such as rhinitis, cough and dyspnea.[1] Although children affected by SARS-CoV-2 might also present uniquely with vomiting or diarrhea,[2] the frequency of SARS-CoV-2 positivity among children presenting with an acute gastroenteritis is currently unknown.[3,4] The primary aim of this study was to investigate the frequency of SARS-CoV-2 positivity among children with gastroenteritis. The secondary aims were to compare the frequency of SARS-CoV-2 positivity among children with gastroenteritis, with an acute respiratory disease or without any symptom of infection. At the emergency department (ED) of the Fondazione Ca' Granda Policlinico, Milan, Italy, children presenting with gastroenteritis or a respiratory disease undergo a nasopharyngeal swab for the detection of SARS-CoV-2 by a molecular test. Children requiring an immediate hospitalization are also tested, regardless of their symptoms.[5] For this study, we included all children <18 years of age visiting the ED from December 21, 2020, to March 20, 2022, with gastroenteritis (ie, >3 episodes of vomiting or diarrhea in 24 hours). For each child with gastroenteritis, one child with a respiratory disease (rhinitis, cough or dyspnea) and one child requiring hospitalization for conditions without any symptom of infection (eg, trauma) during the same period were included. These children were matched for age (±6 months) and encounter date (±10 days) with those presenting with gastroenteritis.

TABLE 1. Characteristics of Children With Acute Gastroenteritis, Respiratory Disease or Without Any Symptom of Infection Admitted to the ED Between December 21, 2020, and March 20, 2022

	Gastroenteritis	Respiratory Disease	No Symptom
N	410	410	410
Age, y	3.9 [1.5–8.3]	3.4 [1.4–6.8]	3.9 [1.2–8.7]
Male	239 (58)	231 (56)	243 (59)
Fever	205 (50)	265 (65)*	0
SARS-CoV-2 positivity	33 (8.0)§	27 (6.6)‡	13 (3.2)†

Children of the 3 groups are matched for age and encounter date. Data are presented as median and interquartile range or frequency and percentage (%).
*$P < 0.001$ gastroenteritis vs. respiratory disease.
‡$P = 0.5$ gastroenteritis vs. respiratory disease.
§$P = 0.004$ gastroenteritis vs. no symptom.
†$P = 0.034$ respiratory disease vs. no symptom.

Subjects with both gastrointestinal and respiratory symptoms or without a SARS-CoV-2 swab test were excluded. Children reporting a close contact with a subject with SARS-CoV-2 in the previous 7 days were also excluded. Information on age, sex, date of encounter and the presence of fever (≥37.5 °C) was retrospectively extracted.

Data are given as median and interquartile range or frequency, percentage and 95% confidence interval (CI). The χ^2-test was used to compare the frequency of SARS-CoV-2 positivity among the 3 study groups.

In the study period, 423 children presented to the ED with acute gastroenteritis. The molecular test for SARS-CoV-2 was not available in 13 children. Therefore, 410 children [3.7 (1.4–8.2) years] with gastroenteritis, 410 with a respiratory disease and 410 hospitalized without any infectious symptom were included (Table 1). Fever was more frequent ($P < 0.001$) in children with respiratory disease than in those with gastroenteritis. The prevalence of SARS-CoV-2 positivity was similar in children with gastroenteritis and with a respiratory disease [8.0% (5.6%–11%) vs. 6.6% (4.4%–9.4%), respectively; $P = 0.5$], and lower in those without any infectious symptom [3.2% (1.7%–5.4%); $P = 0.004$]. Among children with fever, those with gastroenteritis and those with a respiratory disease had a similar frequency of SARS-CoV-2 positivity [8.8% (5.3%–14%) vs. 6.0% (3.5%–9.6); $P = 0.3$].

These data suggest that the frequency of SARS-CoV-2 is similar in cases with acute gastroenteritis and with a respiratory disease. Furthermore, both children with respiratory disease and gastroenteritis are more frequently SARS-CoV-2 positive than children without any symptom of infection. Although data were retrospectively collected in a single center, this study has potential implications for clinicians and health policymakers and helps assessing the pretest probability of SARS-CoV-2 positivity among children in ED.

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Health and Vaccination Status of Unaccompanied Minors After Arrival in a European Border: Correspondence

To the Editors:

We would like to discuss the publication "Health and Vaccination Status of Unaccompanied Minors After Arrival in a European Border Country (UASC): A Cross-sectional Study (2017–2020).[1] "The study, according to Carreras-Abad et al., highlighted the need for screening and vaccination programs for UASC in Europe, particularly border nations."[1] The relevance of screening in asymptomatic minors is highlighted by the fact that protocols should be changed following geographic origin and that the absence of symptoms does not necessarily rule out infection. In light of the current COVID-19 pandemic, Carreras-Abad et al. stated that these programs are public health priorities and should not be overlooked.[1] We both agree that the COVID-19 prevention program for migrants and children entering a new country's border region is a crucial issue. Because of its history of serving underprivileged groups, the UASC is frequently neglected and mismanaged. Obtaining a proper immunization or preventative measure at home or in a foreign location is challenging for the UASC. It is critical to conduct the illness screening indicated by Carreras-Abad et al.[1] Additionally, it is critical to have a strategy in place for handling screened positive cases.[2] Amid the COVID-19 pandemic, there are still a lot of UASC in Southeast Asia, and there is some concern about how to manage these UASC effectively. The common practice of border closure can make it impossible for children from disadvantaged backgrounds to access medical care. If there are migrants in the new country, it is typically difficult to obtain information about COVID-19 management, including vaccination, before migration. The need for importance of COVID-19 immunization plan for migrants is a crucial aspect of today's transboundary pediatrics.

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Better Comprehension of Primary Pyogenic Spinal Infections

To the Editor:

Some years ago, childhood spondylodiscitis was used to describe a continuum of primary pyogenic spinal infections (PPSIs), from discitis to vertebral osteomyelitis, including spondylodiscitis with its occasional associated soft-tissue abscesses. The pathophysiology of PPSIs has, nevertheless, become clearer and less controversial. The theory suggesting that spondylodiscitis was a self-limiting inflammatory condition is now considered completely obsolete. A better understanding of pathophysiological processes has made it possible to differentiate forms of childhood PPSI according to patients' ages, their immune system development, better knowledge of their bacterial etiology, and the vascularization of their vertebrae and disks. The different clinical forms of PPSI have now been categorized in various ways that physicians and pediatricians should know.

The first classification is based on the child's age and the development of their immune system, and it distinguishes three main clinical forms of childhood PPSI. The neonate form of spondylodiscitis generally affects infants under 6 months old and is recognized as the most severe manifestation of the disease: patients often present with septicemia and multiple infectious foci. Fortunately, this is the rarest form of the disease. The infantile form concerns children from 6 to 48 months old (a period during which maternally derived immunity decreases and stops), the age group representing 60%–80% of cases of childhood spondylodiscitis. Finally, in the third form, affecting children above 4 years old, patients are more prone to being febrile and appearing very ill.

The second classification can be superimposed on the first and assigns each age group a bacterial probability of spondylodiscitis. Approximately 80% of spondylodiscitis cases in children younger than 6 months are due to *S. aureus*. For children from 6 to 48 months old, there are now robust arguments supporting the hypothesis that *K. kingae* should be considered the primary etiological pathogen for spondylodiscitis. The third form affects children older than 4 years of age, and *S. aureus* is the predominant pathogen.

Finally, a third classification is based on the anatomical characteristics of the patient's vertebral endplate and disk vascularization. Many studies have demonstrated that the vertebral endplates and the superficial portion of the disks share a common blood supply at birth that gradually regresses during infancy. In children, the metaphysis of the vertebral body has a rich blood flow, with an incomplete vascular ring ending at the pedicle's base. Otherwise, it has been shown that several fine anastomotic branches exist between the upper and lower metaphyseal rings of two adjacent vertebrae, mostly present around

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