

SARS-CoV-2 Infection in Children

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Abstract

As of March 10, 2020, the 2019 novel coronavirus (SARS-CoV-2) has been responsible for more than 110,000 infections and 4000 deaths worldwide, but data regarding the epidemiologic characteristics and clinical features of infected children are limited.¹⁻³ A recent review of 72,314 cases by the Chinese Center for Disease Control and Prevention showed that less than 1% of the cases were in children younger than 10 years of age.² In order to determine the spectrum of disease in children, we evaluated children infected with SARS-CoV-2 and treated at the Wuhan Children's Hospital, the only center assigned by the central government for treating infected children under 16 years of age in Wuhan. Both symptomatic and asymptomatic children with known contact with persons having confirmed or suspected SARS-CoV-2 infection were evaluated. Nasopharyngeal or throat swabs were obtained for detection of SARS-CoV-2 RNA by established methods.⁴ The clinical outcomes were monitored up to March 8, 2020.

Of the 1391 children assessed and tested from January 28 through February 26, 2020, a total of 171 (12.3%) were confirmed to have SARS-CoV-2 infection. Demographic data and clinical features are summarized in [Table 1](#). (Details of the laboratory and radiologic findings are provided in the [Supplementary Appendix](#), available with the full text of this letter at NEJM.org.) The median age of the infected children was 6.7 years. Fever was present in 41.5% of the children at any time during the illness. Other common signs and symptoms included cough and pharyngeal erythema. A total of 27 patients (15.8%) did not have any symptoms of infection or radiologic features of pneumonia. A total of 12 patients had radiologic features of pneumonia but did not have any symptoms of infection. During the course of hospitalization, 3 patients required intensive care support and invasive mechanical ventilation; all had coexisting conditions (hydronephrosis, leukemia [for which the patient was receiving maintenance chemotherapy], and intussusception). Lymphopenia (lymphocyte count, $<1.2 \times 10^9$ per liter) was present in 6 patients (3.5%). The most common radiologic finding was bilateral ground-glass opacity (32.7%). As of March 8, 2020, there was one death. A 10-month-old child with intussusception had multiorgan failure and died 4 weeks after admission. A total of 21 patients were in stable condition in the general wards, and 149 have been discharged from the hospital. This report describes a spectrum of illness from SARS-CoV-2 infection in children. In contrast with infected adults, most infected children appear to have a milder clinical course. Asymptomatic infections were not uncommon.² Determination of the transmission potential of these asymptomatic patients is important for guiding the development of measures to control the ongoing pandemic.