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## Severe neutropenia in infants with severe acute respiratory syndrome caused by the novel coronavirus 2019 infection

### To the Editor:

Infection with severe acute respiratory syndrome caused by the novel coronavirus 2019 (SARS-CoV-2) and resulting coronavirus disease 2019 (COVID-19) is a global pandemic.<sup>1</sup> Pediatric cases have some peculiarities, such as milder clinical manifestations and different laboratory abnormalities.<sup>2</sup> A systematic review on laboratory data identified 12 articles, with a total of 66 pediatric patients.<sup>3-15</sup> Lymphopenia was found in only 3% of children, whereas lymphopenia often is described in adult patients.<sup>16,17</sup> Neutropenia was recorded in 6% of cases, but it was never less than  $0.500 \times 10^9/L$  in this population.<sup>3</sup>

We describe a 23-day-old and a 39-day-old infant with mild COVID-19 and severe neutropenia who were cared for at our tertiary care referral pediatric hospital. They both came to medical attention with low-grade fever and mild respiratory symptoms with a history of contact with an infected person or persons. At admission, leukocyte and neutrophil

counts were normal, nasopharyngeal swab tested positive for COVID-19, and co-infection with influenza-like viruses was excluded. On the fifth day and days after the beginning of symptoms, the 39-day-old girl and the 23-day-old girl developed severe neutropenia, with a nadir of  $0.244 \times 10^9/L$  neutrophils and  $0.482 \times 10^9/L$  neutrophils, respectively (Figure). No other alterations on routine examinations were recorded and the neutrophil values improved without clinical complications.

The presence of isolated severe neutropenia has not been described in children with COVID-19. This finding is noteworthy, because postinfectious transient neutropenia has been associated with many other viral infections in infancy, which might share pathogenic mechanisms.<sup>18,19</sup> Moreover, the evidence of neutropenia in neonates and infants could be another manifestation of the age-related different immunologic response to SARS-CoV-2 infection.

Complete blood counts might be indicated 5-7 days after illness onset to detect neutropenia. We hope to alert providers to evaluate children, especially the youngest, with evidence of new symptoms during the second week after onset of illness to exclude severe neutropenia and possible secondary infection.

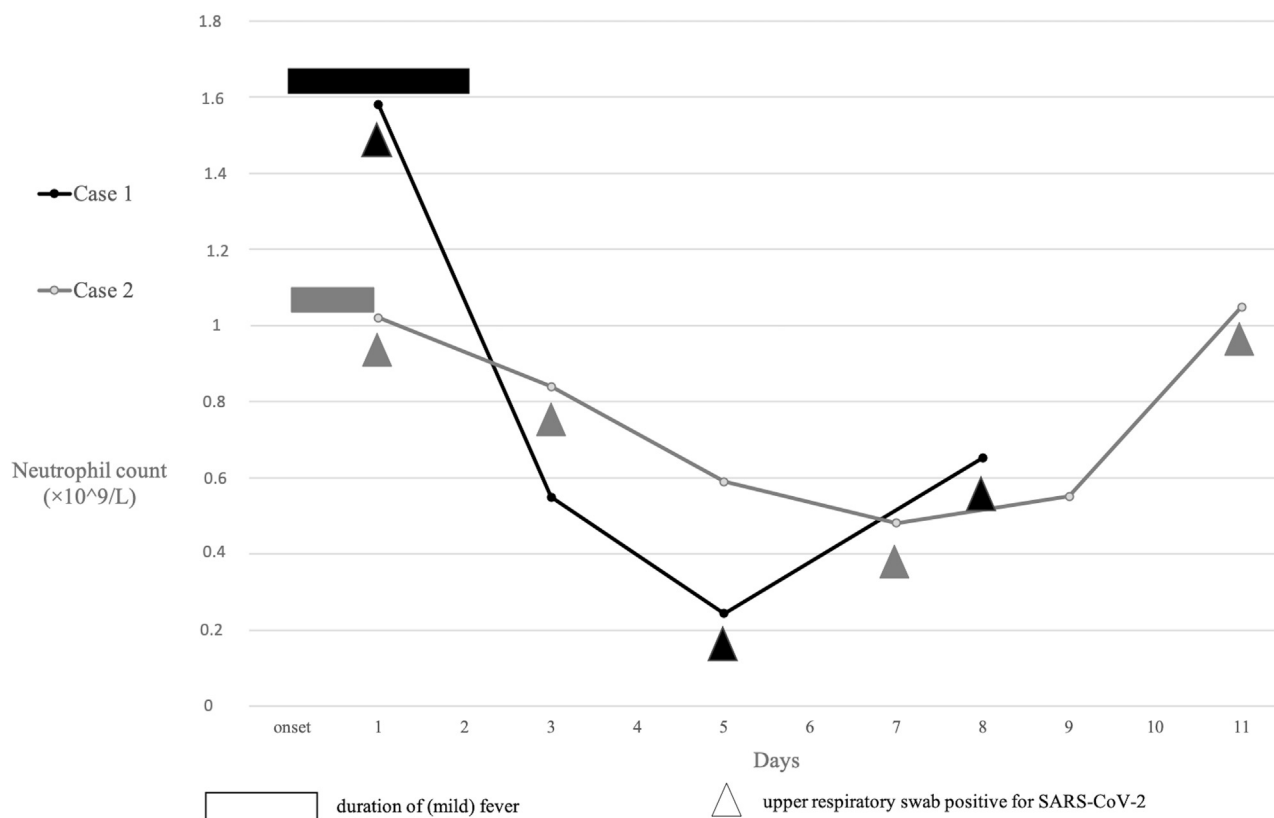


Figure. Absolute neutrophil counts in two infants with SARS-CoV-2 infection.

**Elisabetta Venturini, MD, PhD**  
Pediatric Infectious Disease Unit  
Meyer Children University Hospital

**Giordano Palmas, MD**  
Department of Health Sciences  
University of Florence

**Carlotta Montagnani, MD, PhD**  
Pediatric Infectious Disease Unit  
Meyer Children University Hospital

**Elena Chiappini, MD, PhD**  
Pediatric Infectious Disease Unit  
Meyer Children University Hospital  
Department of Health Sciences  
University of Florence

**Francesco Citera, Bs**  
**Valeria Astorino, Bs**  
**Sandra Trapani, MD**  
Department of Health Sciences  
University of Florence

**Luisa Galli, MD**  
Pediatric Infectious Disease Unit  
Meyer Children University Hospital  
Department of Health Sciences  
University of Florence  
Florence, Italy

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