Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to the editor

Was child abuse underdetected during the COVID-19 lockdown?

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On December 31, 2019, a new infectious respiratory disease (subsequently referred to as coronavirus disease 2019 [COVID-19]) was reported to the World Health Organization [1]. As COVID-19 continues to spread across the world, many countries have taken exceptional health measures (e.g., physical distancing and containment) to reduce transmission of the disease. In France, the government imposed a nationwide lockdown period from March 16 to May 11, 2020. The entire French population was instructed to stay at home as much as possible and to avoid nonessential travel. Childcare centers and schools were closed, out-of-school activities were no longer possible, and thus children had to spend more time at home.

Social isolation is known to be a risk factor for child abuse [2,3]. Researchers have found that all types of child abuse become more frequent during school holidays, summer breaks, and natural disasters (disease outbreaks, hurricanes, etc.) [2]. Women in an abusive relationship and their children are more likely to be exposed to domestic violence and abuse when family members spend more time in close contact with each other and when families have to cope with additional stress, financial problems, and/or unemployment [4].

We collected data on 31 children (under the age of 18) at risk of abuse who were admitted to the emergency department and pediatric wards at Amiens university hospital (Amiens, France) during the French lockdown period. There were 16 supervision orders and 10 interim care orders, and seven children were subsequently placed in foster care. The local Child Welfare Office (*Cellule de Recueil des Informations Préoccupantes*) recorded a significant year-on-year decrease in the number of supervision orders. During the months of March, April, and May 2020, schools (the main source of orders) prompted only 24 orders, compared with 136 for the same period in 2019. Similarly, the state prosecution service issued a total of 45 supervision orders for the March–May period in 2020, versus 136 for the same period in 2019. The national child abuse helpline submitted 39 requests for supervision orders to the Child Welfare Office during March–May 2020, versus 42 for the same period in 2019.

It is known that emergencies and natural disasters increase the risk of child abuse because they weaken child protection services and disrupt preventative measures [3,4]. The lack of social care and monitoring during a lockdown means that domestic violence and child abuse may go unreported. During France's lockdown period, consultations in maternity wards and child welfare services were restricted to emergencies. Parent–child meetings in the presence of a social worker were suspended, and daycare centers for disabled children were closed. The government's instructions to stay at home and the fear of catching COVID-19 led to a sharp decline in visits to emergency departments and in hospital appointments (by 45% for adults and by 70% in pediatric wards since mid-March 2020), which in turn led to reduced opportunities for screening for child abuse [4,5].

From the beginning of lockdown to April 22, 2020, 92 children were placed in care by the French courts nationally [6]. However, the decrease in reports of suspected abuse during the lockdown (due to school closures and the disruption of child welfare services) reflects a lack of screening rather than a decrease in actual abuse. Sadly, some isolated cases of child abuse during the lockdown will probably not be detected because the family was not officially "at risk" and/or because the abused children have not yet returned to school.

Furthermore, the French national child abuse helpline received 14,531 calls between April 13 and 19, 2020, compared with 7674 over the same period in 2019 – an 89.4% increase. Between March 16 and April 12, 2020, home visits by law enforcement officers increased by 48% year-on-year [6]. We hypothesize that some local child welfare offices switched their calls to the national helpline because some of their staff were teleworking. Secondly, a national awareness and information campaign on domestic violence was launched during the lockdown via France's main newspapers, television channels, and social networks, and in supermarkets. Hopefully, the child abuse helpline and the information campaign have helped to detect child abuse that would otherwise have been diagnosed only after the lockdown period.

There are several other potential ways of detecting and preventing child abuse during emergencies and natural disasters:

- the use of teleconsultations and video conferencing on smartphones to check on at-risk children and to prevent social isolation;
- the maintenance of home visits by social workers using personal protective equipment (facemasks, hand sanitizer, etc.) and;
- the administration of a health questionnaire and a child abuse screening tool, and a consultation with the school health team when children return to school.

Disclosure of interest

The authors declare that they have no competing interest.

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Epidemiology, clinical features, and outcomes of hospitalized infants with COVID-19 in the Bronx, New York

Novel coronavirus disease 2019 (COVID-19), caused by highly contagious severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is an ongoing global health emergency. Since its first occurrence in December 2019, SARS-CoV-2 has rapidly spread worldwide, leading to more than five million cases and almost 400,000 deaths [1]. Despite a rapidly growing report on clinical characteristics and outcomes of SARS-CoV-2 patients, there are minimal data on infants. Herein, we discuss the epidemiology, clinical characteristics, and outcomes of infants 1 year of age or younger who had a positive RT-PCR test result for SARS-CoV-2 and were admitted to our hospital before April 26, 2020.

A total of five infants were identified: three (60%) girls and two (40%) boys. The median age of the infants was 3 months (range: 10 days to 10 months). Three (60%) infants were healthy, one infant had congenital heart disease (ventricular septal defects), and one infant was born prematurely and had a history of neonatal respiratory distress syndrome and gastroesophageal reflux. Two (40%) infants were obese, defined as a body mass index greater than the 95th percentile for infants of the same age and sex. Four infants (80%) had a history of contact with someone who was sick, of whom one infant's mother had recently died from suspected SARS-CoV-2 pneumonia. One infant (20%) was exposed to secondhand smoke; two (40%) infants were breastfed.

The most prevalent presenting symptoms were fever (4 infants, 80%) and nasal congestion (3 infants, 60%). One infant presented with a cough (20%). None had diarrhea or vomiting. The median duration from symptom onset to admission was 3 days (range: 1–3 days).

Three (60%) infants had neutropenia with lymphocytosis. None had lymphopenia or thrombocytopenia. Procalcitonin levels were mildly elevated (range: 0.09–0.2 ng/mL) in four (80%) infants and were normal in one (20%) infant. Four (80%) infants had abnormal chest X-ray findings consistent with viral pneumonia, while one (20%) infant had a normal chest X-ray. For all infants, the blood culture, influenza, and respiratory syncytial virus test results were negative.

None required supplemental oxygen nor invasive mechanical ventilation. None of the infants had acute kidney injury or shock. The median length of hospital stay was 5 days (range: 2–11 days). All infants received symptomatic treatment without specific antiviral medications. One infant received steroids for 5 days for possible acute bronchiolitis.

The clinical features and outcomes of infants with COVID-19 in our case series are different from those reported for adults [2,3]. Isolated fever and nasal congestion were common presentations. Obesity was also frequent in infants with COVID-19 but it did not seem to be associated with disease severity. Passive smoking and breastfeeding might not be related to the risk of developing COVID-19 nor impact its clinical course. All of the infants in our report had favorable prognoses and were discharged home safely.

Our study revealed a benign course of COVID-19 in infants, similar to previously published reports [4,5]. The reasons why infants have better prognoses than those of adults remain unknown. We proposed two possible mechanisms underlying the more favorable courses of COVID-19 in infants:

- low expression of angiotensin-converting enzyme (ACE2) receptors in infant lungs;
- immaturity of the infant immune system.

SARS-CoV-2 binds to ACE2 receptors to enter human cells [6]. ACE2 receptors are predominately expressed by type 2 pneumocytes in the lungs explaining why pneumonia is the most prevalent clinical manifestation of COVID-19 [6]. The infant's lungs are not fully developed, with incomplete expression of ACE2 receptors and their underlying pathway. Thus, SARS-CoV-2 may have lower infectivity and virulence in infants than in adults due to the limited entry and functional pathway.

Interestingly, infants with COVID-19 tend to have neutropenia with lymphocytosis. This may be explained by the immaturity of the infant immune system with possibly fewer cytokine responses. The deficit in B-cell function is characteristic of the immature immune development in babies, especially those younger than 6 months. We recently hypothesized that preexisting B-cell suppression has a positive impact on prognosis of COVID-19 [7]. Therefore, favorable COVID-19 outcomes in infants may at least partly be due to their underdeveloped B-cell function.

In conclusion, the clinical course of COVID-19 in infants from our case series seemed more favorable than in adults. However, due to the small number of infants, further research is needed to verify our observation and investigate the underlying causes. Although the clinical outcome of COVID-19 in infants tends to be non-lethal, clinicians should be aware that infants also may