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Febrile Infant: COVID-19 in Addition to the Usual Suspects

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becoming a public health emergency. In Italy, first cases are reported from February 2020 and since then the virus has spread quickly in all regions. On 11th March, World Health Organization has declared Coronavirus disease 2019 (COVID-19) outbreak. Coronavirus belongs to the *Coronaviridae* family, *Nidovirales* order, and the 2019-nCoV belongs to the β -coronavirus genus.¹ Nowadays the elderly and those with underlying chronic diseases are more likely to become severe cases. Thus far, all pediatric cases in China with laboratory-confirmed 2019-nCoV infection were mild cases, and no deaths had been reported.²

The transmission of the 2019-nCoV infection happened through the respiratory droplets by infected patients, but coronavirus can also be transmitted by contact with contaminated objects, such as phones, toys and doorknobs³; however, also asymptomatic cases play a critical role in the transmission process.

Children are considered suspected if they presented fever, cough, breathing difficulties, gastrointestinal symptoms or are related with a cluster outbreak or close contact with 2019-nCoV infected/suspected cases.

All pediatric suspected cases are isolated with only one parent in special single rooms set up for sanitary emergency. It is increasingly necessary to clean and disinfect the articles used by little patients and their caregivers.²

Besides various types of personal protective equipment (PPE) are recommended and used by hospital healthcare workers (HCWs) to protect from infection, including high-filtration medical masks such as FFP2 or FFP3, gloves, gowns, goggles and face shield. The protective equipment is disposable, and for each patient, it is necessary to don and doff them about 5–6 times a day. The estimated average donning time according to the correct procedures is 3–4 minutes, while the doffing time is about 1–2 minutes; however, the doffing phase is the most dangerous because of the risk of contamination. It has been reported that about 15% of all HCWs become infected by COVID-19 after 10 days of work in emergency department (ED), due to the contact with the patients.

In this period, there is enormous demands for PPE, especially medical masks, used not only by HCWs but also by all community. Therefore, on one side it is important to reduce any unnecessary potential exposure to infection, but on the other we must keep in mind the importance of communication with patients and their caregivers, especially in a pediatric setting.

It is interesting to take inspiration from telemedicine, which uses a lot of audio-video technologies to improve patient health by facilitating interactions between patients and clinicians or between 2 or more clinicians.⁴ Our hospital tried to adapt to COVID-19 health emergency in a short time. So, some dedicated rooms to lockdown infected children, without an interphone or telemetry system, were set up, cameras were positioned inside, and handheld transceivers (HTs) were given to the parents for communication with the HCWs. HTs let these interactions be synchronous, wherein parties engage in real-time, 2-way communication, without any delay of time.

In this way, we significantly reduced the number of clinical evaluations carried out on the patient and therefore the use of PPE, reducing exposure to potential infectious sources. We believe that HT can be a useful tool both to save PPE and also to protect HCWs during COVID-19 outbreak.

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REFERENCES

- Zhu N, Zhang D, Wang W, et al: China Novel Coronavirus Investigating and Research Team. A novel coronavirus from patients with pneumonia in China, 2019. *N Engl J Med*. 2020;382:727–733.
- Shen K, Yang Y, Wang T et al. Diagnosis, treatment, and prevention of 2019 novel coronavirus infection in children: experts' consensus statement. *World J Pediatr*. 2020; doi: 10.1007/s12519-020-00343-7
- Cao Q, Chen YC, Chen CL, et al. SARS-CoV-2 infection in children: transmission dynamics and clinical characteristics. *J Formos Med Assoc*. 2020;119:670–673.
- Coomes CE, Gregory ME. The current and future use of telemedicine in infectious diseases practice. *Curr Infect Dis Rep*. 2019;21:41.

Febrile Infant: COVID-19 in Addition to the Usual Suspects

To the Editors:

SARS-CoV-2, the RNA coronavirus etiologic agent of pneumonias that appeared in December 2019 was sequenced and confirmed in January 2020 by the Chinese Center for Disease Control and Prevention.¹ The World Health Organization on March 11 officially designated COVID-19 a pandemic as it spread rapidly to 196 countries with over 54,000 confirmed cases in the United States alone.²

While reports about the virus have focused on the adult population, the largest study on children to date has been reported from China by Dong et al. Their clinical severity analysis, which included both COVID-19-positive patients and those with a high index of suspicion, revealed that severe (ie, respiratory distress) and critical (ie, ARDS or shock) occurred in 5.9% of children compared with 18.5% in adults, with infants below age one comprising the highest proportion.³

We report a previously healthy, fully vaccinated, late preterm, 58-day-old male who presented with fever. On the day of admission, he was sleeping longer than normal, had watery eye discharge with periorbital erythema and a rectal temperature of 101.2F. Stools were softer and greener for the past 2 days. There was no respiratory distress, cough, decreased intake, decreased frequency of wet diapers, sick contacts, or travel.

Physical examination revealed T 100.8F (rectal), HR 176 beats per minute, slight fussiness, glassy eyes with mild surrounding erythema, soft anterior fontanelle, normal tympanic membranes bilaterally, and mild nasal congestion. The rest of his examination was normal. Laboratory assessment showed complete blood count: white blood cells (WBC) 5.44 k/ μ L (normal: 4.0–19.5 k/ μ L) with 43% neutrophils (ANC 2497/ μ L; normal: 1000–12,500/ μ L), 34% lymphocytes (ALC 1.86 k/ μ L, normal: 4.0–13.5), 10% monocytes, 10% eosinophils, 2.5% reactive lymphocytes. Platelets 278 K/ μ L (normal: 150–350 K/ μ L) and a mildly anemic hemoglobin at 9.2 g/dL (normal: 9.4–11.2 g/dL). Comprehensive metabolic panel was normal except for a mildly elevated alkaline

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phosphatase and calcium. Urinalysis: 6 RBC, 23 white blood cells, no bacteria or leukocyte esterase. Blood culture and urine culture were negative. Chest radiograph was normal. Rapid flu, respiratory syncytial virus and respiratory viral panel were negative, and a COVID-19 test was performed. The patient was treated with one dose of intramuscular ceftriaxone and acetaminophen for fever.

Eighteen hours after admission, the patient was afebrile, without further need for antipyretics, with diminished periorbital erythema and HR 140–149 beats per minute. He was discharged home with instructions to keep him and his family quarantined, pending his COVID-19 test results, which came back positive 24 hours later. The patient and his family remained well after discharge.

This case demonstrates that presentation of COVID-19 is non-specific and easily attributed to many etiologies. Previous

reports indicate that children with COVID-19 have variable presentations including asymptomatic, nausea, vomiting, diarrhea, congestion, fever, dry cough, pneumonia, fatigue, lymphopenia, and/or neutropenia.⁴

Despite being in the highest risk subgroup of children, the patient in this report recovered within 24 hours of admission.

We conclude that during this new pandemic, providers must consider COVID-19 in infants presenting with fever and minimal other findings or historical risk factors.

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REFERENCES

1. Tan WJ, Zhao X, Ma XJ, et al. A novel coronavirus genome identified in a cluster of pneumonia cases — Wuhan, China 2019–2020. *China CDC Weekly*. 2020;2:61–62. [Epub ahead of print]
2. Cases in U.S. Centers for Disease Control and Prevention. 2020. Available at: <https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html>. Accessed March 22, 2020.
3. Dong Y, Mo X, Hu Y, et al. Epidemiological characteristics of 2143 pediatric patients with 2019 coronavirus disease in China. *Pediatrics*. 2020;pii:e20200702. [Epub ahead of print]
4. Shen K, Yang Y, Wang T, et al. Diagnosis, treatment, and prevention of 2019 novel coronavirus infection in children: experts' consensus statement. *World J Pediatr*. 2020. [Epub ahead of print]