Epidemiological update on SARS-CoV-2 infection in Spain. Comments on the management of infection in pediatrics☆

Actualización de la situación epidemiológica de la infección por SARS-CoV-2 en España. Comentarios a las recomendaciones de manejo de la infección en pediatría

Dear Editor:

Since the development of the document ''Recomendaciones sobre el manejo clínico de la infección por el «nuevo coronavirus» SARS-CoV2'',[1] there have been substantial changes in the epidemiological situation in Spain. At present, more than 500 cases of coronavirus disease 2019 (COVID-19) have been detected, with the disease affecting all age groups, including children. Currently, the most important epidemiological factor linked to the disease is contact with individuals with confirmed infection, although travel to an area considered to be high-risk, such as Northern Italy, which is quite frequent due to its proximity to Spain, is also a significant factor.[2]

Several paediatric case series have been published in China, confirming that paediatric cases amount from 0.8% to 2% of the total detected. The clinical presentation is mild in most children, even in infants, with fever of short duration and cold-like symptoms.[3–6] The articles published so far have not reported an association with wheezing. Blood tests in children are usually normal and computed tomography (CT) scans reveal the presence of patchy infiltration (not always detectable in chest radiographs). There is evidence that children, even in cases of mild disease, can be an important source of transmission, with a rate of infection of close contacts of 7.4% in children aged less than 10 years, similar to the mean rate in the adult population of 7.9%.[7] There is also evidence that children may shed virus, mainly in stools, for a prolonged time that may even reach 1 month, and that respiratory secretions in children may have high viral loads.[8] No deaths have been reported in children under 10 years and most recover in 14–30 days. No data are currently available on infection in immunocompromised children.

When it comes to treatment, some of the patients described in the literature[6] have received lopinavir/ritonavir despite having mild illness. We await the results of a clinical trial with lopinavir/ritonavir, which will shed light on the possibility of using this antiretroviral drug for treatment of COVID-19, as its efficacy is currently uncertain. Multiple studies in adults are comparing combination therapy with the antimalarial drugs chloroquine and hydroxychloroquine and other antivirals, although there are no data on the paediatric population. Remdesivir, the nucleotide analogue antiviral developed to treat Ebola, continues to be the drug considered most promising to be effective, and dosages of this drug have been established for the paediatric population. Its use for treatment of COVID-19 is off-label and a request for authorisation must be placed with the Agencia del Medicamento y Productos Sanitarios (Spanish Agency of Medicines and Medical Devices AEMPS).

At the time of this writing, 6 cases of COVID-19 have been detected in children in Spain, 2 in the autonomous community of Castilla La Mancha and 5 in the Community of Madrid, out of a total of 500 cases, which amounts to a proportion of approximately 1%.

As of March 7, 2020, less than 10 days after the first case of COVID-19 was reported in Madrid, at least 63 patients aged less than 14 years (54% male) have been tested for SARS-CoV-2 by means of polymerase chain reaction (PCR). The mean age of these patients was 4.5 years, and 10 (16%) had underlying disease. Of the 63 patients known to have been tested, 13 (20%) were contacts of confirmed COVID-19 cases, 15 (28%) were patients with compatible symptoms and risk factors (travel to high-risk area or close contact with adults with compatible symptoms and a history of travel to a high-risk area), and 35 (63%) were patients admitted to hospital with severe respiratory illness and no known epidemiological risk factors. The most frequent clinical presentation in these patients was pneumonia ($n = 32/35$; 91%), with or without associated wheezing (Table 1). The presence of SARS-CoV-2 has been confirmed by testing of nasopharyngeal aspirate specimens in 5 patients (8%). Two of them were contacts of confirmed cases, 2 were first-degree relatives of a contact of a confirmed case, and 1 was a case with no identifiable source of infection.

For the time being, these data corroborate that approximately 1% of cases of COVID-19 occur in children, as has been described in other countries. However, we must interpret these figures with caution, as the incidence varies based on the number of tested cases, and to date only a small percentage of paediatric patients have been screened for the virus. This could result in the underestimation of the actual percentage of cases, as many may go unnoticed due to a mild presentation, while still posing a risk of community spread.

The indications for screening change from week to week based on the epidemiological situation and the growing knowledge of the disease, and it is important to determine whether the purpose of testing is to isolate cases and contain infection, which would probably require testing individuals with mild illness too, or to guide the clinical management of more severe cases, which could affect the indications for testing. Lastly, the indications for testing must be carefully balanced with its potential social impact and the limited availability of human and material resources that the health care system may be facing in upcoming weeks.

Through its website, the Asociación Española de Pediatría (Spanish Association of Paediatrics) makes available documents, updated periodically, specifying the care protocols for different situations, including management of children who belong to high-risk groups. The website of the Spanish Ministry of Health also offers information updated daily.

☆ Please cite this article as: Calvo C, Tagarro A, Otheo E, Epalza C. Actualización de la situación epidemiológica de la infección por SARS-CoV-2 en España. Comentarios a las recomendaciones de manejo de la infección en pediatría. An Pediatr (Barc). 2020;92:239–240.

Table 1 Paediatric patients screened in the Community of Madrid.

Characteristics	Screened $N = 63$	Positive $n = 5$
Male	34 (54%)	0
Mean age (years)	4,5	2,5
Underlying disease	10 (16%)	1 (20%)
Contact with confirmed case	9 (14%)	2 (40%)
Relative of a contact or a suspected case	5 (8%)	2 (40%)
Travel to a risk area or relative of a traveller to a risk area	9 (14%)	0
Admission for severe respiratory illness with no known epidemiological risk factors	40 (63%)	1 (20%)

Appendix A.

Members of the Working Group for the Followup of Infection by SARS-CoV-2 in the Community of Madrid: Francisco José Sanz Santaufemia (Hospital [H.] Infantil Universitario Niño Jesús), Marta Llorente Romano. (Hospital del Sureste. Arganda del Rey). Cinta Moraleda (H. Universitario 12 de Octubre), María Luz García García (H. Universitario Severo Ochoa, Leganés), Maria Dolores Rodríguez Mesa (H. Universitario Infanta Cristina. Parla), Elvira Cobo Vázquez (Fundación Hospital Alcorcón), Sara Pérez Muñoz (Hospital de Torrejón), María Penin (Hospital Príncipe de Asturias. Alcalá de Henares), Mar Santos (H. Universitario Gregorio Marañón), Arantxa Berzosa (Hospital Clínico San Carlos), Adriana Navas Carretero (H. Universitario Infanta Leonor). Paula Vidal Lana (Hospital Infanta Elena), María José Hernández Rodríguez (H. Central de la Defensa Gómez Ulla), Pilar Galán del Río (H. Universitario de Fuenlabrada), Lucía Figueroa Ospina (Hospital de Villalba), Sara Guillen Martín (Hospital Universitario de Getafe), Ana Belén Jimenez (Fundación Jiménez Díaz), Amanda Bermejo Gomez (Hospital de Móstoles), María José Cilleruelo (H. Universitario Puerta de Hierro), Mariann Tóvizi (Hospital del Tajo, Aranjuez).

References

1. Calvo C, García López-Hortelano M, De Carlos Vicente JC, Vazquez Martinez JC, Grupo de Trabajo de la Asociación Española de Pediatría. Recomendaciones sobre el manejo clínico de la infección por el «nuevo coronavirus» SARS-CoV2. Grupo de trabajo de la Asociación Española de Pediatría (AEP). An Pediatr (Barc). 2020, http://dx.doi.org/10.1016/j.anpedi.2020.02.001.
2. Centro de Coordinación de Alertas y Emergencias Sanitarias. Dirección General de Salud Pública. Ministerio de Sanidad. Instituto de Salud Carlos III. Procedimiento de actuación frente a casos de infección por el nuevo coronavirus SARS-CoV2 (COVID-19). Available from: https://www.mscbs.gob.es/profesionales/saludPublica/ccayes/alertasActual/nCov-China/home.htm.
3. MinWei MD, Yuan J, Liu Y, Fu T, Yu X, Zhang ZJ. Novel coronavirus infection in hospitalized infants under 1 year of age in China. JAMA. 2020, http://dx.doi.org/10.1001/jama.2020.2131.20.
4. Khemani RG, Smith LS, Zimmerman JJ, Erickson S, Pediatric Acute Lung Injury Consensus Conference Group. Pediatric acute respiratory distress syndrome: definition, incidence, and epidemiology: proceedings from the Pediatric Acute Lung Injury Consensus Conference. Pediatr Crit Care Med. 2015;16 Suppl.1:S23–40, http://dx.doi.org/10.1097/PCC.0000000000000432.21.
5. Wu Zunyou. Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China. Summary of a Report of 721314 cases from the chinese center for disease control and prevention. JAMA. 2020, http://dx.doi.org/10.1001/jama.2020.2648.
6. Wang XF, Yuan J, Zheng YJ, Chen J, Bao YM, Wang YR, et al. [Retracted: Clinical and epidemiological characteristics of 34 children with 2019 novel coronavirus infection in Shenzhen]. Zhonghua Er Ke Za Zhi. 2020;58:E008, http://dx.doi.org/10.3760/cma.j.issn.0578-1310.2020.0008.
7. Qifang B., Yongsheng W., Shujiang M., Chenfei Y., Xuan Z., Zhen Z., et al. Epidemiology and Transmission of COVID-19 in Shenzhen China: Analysis of 391 cases and 1,286 of their close contacts. https://doi.org/10.1101/2020.03.03.20028423.
8. Kam K, Yung CF, Cui L, Pin RLT, Mak TM, Maiwald M, et al. A well infant with coronavirus disease 2019 (COVID-19) with high viral load. Clin Infect Dis. 2020, http://dx.doi.org/10.1093/cid/ciaa201.

Cristina Calvo[a,b,*], Alfredo Tagarro[b,c], Enrique Otheo[d], Cristina Epalza[b,e], Grupo de Seguimiento de la Infección por SARS-CoV2 en la Comunidad de Madrid

[a] *Servicio de Pediatría y Enfermedades Infecciosas, Hospital Universitario La Paz, Fundación IdiPaz, Madrid, Spain*
[b] *Red de Investigación Traslacional en Infectología Pediátrica (RITIP), Spain*
[c] *Servicio de Pediatría, Hospital Universitario Infanta Sofía, San Sebastian de los Reyes, Fundación Hospital Universitario 12 de Octubre. Universidad Europea de Madrid, Madrid, Spain*
[d] *Servicio de Pediatría, Hospital Universitario Ramón y Cajal, Universidad de Alcalá, Madrid Spain*
[e] *Unidad de Enfermedades Infecciosas Pediátricas, Servicio de Pediatría, Hospital Universitario 12 de Octubre, Instituto de Investigación 12 de Octubre (imas12), Madrid, Spain*

[*] Corresponding author.
E-mail address: ccalvorey@gmail.com (C. Calvo).

8 March 2020 9 March 2020

https://doi.org/10.1016/j.anpede.2020.03.001
2341-2879/