The sum of points obtained on the day will reflect the patient's vulnerability; the higher the score, the greater the severity or the risk. The application will automatically order all the records, creating a list set up according to the score reflected, from highest to lowest, which will allow the physician to discern those patients who require earlier and closer attention and to prioritize their care. This will allow to optimize, but not replace, the work of the physician, who will check results daily (including answers receive, not just the final score) and will contact with those patients need it by his medical criteria.

The preliminary version of the application has already begun to be used and is being well received. Patients use to report their clinical status during two-three weeks after hospitalization, according with suggestions provided by posthospitalization follow-up physicians. This telematic service has received a positive feedback from the users, improving the satisfaction perceived in the outpatient follow-up.

In the future, COVID and CARE® could serve as a model for its extension to other hospital centres and/or lay the foundations for the development of new mobile applications for mass telematic monitoring of other pathologies.

Authors' contributions

Cristina Gómez Rebollo: Intellectual development of the application and main coordinator of the project, preparation of the manuscript.

Estefanía Mira Padilla: Intellectual development of the application, preparation of the manuscript.

Francisco Santos Luna: Use of application for patient monitoring, critical review of the manuscript.

José Manuel Vaquero Barrios: Critical review of the manuscript with important intellectual contributions.

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Conflict of interest

The authors declare that they have no conflict of interest directly or indirectly related to the contents of the manuscript.

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SARS-CoV-2 infection as trigger multisystem inflammatory syndrome?☆

¿Infección por SARS-CoV-2 como desencadenante de un síndrome inflamatorio sistémico?

SARS-CoV-2 infection in children has generally presented as asymptomatic or with mild catarrhal signs and symptoms.[1,2] Since last April, a set of cases of children with systemic inflammatory response syndrome have been reported. These children had symptoms reminiscent of Kawasaki disease or toxic shock syndrome, but with distinctive characteristics, such as abdominal pain and gastrointestinal disorders. Some of these children presented myocardial involvement and haemodynamic shock. Since then, this syndrome has been known by different names. As of May, it is known as paediatric inflammatory multisystem syndrome temporally associated with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) (PIMS-TS).[3–5]

We report the case of a four-year-old boy with systemic inflammatory response syndrome, with positive results for IgG for SARS-CoV-2 and negative results for IgM and polymerase chain reaction (PCR) on a nasopharyngeal swab sample.

No personal history of note was reported, and the boy had an up-to-date vaccination schedule.

He was evaluated by his paediatrician due to recent onset of fever, erythema and oedema in his hands and feet. The clinical picture was interpreted as a viral infection, and symptomatic measures were recommended. On the third day, he went to the emergency department of a secondary hospital due to persistent high fever, impaired general condition, severe muscle pain, a polymorphous rash with central progression, eyelid oedema and non-suppurative bilateral conjunctival hyperaemia, strawberry tongue and erythematous lips (Fig. 1), in addition to associated diarrhoea and colicky abdominal pain. He did not present lymphadenopathy, catarrhal symptoms or respiratory distress. Upon admission, he presented tachycardia (136 bpm), blood pressure at the lower limit of normal (88/41 mmHg, p 24/14) and normal oxygen saturation. Blood testing showed neutrophilia with a normal leukocyte count, normocytic and normochromic anaemia, normal platelets, coagulopathy with prolonged PT and APTT (1.57 and 1.28, respectively), elevated C-reactive protein (22 mg/dl), hypoproteinaemia,

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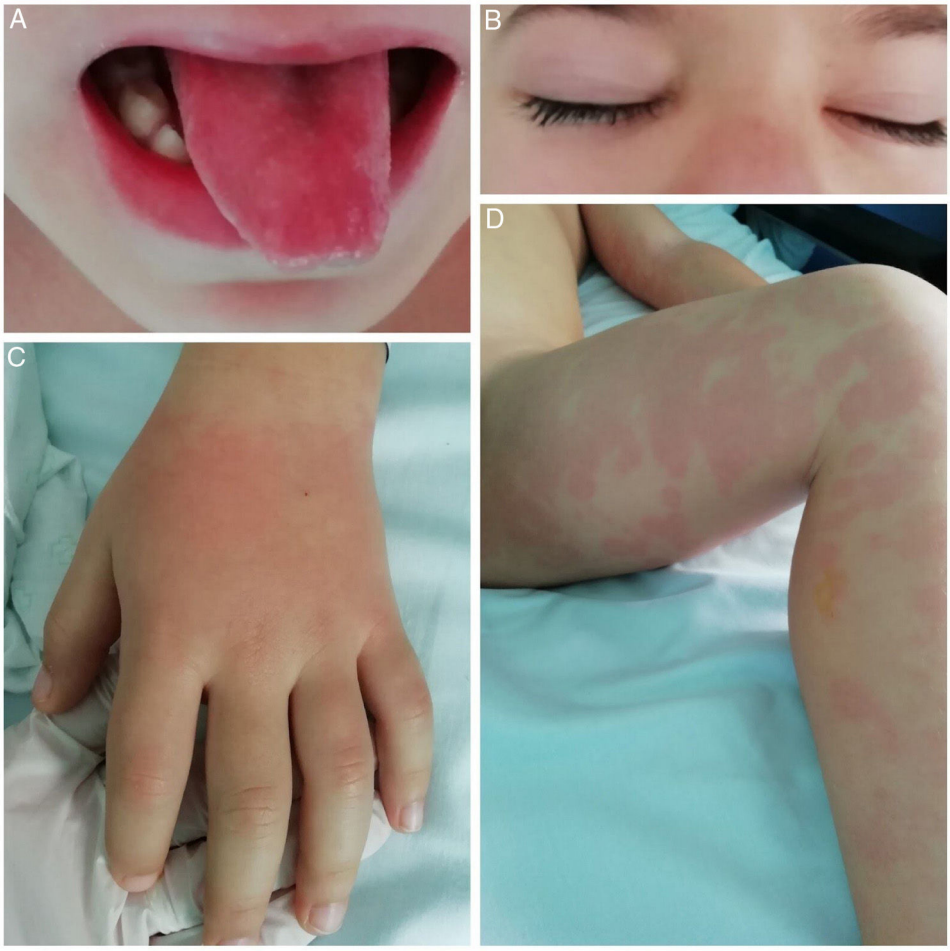

Fig. 1. Cutaneous-mucosal manifestations: A) strawberry tongue; B) bilateral eyelid oedema; C) erythema and oedema on the back of the hand and D) polymorphous rash on the left leg.

and hypoalbuminaemia (5.8 and 2.9 g/dl, respectively); all other clinical chemistry, including ferritin and transaminases, was normal. Empirical intravenous antibiotic therapy was started with cefotaxime at 200 mg/kg/day. After 12 h, due to worsening of signs and symptoms as well as laboratory values, he was transferred to a tertiary referral hospital with a paediatric ICU.

Serology tests were performed for SARS-CoV-2 with positive results for IgG and negative results for IgM; in addition, PCR testing was performed on a sample obtained by nasopharyngeal smear with negative results in 2 determinations 24 h apart. The results of a blood culture, a stool culture and all testing ordered for other respiratory viruses and enteric viruses were negative.

After four days of fever along with the above-mentioned signs and symptoms, a single dose of 2 g/kg of intravenous immunoglobulin (IVIG) was administered and treatment with moderate doses of acetylsalicylic acid (40 mg/kg/day) was started. Neither hydroxychloroquine nor antiviral treatment was administered. Laboratory testing showed an increase in ESR up to 51 mm, D-dimer 2476 FEU, NT-proBNP 5290 pg/ml and IL-6 180 pg/ml. It did not show significant changes in the above-mentioned parameters. A cardiological study revealed no coronary artery dilatation/aneurysms or ventricular dysfunction. An abdominal ultrasound and a chest X-ray were normal, with no evidence of consolidations or cardiomegaly.

Twenty-four hours after treatment was started, the patient presented gradual clinical improvement; his rash, oedema and conjunctival hyperaemia resolved, his vital signs normalised (heart rate 71 bpm and blood pressure 97/52 mmHg, p50) and so did his laboratory parameters, other than his platelet count, which was 579,000/l (reactive thrombocytosis).

He was hospitalised on the ward for nine days, until he completed seven days of intravenous antibiotic therapy, pending culture results and improvement in laboratory parameters. He remained stable in terms of haemodynamics and respiratory function, and did not require vasoactive or respiratory support.

In conclusion, although children usually present few symptoms, in certain cases they may develop a secondary systemic inflammatory response that requires haemodynamic and respiratory support. Nevertheless, the case reported responded satisfactorily to treatment with immunoglobulins and acetylsalicylic acid. The objective of this scientific letter is to contribute to the scientific community with the clinical information available to date, which suggests that SARS-CoV-2 may act as a trigger for systemic inflammatory response syndrome. However, more studies are needed to understand the causal relationship between the two diseases and the optimal treatment.

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