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.

A response to "Mucocutaneous disease and related clinical characteristics in hospitalized children and adolescents with COVID-19 and multisystem inflammatory syndrome in children"

To the Editor: I read with great interest the article by Rekhtman et al[1] which describes the association between mucocutaneous disease and clinical course among hospitalized children and adolescents with COVID-19 and multisystem inflammatory syndrome in children (MIS-C) in dermatology practice. First, I thank the authors for drawing attention to MIS-C findings. In addition, I have highlighted some important points on MIS-C from the perspective of pediatric cardiology. As the authors have indicated in Table II of their article, closely monitoring patients for cardiac involvement is important. MIS-C typically occurs a few weeks after acute infection, and the recognized etiology is a dysregulated inflammatory response to SARS-CoV-2 infection. Persistent fever and gastrointestinal symptoms are the most common symptoms. Cardiac manifestations, such as ventricular dysfunction, coronary artery dilation and aneurysms, arrhythmia, and conduction abnormalities, are also common.[2] Further characterization of the relationship between mucocutaneous disease and coronary involvement in patients with MIS-C can provide important information regarding the course of the disease. Second, based on a small number of patients, the authors suggested some differences in outcomes when comparing the 2 groups of patients with MIS-C with and without rashes. As they have indicated, larger studies are necessary to confirm these observations. The authors have suggested that MIS-C patients with rashes were observed to have less frequent pediatric intensive care unit admission, shock, and the requirement for invasive mechanical ventilation than those without rashes. I believe that the main reason for a longer hospitalization period in MIS-C patients without rashes may be cardiac involvement, which is one of the most important prognostic factors. While evaluating these patients, the severity of cardiac involvement and mucocutaneous disease should also be considered. Third, based on their observations, Rekhtman et al[1] have suggested that criteria for Kawasaki disease (KD) may not adequately apply to MIS-C and that MIS-C criteria should include an expansion of morphologic patterns of mucocutaneous disease. Although the authors' description of mucocutaneous findings may support the development of criteria for MIS-C, characterization of additional systemic features will also be required. Recent studies reveal more clearly the distinguishing features between MIS-C and KD. Although MIS-C shares several similarities with KD, they have several different clinical features. Gastrointestinal complications, shock, and coagulopathy are more common in patients with MIS-C, which are unusual in classic KD. Classic KD is common in North-East Asian countries, whereas MIS-C has been more commonly reported in African, Hispanic, or Latino children. KD is common in children below 5 years, whereas MIS-C is more common in older children.[3] Yasuhara et al[4] have noted that MIS-C manifests with a higher incidence of myocardial dysfunction and gastrointestinal symptoms than KD. Moreover, the extent of the elevation of inflammatory biomarkers and cardiac markers in MIS-C are significantly higher than that in KD. These marked differences suggest that MIS-C and KD are 2 distinct diseases with overlapping clinical characteristics. In my opinion, these patients should be managed with a multidisciplinary approach to improve prognosis.

Ahmet Sert, MD

From the Department of Pediatric Cardiology, Selçuk University Medical School, Konya, Turkey.

Funding sources: None.

IRB approval status: Not applicable.

Correspondence and reprint requests to: Ahmet Sert, MD, Department of Pediatric Cardiology, Selçuk University Medical School, Konya 42130, Turkey

E-mail: ahmetsert2@hotmail.com

Conflicts of interest

None disclosed.

REFERENCES

1. Rekhtman S, Tannenbaum R, Strunk A, Birabaharan M, Wright S, Garg A. Mucocutaneous disease and related clinical characteristics in hospitalized children and adolescents with COVID-19 and multisystem inflammatory syndrome in children. *J Am Acad Dermatol*. 2021;84(2):408-414.
2. Alsaied T, Tremoulet AH, Burns JC, et al. Review of cardiac involvement in multisystem inflammatory syndrome in children. *Circulation*. 2021;143(1):78-88.
3. Kabeerdoss J, Pilania RK, Karkhele R, Kumar TS, Danda D, Singh S. Severe COVID-19, multisystem inflammatory syndrome in children, and Kawasaki disease: immunological

mechanisms, clinical manifestations and management. *Rheumatol Int*. 2021;41(1):19-32.

4. Yasuhara J, Watanabe K, Takagi H, Sumitomo N, Kuno T. COVID-19 and multisystem inflammatory syndrome in children: a systematic review and meta-analysis. *Pediatr Pulmonol*. 2021. https://doi.org/10.1002/ppul.25245.

https://doi.org/10.1016/j.jaad.2021.02.076