



Multisystem Inflammatory Syndrome Occurring Simultaneously in Two Siblings

Merve Kılıç Çil¹ · Ali Orgun² · İlknur Arslan³ · Rabia Miray Kışla Ekinci⁴ · Orkun Tolunay⁵

Received: 7 June 2022 / Accepted: 29 June 2022 / Published online: 16 July 2022
© The Author(s), under exclusive licence to Dr. K C Chaudhuri Foundation 2022

To the Editor: Multisystem inflammatory syndrome in children associated with COVID-19 (MIS-C) is an inflammatory complication with recent exposure to SARS-CoV-2. Despite the increasing worldwide incidence, occurrence in siblings cannot be clearly explained. It is thought that there are personal and genetic differences in the etiology. There are genetic features defined for families with severe COVID-19, but this has not yet been possible for MIS-C. Although there are case reports on MIS-C from the same family, only one case report that has MIS-C at the same time has been identified [1]. A 16-y-old girl and her sibling a 4.5-y-old boy, who presented with the complaints of fever, abdominal pain, and rash, one day apart, also had a history of COVID one month ago. There were differences in the treatment; while the girl received pulse steroid + IVIG and inotropic treatment, her brother was treated only with IVIG.

Coexistence of Kawasaki disease (KD) in siblings has been frequently described in the literature [2, 3]. Banday et al. said that infections are considered as one of the triggers, especially in genetically susceptible hosts [2]. The KD that emerged in a short time interval between the siblings, supports this hypothesis. Gorelik noted that KD had

a significantly higher incidence in eastern Asia and more common in black and Hispanic populations [4]. These differences between the populations suggest that a genetic risk factor may play a role in the pathogenesis of KD and similarly in MIS-C. Genetic tests could not be performed because they could not be studied in our hospital. Therefore, a relationship could not be established between the genetic tendency and MIS-C association, which constitutes the limitation of the study.

In conclusion, MIS-C can occur simultaneously in siblings with similar characteristics. Detailed genome-wide association studies are required for sibling pairs that develop MIS-C in close temporal proximity and to understand the cause of susceptibility to this inflammatory condition.

Declarations

Conflict of Interest None.

References

1. Lim L, Lim SJ, Loy JS, Ng DC. Multisystem inflammatory syndrome in children (MIS-C) occurring in temporal proximity between siblings. *BMJ Case Rep.* 2021;14:e246066.
2. Banday AZ, Bhattacharya D, Pandiarajan V, Singh S. Kawasaki disease in siblings in close temporal proximity to each other-what are the implications? *Clin Rheumatol.* 2021;40:849–55.
3. Hayashida K, Ae R, Masuda H, et al. Clinical characteristics of patients with Kawasaki disease whose siblings had the same disease. *Pediatr Infect Dis J.* 2021;40:531–6.
4. Gorelik M. Learning about Kawasaki disease from COVID-19 and the multisystem inflammatory syndrome in children. *Curr Opin Pediatr.* 2021;33:603–9.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

✉ Merve Kılıç Çil
klcmrwe@gmail.com

¹ Department of Pediatric Infection, University of Health Sciences, Adana City Training and Research Hospital, Adana 01060, Turkey

² Department of Pediatric Cardiology, University of Health Sciences, Adana City Training and Research Hospital, Adana, Turkey

³ Department of Pediatric Intensive Care Unit, University of Health Sciences, Adana City Training and Research Hospital, Adana, Turkey

⁴ Department of Pediatric Rheumatology, University of Health Sciences, Adana City Training and Research Hospital, Adana, Turkey

⁵ Department of Pediatrics, University of Health Sciences, Adana City Training and Research Hospital, Adana, Turkey