

Incidence of MIS-C during the Omicron wave: Authors' replay

Dear Editor,

We warmly thank Bellini et al.¹ for their comment on our recent paper about Multisystem Inflammatory Syndrome (MIS-C) and Omicron wave.² The authors reported data collected in Paediatric Emergency Department (PED) of Gaslini Children Hospital in Genoa (Italy), showing a statistically significant increase of MIS-C incidence during the Omicron wave (December 2021–March 2022) to 106.2 cases per 100,000 visits ($p = 0.0001$), doubled from the previous COVID-19 peak (54.9 cases per 100,000).¹ On the other hand, they highlight a decrease in incidence of MIS-C in relation to admissions in their PED with COVID (5080 MIS-C every 100,000 in April 2020–November 2021 vs. 1439 MIS-C every 100,000 in December 2021–March 2022, $p < 0.0001$), maybe because of major COVID-19 diagnoses in asymptomatic children screened with antigen swab in PED.¹

Since December 2021, the literature on this topic has not been greatly enriched. Currently, other authors have questioned the possible increase of MIS-C with the spread of the Omicron variant, partly supporting the data emerging from the Gaslini Hospital PED and our previous hypotheses or refuting them.

In fact, Miller et al.³ analysed 5670 cases of MIS-C observed between July 2021 and January 2022 in the United States, dividing them between the third and fourth waves of COVID-19 and stating that most of the cases (95%) recorded during the fourth wave were in any case due to the Delta variant.³ In addition, the severity of MIS-C cases reported during fourth wave and the hospitalisation rate were significantly lower than during third wave.³ Other interesting data are those published by Levy et al.⁴ in May 2022. In this prospective study, the authors compare MIS-C cases collected in 12 hospitals in Israel during the three waves of COVID-19, Alpha (December 2020 to April 2021), Delta (July 2021 to November 2021) and Omicron (November 2021 to March 2022). They demonstrate a reduction in the incidence of MIS-C during the Omicron wave (incidences per 100,000 children were 54.5 during Alpha, 49.2 during Delta and 3.8 during Omicron) and a lower severity of MIS-C cases.⁴ These findings would be in total disagreement with what was found in Italy by Bellini et al.,¹ but a different territorial spread of the variants should be considered. Anyway, Bellini et al.¹ described only the incidence of MIS-C in their hospital during the Omicron wave, without mentioning the disease severity or the rate of hospitalisation.

The high prevalence of SARS-CoV-2 infection in children in Italy during the Omicron wave would justify the increase in MIS-C cases

compared to the previous waves. However, the low virulence of the Omicron variant itself, a possible previous SARS-CoV-2 infection but above all the spread of COVID-19 vaccination in children aged between 5 and 18 years could justify a lower clinical severity of MIS-C in paediatric age during this wave.

In conclusion, as MIS-C can occur several weeks after SARS-CoV-2 infection, further studies are advocated to describe the incidence and severity of MIS-C in children during the ongoing Omicron wave.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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