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LETTER TO THE EDITOR

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Reported cases of multisystem inflammatory syndrome in neonates in the Arab World

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Dear Editor

In July 2021 Pawar et al. described a hyperinflammatory syndrome in neonates similar to multisystem inflammatory syndrome in children (MIS-C) due to transplacental transfer of maternal SARS-CoV-2 antibodies. Their study, conducted in Kolhapur, India (September 1, 2020 – April 30, 2021), reviewed neonates born to mothers who contracted COVID-19 during pregnancy. They distinguished MIS-N from neonatal infections acquired postnatally[1]. By January 2022, a case series from five hospitals in Western India reported 20 neonates diagnosed with MIS-N between October 2020 and March 2021[2].

A systematic review by Shaiba LA et al. identified 47 neonates meeting confirmed or suspected MIS-N criteria as of October 2021[3]. Among them, three neonates from two Arab countries were classified as suspected MIS-N based on CDC and WHO criteria for MIS-C diagnosis: Two one-day-old females from Saudi Arabia and one 14-day-old female from Qatar[4].

By September 2022, a review of 27 studies covering 104 neonates did not identify any additional reported cases from Arab countries[5].
As of June 2023, a total of 35 studies documenting 201 neonates with MIS-N have been reported globally[6]. Although the Arab world comprises approximately 5.6% of the global population, MIS-N cases remain disproportionately underreported in the region. Despite global recognition of MIS-N as a complication of maternal SARS-CoV-2 infection, the number of reported cases in Arab countries remains strikingly low[7].
While underreporting and limited awareness are likely contributing factors, other potential explanations—such as regional epidemiological variations, racial and genetic factors, or immunomodulatory effects of certain infections—as well as BCG vaccination and latent tuberculosis warrant further investigation.

Notably, Saudi Arabia and Qatar have made progress in reporting MIS-N cases, yet other Arab countries appear to be lagging. To bridge these gaps, enhanced surveillance systems, standardized diagnostic protocols, and comprehensive data collection—including regional case registries—are essential. Establishing these measures will play a critical role in the early recognition of immune-mediated neonatal conditions linked to maternal hyper-inflammation, whether triggered by COVID-19 or future viral infections. Given the potential for MIS-N to re-emerge in future pandemics, particularly in the setting of strong maternal immune activation, early detection remains paramount.
Clinicians should maintain a high index of suspicion for MIS-N or similar neonatal inflammatory conditions associated with maternal hyperinflammation and transplacental passage of inflammatory mediators, particularly when maternal infections occur in the third trimester. Timely recognition and intervention in such cases will be crucial to mitigating adverse neonatal outcomes.

To enhance detection, active surveillance mechanisms should be established in neonatal intensive care units (NICUs) to systematically identify potential MIS-N cases. This should be complemented by regular data collection and analysis, ensuring early detection and response. Additionally, a centralized database should be developed to compile and analyze MIS-N cases, facilitating research, trend identification, and evidence-based interventions to improve neonatal outcomes.
Ultimately, further research is essential to accurately determine the true burden of MIS-N (Multisystem Inflammatory Syndrome in Neonates). Multi-center studies and collaborative international research initiatives will be critical in addressing current knowledge gaps. In particular, strengthening MIS-N surveillance systems in regions with known underreporting—such as many Arab countries and parts of Africa—is vital for improving early detection, guiding timely clinical interventions, and enhancing public health responses. Future efforts should prioritize the establishment of standardized case definitions and surveillance protocols to ensure consistent identification, reporting, and monitoring of MIS-N globally.

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