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Changes in developmental care with a few motivated caregivers

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Short Communication

Multisystem inflammatory syndrome in children, the exact mechanism of which is still unclear. It is thought to be due to immune dys-regulation following exposure to SARS CoV-2. It usually presents as fever and multi-organ involvement, with blood investigations showing increased inflammatory markers weeks after exposure to SARS-CoV-2. Multisystem inflammatory syndrome in children has clinical and serological similarities with Kawasaki disease and the severe COVID-19 cytokine storm seen in adults. However, its pathophysiology and immunological response is different, and may be mediated by auto antibodies [1]. More than children with Multisystem inflammatory syndrome in children have specific IgM and IgG antibodies against SARS-CoV-2, but only about one-third are positive for SARS-CoV-2 by RTPCR [2]. Unlike Multisystem inflammatory syndrome in children, where SARS-CoV-2 infection and multisystem inflammation occur in the same subject, a few case reports suggest neonatal multisystem inflammation occurs secondary to maternal SARS-CoV-2 infection. A few weeks after the first wave of COVID-19 in Kolhapur, India, we found an increase in the number of neonates with structurally normal hearts who presented with conduction abnormalities and were born to mothers with a past history of COVID-19. Specifically, these neonates presented with prolonged with Atrio-ventricular block or thrombosis similar to older children with MIS-C within the first week after birth [3]. We present a case series of neonates with multisystem involvement, hyper-inflammatory syndrome and positive anti SARS-CoV-2 IgG antibodies, temporally related to maternal antenatal SARs-CoV-2 exposure. To our knowledge, this is the largest series of MIS-C presenting in the early neonatal period. Access to chart reviews and publication was approved by the Institutional Ethics Committee of the Dr D Y Patil Medical College Hospital and Research Institute, at Dr D Y Patil University, Kolhapur, India. Informed consent was obtained from parents for using clinical data and photographs. Neonates who met the criteria and that were admitted to seven NICUs in Kolhapur between September and April were included [4]. These criteria were modified from CDC criteria for Multisystem inflammatory syndrome in children and interim guidance from AAP to accommodate lack of fever in neonates and source of primary infection. Neonates with signs consistent with Multisystem inflammatory syndrome in children, maternal history of COVID-19, and positive for anti-SARS CoV-2 antibodies were included [5]. However, infants with these symptoms and culture positive sepsis, or proven infective pathology in other organ systems were excluded. Infants with low Apgar scores and evidence of birth asphyxia were excluded [6]. Preterm infants with findings attributable to early gestation were excluded. IgG and IgM against SARS CoV-2 were detected using VIDAS SARS-COV-2 kits, enzyme linked fluorescent assay. Data are presented as median or number. We differentiated neonates presenting with multisystem inflammatory syndrome in the first week after birth secondary to possible maternal COVID-19 infection, from neonates who had early onset neonatal COVID-19 or late-onset neonatal COVID-19 and subsequently present with multisystem inflammation during few weeks after birth [7]. In patients with Multisystem inflammatory syndrome in children, multisystem inflammation was secondary to prior COVID-19 in the same subject. However, in Multisystem inflammatory syndrome in neonates, multisystem inflammation in the neonate was secondary to COVID-19 in the mother with passive transmission of antibodies [8]. We admit that there was probably overtreatment with steroids, low molecular weight heparin and intravenous immune-globulin among our patients and many of these patients might have improved without these therapies [9]. More targeted therapy with these agents based on further research is prudent as IVIG use among neonates carries the potential risk of necrotizing entero-colitis [10].

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Conflict of Interest

None

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