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SCIENTIFIC LETTER

Multisystem Inflammatory Syndrome in Children Temporarily Associated with SARS-CoV-2

Vinod H. Ratageri[1] · Gayatri R. Pawar[1] · Guruprasad N[1] · Shadab B. Maldar[1] · Shivanand Illau[1]

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To the Editor: COVID-19 in children is largely benign, however, multisystem inflammatory syndrome in children (MIS-C) associated with SARS-CoV-2 can lead to serious and life-threatening illness in previously healthy children [1]. In this prospective observational series, we describe clinical profile and outcome of children with MIS-C.

A total of 8 children met WHO criteria [2] for MIS-C during September and October 2020. The male to female ratio was 3:1 with median age of 4.65 y [interquartile range (IQR) 3.1–7.2 y]. All children were healthy before this illness. All children had fever with mean duration of 6 ± 1.72 d. The common systems of clinical presentation were cardiovascular 7 (87.5%), gastrointestinal 4 (50%), and respiratory 2 (25%). The other manifestations include shock 5 (67.5%), hypotension 4 (50%), hypoxemia 4 (50%), and generalized erythematous rash 4 (50%).

Serological evidence of SARS-CoV-2 infection was present in 7 (87.5%), which also includes 1 RT-PCR-positive child. One child had exposure to COVID-19. All children were investigated for dengue, rickettsial fever, chikungunya, and sepsis and were found negative. Thrombocytopenia was seen in 7 (87.5%) children; leucopenia and lymphopenia in 1 child each. The inflammatory markers were elevated in all the children. Two children had liver dysfunction and none had abnormal renal functions.

Five (67.5%) had abnormal 2D ECHO, of which, 3 had severe left ventricular dysfunction. None of them had coronary artery abnormalities during the hospital stay. Fifty percent (4) of children had hypoxemia needing oxygen support by noninvasive ventilation. Inotrope/vasopressor support was needed in 4 children (50%). All the 8 children were treated with intravenous immunoglobulin (IVIG) (2 g/kg). In addition, 6 children received methyl prednisolone (10–30 mg/kg). No mortality observed.

The striking cardiac manifestations in our series were cardiogenic shock and abnormal echocardiography in the form of left ventricular (LV) dysfunction. The mechanism underlying myocardial dysfunction in MIS-C has not been yet fully elucidated. Possible causes as seen in adults with COVID-19 include acute myocarditis, hypoxic injury, and ischemic injury caused by cardiac microvascular damage or coronary artery disease [3, 4].

Declarations

Conflict of Interest None.

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✉ Vinod H. Ratageri
ratageri@rediffmail.com

[1] Department of Pediatrics, Karnataka Institute of Medical Sciences, Hubli, Karnataka 580021, India