



PIMS-TS vs. MIS-C: Diagnostic Criteria in COVID-19–Associated Hyperinflammation in Children

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To the Editor: A multicenter study conducted in three COVID care hospitals of Eastern India to evaluate PIMS and MIS-C criteria for identifying COVID-19 associated hyperinflammatory state [1, 2] among 1 mo- to 12-y-old children with hyperinflammation. Those with known hematologic and autoimmune diseases, culture-proven bacterial sepsis, and evidence of concurrent infection were excluded. Inflammatory markers used to diagnose hyperinflammatory states were lymphopenia and/or neutrophilia, elevated C-reactive protein, erythrocyte sedimentation rate, procalcitonin, fibrinogen, D-dimer, serum ferritin, and interleukin-6.

Twenty-one children satisfied both PIMS [3] and MIS-C criteria [4] and 11 children met only PIMS-TS criterion, while none met only MIS-C criterion. Fifty percent had positive nasopharyngeal swabs, 62.5% documented positive antibody titer, while 25% had definite contact history.

Fever was noted as the most frequent feature followed by rashes (78%), respiratory distress (53%), septic shock (46.8%), coronary artery abnormalities (31.3%), systolic dysfunction (43.8%), and diastolic dysfunction (6.3%). While 72% patients required intensive care, 2 patients received mechanical ventilation. Radiological lung involvement was seen in 15.6%; and 46.8% and 62.5% had elevated

pro-BNP and D-dimer, respectively. Majority (84.4%) received immunosuppressants with baseline management, while half of the patients responded to intravenous immunoglobulins and two required biologics. One child succumbed to ARDS and multiorgan failure.

The children satisfying both PIMS-TS and MIS-C criteria had significant association with shock and myocardial dysfunction, higher inotrope requirement, and longer ICU stay than those satisfying only PIMS criterion.

We inferred that employing the only MIS-C criterion had higher probability of missing out the cases of hyperinflammation at early stages. On the other hand, patients who met the only PIMS-TS criterion had reduced intensive care unit stays and less disease severity. Criterion like PIMS-TS can play a decisive role in early identification of COVID-19–associated hyperinflammatory state.

Declarations

Ethical Clearance MC/KOL/IEC/NON-SPON/743/07/20 Dated-24–07-2020

Conflict of Interest None.

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