



## Co-Infection of Dengue Fever with COVID-19 in a Child with MIS-C

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*To the Editor:* We are in the midst of an unprecedented global pandemic of coronavirus disease 2019 (COVID-19). In children of late we are seeing a peculiar condition called multi-system inflammatory syndrome (MIS-C) [1]. Worryingly, some diseases like dengue, rickettsial fever mimic the clinical manifestations of COVID-19. There are reported cases of co-infection of dengue with COVID-19 [2], and also false positive dengue antibodies in COVID-19 cases [3]. All these are reported in adults. Herein, we report a child with MIS-C and co-infected with dengue virus.

An 8-y-old male child, presented with acute onset high grade fever of 8 d duration, abdominal pain, and vomiting. No history of cough/cold, hurried breathing, chest-indrawing, joint swelling/redness, bleeding manifestations. Examination revealed bilateral conjunctival congestion, facial puffiness, and erythematous macular rashes on palms and soles and tender hepatomegaly. Other systems were unremarkable except variable heart rate. Complete blood count (CBC) with maximum and minimum counts was as follows, leukocyte counts [12,900/cmm (P: 43%, L: 43%) and 7700/cmm (P: 78%, L: 15%)], platelets (411,000/cmm and 96,000/cmm) and hematocrit (29.9% and 25.3%). Reverse transcription polymerase chain reaction (RT-PCR) for SARS-CoV-2 was positive and serology for COVID-19 showed raised immunoglobulin G (IgG) antibody titer. Inflammatory markers were raised [C-reactive protein (CRP) > 90 mg/dL, ferritin 157 ng/mL, lactate dehydrogenase (LDH) 257 U/L, D-dimer 2793 ng/mL]. Ultrasound imaging of the abdomen showed minimal ascites with hepatomegaly. 2D echo showed globally hypokinetic left ventricular (LV) dysfunction with an ejection fraction of 30%. Dengue immunoglobulin M

(IgM) was positive by IgM antibody-capture enzyme-linked immunosorbent assay (MAC-ELISA).

Child improved with intravenous (IV) immunoglobulin therapy (2 g/kg). As vitals were stable, child was managed with only oral fluids. Heart rate variability normalized, repeat 2D echo showed ejection fraction of 45% and 60% during followup and inflammatory markers reduced to normal.

MIS-C was considered in our child as the child met the WHO criteria. Dengue was considered because of presence of rash, minimal ascites, hepatomegaly, thrombocytopenia and as we are in epidemic. Ideally dengue confirmation was by RT-PCR; however, as per Ministry of Health and Family Welfare Department (MHFW), Govt. of India [4], even dengue IgM by MAC-ELISA will be considered as confirmed case. As clinical features overlap, children should be tested for both viruses in India.

### Declarations

**Conflict of Interest** None.

### References

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