Consider Hemophagocytic Lymphohistiocytosis as a New Cause of Death in COVID-19 With Presentation of Acute Liver Failure: *A Case Report*

***To the Editors*:**

An otherwise healthy 5-month-old girl, a product of first pregnancy, full-term with a birth weight of 2800 g (now 7500 g), presented with yellowish discoloration of sclera and skin from 10 days before admission. Before the onset of icterus, she had loose stools and fever for only 2 days with spontaneous improvement. The patient was admitted to another hospital for further evaluations and finding the cause of jaundice.

On physical examination in the original hospital, the patient had hepatomegaly, mild splenomegaly, and pallor. Other parts of physical examination were normal. At the time of present to the pediatric gastroenterology ward, she was irritable, with generalized yellowish skin and pallor. No fever was detected, and her hemodynamic condition was stable. Abdominal examination revealed mild hepatosplenomegaly with a soft consistency.

She had no pulmonary involvement on the first day of admission, but she has developed bilateral reticulonodular and perihilar lymphadenopathy during hospitalization. Oxygen saturation was detected 99% at room air. The primary and admission course laboratory results are summarized in Table 1.

Considering liver involvement and anemia in the patient, the diagnosis of GCH-AHA was suggested. Nevertheless, the Coombs test report was negative, so it was excluded. Other laboratory tests to rule out infectious etiologies were requested.

On the second day, the patient became febrile, lethargic, hypoglycemic, and hemodynamically unstable. Therefore, broad-spectrum antibiotics (Meropenem-Vancomycin), dextrose water 10%, and several inotropic agents were started. Because of the deterioration of the clinical condition, she was transferred to PICU and intubated.

Considering the recent pandemic and noticeable elevation of inflammatory markers, nasopharyngeal swab polymerase chain reaction test and immunoglobulin assay for severe acute respiratory syndrome coronavirus (SARS-CoV) 2 were done. Other laboratory tests to rule out other infectious etiologies were negative, including blood culture, urine culture, EBV, CMV, and HSV.

Regarding the patient's clinical presentations, laboratory findings, and positive COVID-19 PCR, she was diagnosed as hemophagocytic lymphohistiocytosis (HLH) secondary to COVID-19. So, a course of chemotherapy with a combination of dexamethasone-etoposide was started.

Despite medical therapy and supportive care, the patient was expired after 2 days of ICU admission.

HLH is an uncommon acute hyperinflammatory syndrome and life-threatening condition in infants characterized by cytopenia, hyperferritinemia, multiorgan failure, hepatosplenomegaly, and fever.[1] COVID-19 infection can be rapidly progressive, like HLH, which causes multiorgan failure, respiratory symptoms, and coagulation disorders.[2]

To the best of our knowledge, there are only a few reported cases of coronavirus disease 2019 infection presenting with HLH.[3–5] Our patient presented with sudden onset jaundice and progressed rapidly to HLH, probably associated with COVID-19 infection.

We report this case to bring awareness in the time of SARS-COVID-19 pandemic, patients with HLH-like presentations should be evaluated as a probable case of COVID-19 infectious with high clinical suspicion.

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The authors have no funding or conflicts of interest to disclose.
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ISSN: 0891-3668/22/4104-e187
DOI: 10.1097/INF.0000000000003487