Acute Cholestatic Hepatitis due to Rhinovirus-Induced Hemophagocytic Lymphohistiocytosis: A Case Report

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Introduction

- Hemophagocytic lymphohistiocytosis (HLH) is a life-threatening syndrome in which an overactive immune response causes inflammation and tissue destruction.
- HLH may occur sporadically with triggers including infections, malignancy or rheumatologic disorders.
- Diagnosing HLH involves both clinical suspicion, as patients present acutely ill with a range of manifestations such as hepatitis, and diagnostic criteria required to facilitate the diagnosis.
- We report a case of rhinovirus-induced HLH that presented as acute cholestatic hepatitis.

Case Description

- A 56-year-old male presented to our center with acute liver injury.
- Two weeks prior to admission, he developed an upper respiratory infection, and his condition deteriorated five days prior to admission as he experienced weakness, jaundice, dark urine, and pale stools.
- Physical examination revealed scleral icterus and jaundice.
- He was found to have transaminitis with AST/ALT of 850/789 U/L, a total bilirubin of 22.7 mg/dL, a normocytic anemia, elevated INR, elevated ferritin of 36018 ng/dL, and hypertriglyceridemia. Nasal swab was positive for rhinovirus PCR.
- Cross sectional imaging revealed hepatomegaly and gallbladder wall thickening.
- His work-up for liver-specific causes was unremarkable.
- Endoscopic ultrasound showed no clinically significant portal hypertension or cirrhosis.
- Liver biopsy revealed cholestatic hepatitis and increased iron deposition.
- Genetic testing for hemochromatosis was negative.
- A bone marrow biopsy revealed hemophagocytosis.
- A soluble IL-2 receptor alpha test was unsuccessful due to laboratory error.

Case Description

- Despite only meeting three diagnostic criteria for HLH (hyperferritinemia, hypertriglyceridemia, and hemophagocytosis on the bone marrow biopsy), due to highly suggestive features and worsening clinical status, the patient was started on empiric HLH-directed therapy with steroids and IVIG which resulted in a dramatic improvement in his liver function studies, ferritin down to 6518 ng/dL, and resolution of the coagulopathy.
- The patient was discharged on steroids and clinically improved with near normalization of transaminases.

Discussion

- Diagnosing HLH can be challenging given the range of symptoms and nonspecific diagnostic criteria.
- However, it is crucial to recognize HLH as a potential cause of acute hepatitis presenting with elevated liver function tests, ferritin, triglycerides, and coagulation abnormalities as delaying treatment while waiting for laboratory and pathology to return can prove to be fatal.

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