Hepatitis With Acute Liver Injury Secondary to Undifferentiated Viral Upper Respiratory Infection in an Immunocompetent Adult Patient

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Background

- Acute upper respiratory infections (URIs) are defined as self-resolving infections of the upper airway with symptoms including cough, runny nose, congestion, low-grade fever, headache, malaise, sneezing, and facial pressure.
- URIs typically last one to three weeks with common complications including ear infections, sinus infections, throat infections, and pneumonia.
- Less commonly, URIs can lead to acute liver injury especially in immunocompromised patients.
- The present report describes a novel case of an immunocompetent adult patient with acute liver injury following an undifferentiated viral URI.

Patient Description

- A 23-year-old fully-immunized white male presents to the emergency department (ED) with complaints of right upper quadrant (RUQ) abdominal pain, dark urine, nausea, fever, and decreased appetite for four days.
- The patient states that he recently recovered from a mild cold that lasted approximately four weeks with symptoms including productive cough, rhinorrhea, and congestion.
- The patient notes no daily medications, no recreational drug use, moderate alcohol intake (roughly 6 drinks per week), adequate daily water intake, healthy diet, and is a non-smoker.
- Home COVID testing was negative.
- Physical examination is significant for tenderness in the right upper abdominal quadrant that worsened upon inspiration as well as palpation.

Patient Description (cont.)

- Laboratory findings showed decreased serum lymphocytes (0.91x109/L), serum glucose of 111 mg/dL, and elevated liver enzymes ALP 299 IU/L (normal 33–98), ALT 618 IU/L (normal < 36), and AST 675 IU/L (normal value < 35). Bilirubin and amylase were normal.
- Right upper quadrant abdominal ultrasound was unremarkable.
- The following serological tests were performed and all were negative: hepatitis A, B, C, E, Cytomegalovirus, Epstein-Barr, smooth muscle (SMA) antibody, and anti-nuclear antibody (ANA) screens.
- The patient was discharged from the ED and instructed to follow up with his primary care physician (PCP).
- One week after presentation to the ER, the patient reported gradual improvement of symptoms and lab work demonstrated improved liver function.

Conclusion

- While cases of acute hepatitis secondary to viral URI have been documented in immunocompromised patients, occurrence in healthy immunocompetent adult patients has only been reported in patients with Coronavirus disease (COVID-19).
- Other possible causes of liver abnormalities were ruled out; it seems likely that transient hepatitis was directly caused by undifferentiated respiratory virus.
- In our patient, the abnormalities in liver function tests quickly normalized, in absence of specific therapy.
- The real meaning of liver tests transient alterations following URI has yet to be determined.