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Ischemic Hepatitis Associated With Influenza A Infection

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Introduction

- Ischemic hepatitis, also known as hypoxic hepatitis or shock liver, is one of only a few differential diagnoses to consider in cases of severely elevated serum aminotransferases 20 times the upper limit of normal
- Most cases occur in patients with decompensated/acute heart failure, shock, or hypoxia requiring advanced care in an intensive care unit
- It often carries a high rate of in-hospital mortality due to severity of underlying predisposition
- Here we report an uncommon presentation of ischemic hepatitis in a patient who was treated for COPD exacerbation in the setting of an influenza A infection

References

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Case Description

- A 56-year-old female with COPD and bipolar disorder presented with 3 days of cough and dyspnea, with wheezing on exam. She was found to be positive for influenza A
- Vitals were stable throughout admission aside from initial hypoxia at room air on presentation, with lowest SpO2 recorded as 79% in the emergency room
- Peak of abnormal labs (all within 12 hours of admission): AST 1226, ALT 943, LDH 1300
- Unremarkable INR, bilirubin, albumin, ALP, GGT, hepatitis panel, acetaminophen, ethanol, alpha-1 antitrypsin, antinuclear antibody, anti-smooth muscle antibody, antimitochondrial antibody, and ceruloplasmin
- Unremarkable echocardiogram, ultrasound of liver (both limited and doppler), and CT of abdomen and pelvis
- No recent changes to medications, and reports marijuana gummies as only supplements taken
- Abnormal labs resolved over course of hospitalization that involved only standard treatment of COPD exacerbation. Abnormal labs at discharge: AST 63, ALT 211
- Never required O2 supplementation beyond nasal cannula, and never required intensive care during hospitalization
- No liver biopsy was pursued given patient's relatively benign clinical presentation and subsequent improvement with routine treatment

Discussion

- Our patient exhibited drastic elevations in transaminases despite no apparent heart failure or shock. Patient did have acute hypoxic respiratory failure due to COPD exacerbation in the setting of influenza A, but required no more than nasal cannula for oxygen supplementation, and never required intensive care
- Diagnosis of ischemic hepatitis is often thought of in the intensive care setting, but should also be considered in general hospital wards
- In setting of infections by viruses not traditionally considered as hepatotropic (such as influenza), ischemic hepatitis serves as a potential mechanism of severely elevated serum aminotransferase levels due to a hypoxic state
- Although ischemic hepatitis is the most used terminology, the labels of ischemic hepatitis, shock liver, and hypoxic hepatitis are all derived from decreased blood perfusion, hypotension, and/or hypoxia, all of which can be seen independently or in combination. A previous study argues that these labels may be a misnomer when considering underlying pathophysiology
- Another theory suggests that a collateral immune-mediated response is responsible for liver enzyme elevations in nonhepatotropic viral infections