HEPATITIS B AND D SUPERINFECTION DISCOVERED IN A PATIENT PRESENTING WITH AN ASTHMA EXACERBATION IN A LOW-RESOURCE COMMUNITY HOSPITAL

Emilie Hilliard OMS-3[1], Hina Rub OMS-3[1]
Philadelphia College of Osteopathic Medicine[1]

INTRODUCTION

Hepatitis D virus (HDV) is an RNA virus that relies on hepatitis B surface antigen (HBsAg) for replication. Due to the high prevalence of Hepatitis B vaccination in the United States, Hepatitis B and D superinfections are a rarity. However, underserved immigrant populations from HDV-endemic areas are at increased risk for such infections. This case explores the discovery of a Hepatitis B and D superinfection in an immigrant individual admitted to a low-resource community hospital for a pulmonary chief complaint.

CASE PRESENTATION

A middle-aged male of Uzbek origin presented with cough and dyspnea and was admitted for an asthma exacerbation. The patient had been admitted several times before. The patient was known to have a past medical history of smoking for 25 years, COPD, diabetes mellitus, and chronic hepatitis B. During this hospital stay, the patient began to complain of intermittent right upper quadrant pain, prompting a Gastroenterology consultation. Given the history of hepatitis B, a hepatitis B panel was ordered and revealed positive HBsAg with nonreactive HBsAb, nonreactive HBeAg with a positive HBeAb, nonreactive HBc IgM, and a HBV quantitative DNA of 25 IU/mL. These labs are consistent with a chronic inactive hepatitis B infection. This prompted an ultrasound of the abdomen which revealed cirrhosis of the liver. Given the patient's origin from an HDV-endemic country, the decision was made to perform hepatitis D screening. Further laboratory workup revealed positive Hepatitis D antibody with a negative Hepatitis D antigen. This likely demonstrates a recovered Hepatitis B and D superinfection, in the setting of his chronic hepatitis B infection. Quantitative HDV RNA testing was then sent to an outside laboratory to determine the current viral activity.

DISCUSSION

Further workup of the hepatitis D quantitative viral load is pending, as this small community hospital does not have the capability to test for the quantitative load. These results will determine if the infection is active or resolved. If the quantitative results reveal a high viral load, then the patient would require outpatient treatment for an active HDV infection. Treatment with pegylated interferon-alpha is currently the only FDA-approved treatment regimen. If quantitative results are low, then the HDV infection is resolved, but the patient would still need routine monitoring due to the high rate of virologic relapse. Given the increased risk of rapidly progressing cirrhosis and hepatocellular carcinoma in the setting of HDV infection compared to HBV infection alone, the patient was recommended for follow-up to monitor for carcinoma and AFP levels every 6 months.

CONCLUSION

This case serves as an example of increased prevalence of the disease in underserved areas with immigrants from endemic locations. Furthermore, it demonstrates how screening for HDV in chronic HBV patients, as recommended by the American Association for the Study of Liver Diseases, can identify HDV infection in patients who would have been otherwise undiagnosed. Unfortunately, there are no universal screenings or screening guidelines for Hepatitis D set by the USPSTF. This case highlights the need to establish universal screening guidelines for Hepatitis D in patients with chronic Hepatitis B.

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