

Acute Liver Failure Related to Cytomegalovirus and Hepatitis B Virus Co-Infection: A Case Report and Literature Review

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Abstract

In 2016, approximately 3.9% of the global population was infected with hepatitis B virus (HBV), which often goes undiagnosed and can lead to cirrhosis and hepatocellular carcinoma. Human cytomegalovirus (HCMV), with a seroprevalence of 60% to over 90% in different regions, affects the immunocompromised more severely, leading to conditions like acute hepatitis. This study focuses on acute liver failure (ALF) associated with CMV in an HBV-positive immunocompetent patient, reviewing clinical diagnosis, characteristics, treatment, and prognosis of HBV and CMV co-infection. In this study, we reported a 49-year-old male patient who presented with symptoms including dark urine, scleral icterus, progressive fatigue, nausea, right-sided abdominal pain, and abdominal distention. Laboratory findings confirmed HBV infection and CMV IgG antibodies, without clear etiology. Despite various treatments including antivirals and plasma exchange, liver failure progressed until CMV was identified via metagenomic sequencing, leading to successful ganciclovir treatment. Literature from 1980-2022 was reviewed, highlighting diagnostics and outcomes of CMV and HBV co-infected patients. Serological tests play a crucial role in identifying CMV infection, yet might yield false negatives in immunocompromised individuals. This study underscores the complexities in diagnosing and managing co-infections of HBV and CMV, emphasizing the need for considering acute CMV infection or reactivation in patients with chronic hepatitis B encountering acute liver injury. The collective analysis presents insights into effective management strategies, pointing towards a comprehensive approach in treating such co-infections to mitigate the risk of severe liver diseases.

Keywords

Cytomegalovirus, Hepatitis B Virus, Acute Liver Failure