Original Article

Medical Journal of Viral Hepatitis (MJVH)

Fulminant hepatitis by concurrent acute HBV-HCV infection successfully treated with antivirals while seeking for an orthotopic liver transplantation

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Abstract

Background: A severe, near-fatal liver failure due to a concomitant acute HBV-HCV infection has been controlled and later fully resolved from a clinical and a virological point of view, by a prompt and appropriate antiviral treatment.

Introduction

In the setting of active i.v drug abuse [1-5, 8], and also in regions where the prevalence of chronic hepatitis by HBV, HDV and HCV is proportionally elevated or re-increasing [1-5], both co-infections and superinfections may occur, sometimes leading to a rapidly evolving liver failure responsible for organ transplantation and death, or late sequelae like cirrhosis or hepatocellular carcinoma [3-5, 7-9]. Concurrently, other hepatotropic viruses like HGV are emerging [10], since laboratory diagnosis benefits from an excellent, endless progress [10, 11].

In our experience, a prompt treatment with the appropriate direct antiviral agents for both HBV and HCV resolved the severe initial picture, a led to a sustained clearance of both HBV and HCV infections.

Case Report

A 37-year-old i.v. cocaine abuser male was hospitalized through the Emergency Dept. of our Hospital because of jaundice and a severe liver failure due to a concomitant acute HBV-HCV infection. After consulting the liver transplantation centers of Palermo and Bologna, a combined therapy with oral daily entecavir and sofosbuvir-velpatasvir at standard dosages was started, together with supportive care. Baseline plasma HCV-RNA and HBV-DNA levels tested 6,780,000 UI/mL, and 34,900 UI/mL respectively, with a liver stiffness of 50.4 KPascal at fibroscan examination. Serum ALT-AST levels were 2840-2701 U/mL respectively upon admission, while serum bilirubin level was 15.5 mg/dL, in absence of significantly altered coagulation parameter-hyperammonemia, and moderately lowered serum cholinesterase levels. HCV infection was caused by a genotype 3 strain, whereas the screening for HIV, HDV, and other hepatotropic viruses proved negative.

A prompt resolution of the abrupt liver impairment was attained within 3 weeks, at the time of discharge, while the outpatient follow-up documented a complete HBV clearance (negative serum HBV-DNA and HBsAg testing with positive anti-HBs levels), and a sustained virological response of HCV infection obtained within 6 months, all of them maintained during the subsequent, quarterly laboratory monitoring.

Discussion

While the long-term outcome of co-infection or superinfection with different hepatotropic viruses responsible for chronic liver disease like HBV, HDV and HCV is expected to be poor [3, 7-9, 12], the short-term evolution of these infrequent conditions is still largely unknown, especially when these infection are diagnosed in their acute phase [5, 13], like in our patient. Chen et al. reported HCV chronicization among subjects diagnosed with a concomitant HBV-HCV co-infection [13], while Yan and Lee described the first case of spontaneous clearance of both HBV and HCV after an acute co-infection [14]. On the other hand, an already advanced HCV hepatitis had its virus cleared without a specific therapy also during HIV infection [15].

Many issues are claimed to interfere in his cumbersome process of chronicization, disease progression and outcome, including interferences among different hepatotropic viruses observed in animal models [16]. Other intensely debated subjects regard the time and mode of management of acute HBV and HCV hepatitis with their specific antiviral regimens [17]. In the presented experience, a prompt entecavir administration stopped HBV progression and favored viral clearance, as proposed by Dr. Rodolfo Sacco from Pisa, Italy, since 2014 [18], while initial and subsequent HCV damage were stopped by the time treatment with sofosbuvir-velpatasvir.

Conclusion

In conclusion, the field of acute and chronic liver disease is far to be completely understood. Stimulations conveyed

Keywords: Fulminant hepatitis, concomitant HBV-HCV infection, entecavir, sofosbuvir-velpatasvir, favorable outcome.
Received: 15-09-2022; Accepted: 18-12-2022
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from our report underline the present and future role of a timely antiviral treatment when facing an acute hepatitis B or C disease, in the light of both short time and long-term evolution of these severe and potentially life-threatening disorders.

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