Be Suspicious: A Unique Case of Herpes Simplex Virus Hepatitis

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Introduction

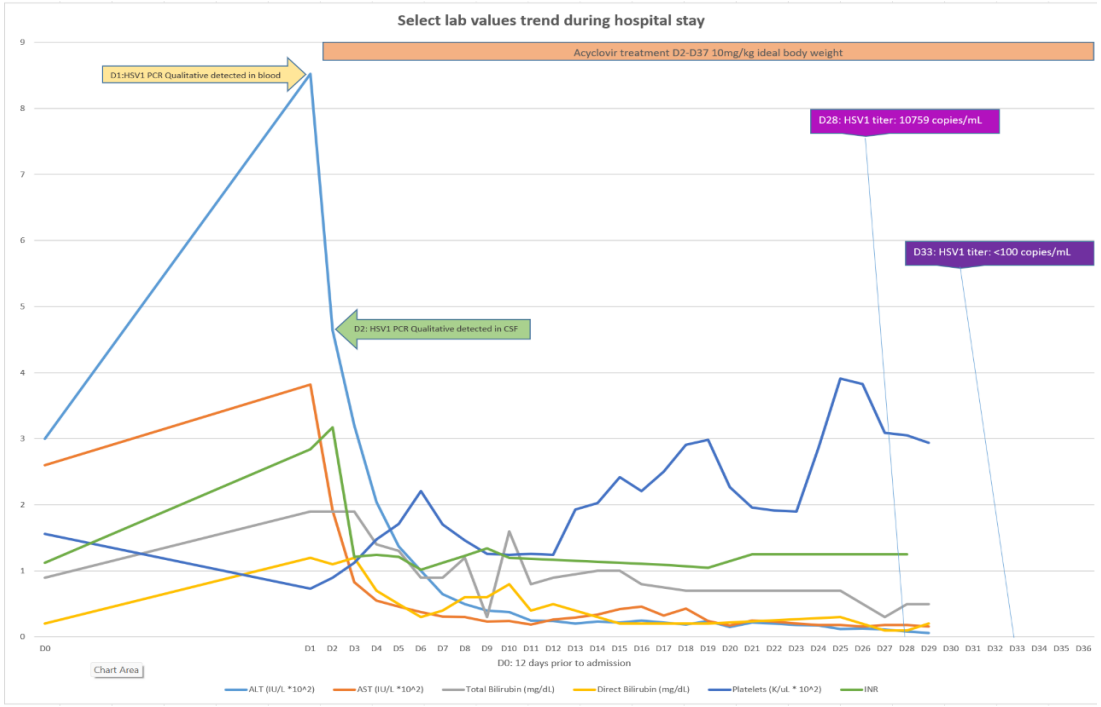
We present a case of disseminated HSV infection leading to acute liver failure and encephalitis in the setting of a history of autologous stem cell transplant.

Case presentation

- A 66-year-old female with medical history a past of amyloidosis status post chemotherapy and autologous stem cell transplant in 2018 and chronic kidney disease was transferred to a tertiary care facility for concern of acute liver failure.
- Laboratories demonstrated an AST of 5264 IU/L, ALT of 3237 IU/L, INR of 3.1, and creatinine of 5.92. No other significant personal or family history was found. Workup was negative for toxins.
- Her infectious workup was initially positive for E. coli in urine culture and Fusarium species in respiratory culture. Serum testing for HSV1 and HSV2 was performed, and the HSV1 qualitative PCR was found to be positive. The patient's liver enzymes remained elevated
- Lumbar puncture was performed and the patient was initiated on intravenous Acyclovir given a high index of suspicion for HSV hepatitis and HSV encephalitis.
- Ultimately, the cerebrospinal fluid studies demonstrated a positive HSV DNA.
- Liver biopsy demonstrated confluent liver necrosis involving the portal tract extending to Zone 2 with plasma cell predominance, and immunohistochemical staining was positive for HSV1 (Figure 1).
- Treatment was continued with improvement in the patient's liver enzymes and mental status.
- Serial HSV quantitative serum PCRs were eventually undetectable. The patient recovered and was found to be at her baseline on outpatient follow-up.

Discussion

- Patients who receive stem cell transplantation are considered immunocompromised for up to six weeks post-transplant and are at a higher risk of infection for one year.
- During this period, dormant viral infections such as HSV and VZV can be reactivated. This patient was immunocompromised, putting her at risk for reactivation of HSV.
- HSV hepatitis is an uncommon presentation of HSV that can cause fulminant hepatic failure in immunocompromised patients.
- Definitive diagnosis of HSV hepatitis can often delay diagnosis and increase mortality. Providers should maintain a high clinical suspicion for HSV hepatitis in immunocompromised patients presenting with acute liver failure and maintain a low threshold for starting anti-viral therapy if clinically indicated.



Key Points

- Always maintain a high index of clinical suspicion for HSV whenever you encounter a patient with acute liver failure in the setting of immunosuppression
- Early treatment and diagnosis is the key in management of HSV hepatitis
- Patients are considered immunocompromised and at higher risk for infection up to one year post transplant or chemotherapy.

Figures

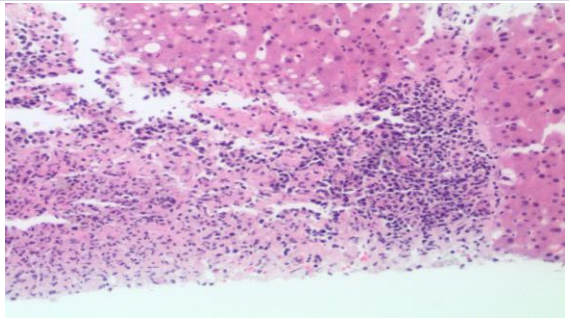


Figure 1: H&E stain of liver biopsy showing confluent liver necrosis involving the portal tract and extending to Zone 2. A moderate inflammatory infiltrate with plasma cell predominance located at the periphery of the necrotic area. No interface hepatitis or lobular inflammation is identified. Rare hepatocyte nuclei show smudge chromatin pattern, suggestive of a viral cytopathic effect.

Figure 2: select lab values trend during hospitalization.