HSV-Induced Acute Liver Failure: Treat First…..Diagnose Later?

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Learning Objectives

- To recognize and diagnose Herpes Simplex Virus (HSV) as a rare and serious cause of Acute Liver Failure (ALF)
- To recognize HSV PCR as an important screening test for indeterminate ALF
- To understand the importance of empiric treatment with IV acyclovir

Patient Presentation

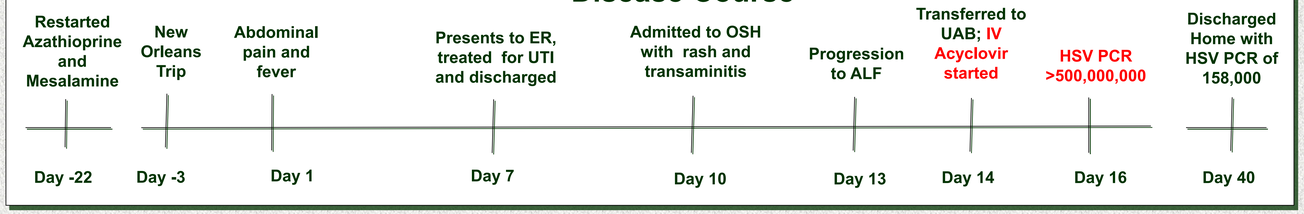
24 year old white female with Crohn's disease
- 10-days of abdominal pain and fever after returning from Sugar Bowl in New Orleans
- Recently restarted on Azathioprine and Mesalamine
- ER discovers elevated transaminases and admits patient

Initial evaluation for ALF: (<u>all unremarkable/negative</u>)
- Viral Hepatitis Panel
- Acetaminophen Overdose
- Autoimmune Panel
- Ischemic Hepatitis
- New Sexual Contacts
- Pregnancy (Fatty Liver)

Transferred to UAB for further evaluation
- With thorough social history, the patient disclosed recent unprotected sex with an infected partner in New Orleans

Physical Exam:
- T: 101.1 HR: 114 BP: 92/54 RR: 20
- Abdomen: diffuse tenderness, + distention, + fluid wave
- Skin: anicteric with scattered non-painful erythematous papulovesicles on chest and proximal extremities
- Neurologic: A&O x 1 with no focal deficits

Disease Course



Evaluation

- WBC: 1.67, Platelet: 52, Albumin 1.8, Ferritin: 30,000, LDH: 5,000, INR: 4.31, AST/ALT: 3886/2075, Tbili: 4.6, MELD 28
- Skin biopsy HSV+, Serum HSV-2 IgM/IgG +, EBV IgM/IgG +
- <u>HSV PCR >500,000,000 copies/mL on HD#2</u>

Introduction

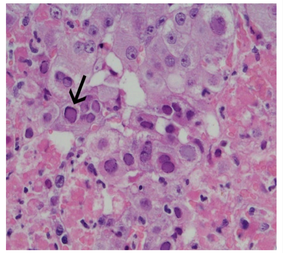
- 75% of HSV-Hepatitis cases progress to ALF
- HSV hepatitis accounts for ~1% of all cases of ALF
- HSV-induced ALF has a mortality rate approaching 75%
- Patient population includes immunocompromised (50%), pregnant (25%), and immunocompetent (25%)
- 60% of cases present <u>without</u> the typical oral/genital lesions common to HSV infections leading to diagnosis delay

Clinical Features of HSV ALF

- 3-10 days of fever (82%), abdominal pain (40%), and N/V (18%) precedes clinical deterioration to ALF
- Characteristic LFT pattern:
  - Marked rise in transaminase levels (> 1,000)
  - *Without* significant bilirubin elevation

Diagnosis of HSV Hepatitis

- Most cases diagnosed post-mortem due to diagnosis delay
- PCR testing for HSV DNA
- Liver Biopsy is gold standard
- Slide showing significant necrosis of liver parenchyma and typical intranuclear herpesvirus inclusions (arrow)



Treatment of HSV ALF

- Supportive care in a liver transplant institution
- Empiric treatment with IV Acyclovir 10mg/kg q8hrs
- Emergent liver transplant if condition deteriorates
- Due to risk of recurrence, lifelong prophylaxis with acyclovir or valacyclovir is recommended

Take Home Points

1. HSV infection should be considered in all patients presenting with ALF (with or without typical lesions)
2. HSV PCR is an accurate and useful screening test for cases of indeterminate ALF
3. Empiric therapy with IV acyclovir should be started on admission in cases of indeterminate ALF

References

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