

**BRIGHAM HEALTH**



**BRIGHAM AND  
WOMEN'S HOSPITAL**

**7th Annual Board Review and  
Update in Pulmonary and Critical  
Care Medicine:  
A 71-year-old male with nausea,  
vomiting and diarrhea**



**HARVARD MEDICAL SCHOOL  
TEACHING HOSPITAL**



**Mass General Brigham**

- 71 y.o. male with hx of HTN, DMII, sleep apnea, prostate cancer s/p prostatectomy /XRT (recent undetectable PSA).
- Hospital Day -1(5/2)
  - Driving back to Massachusetts from Florida
  - Fever, chills, malaise within 4 hours of onset of travel. Then developed nausea, vomiting and diarrhea
  - In Florida had felt well.
    - Normal state of health (felt well)
    - Golfed
    - No water activities.
    - No known tic or mosquito bites.
    - Had salad prior to car trip home but wife with same meal without symptoms.
  - ROS: Denies any prior wt loss. No dyspnea, cough or sputum. No chest pain. Diarrhea is watery and nonbloody. Remainder ROS negative in detail.

# Hospital Day 1

- Presents to community hospital (Hospital #1) upon return to Massachusetts.
- Home Meds:
  - Amlodipine
  - ASA 81mg
  - Atorvastatin
  - Hydrochlorothiazide
  - Lisinopril
  - Metformin
  - Sildenafil
  - Vardenafil
- Labs:
  - Creatinine=2.53 (baseline 1.08)
  - LFTs normal
  - WBC=WNL, Plts=113K
  - Lactate=WNL
  - Influenza A,B negative, RSV negative, Covid negative.
  - UA – Hyaline and Granular casts
- Rx - IVF

# Hospital Day 2 (Hospital #1)

- Repeat Labs:
  - ALT=535, AST=460
- Hepatitis serologies sent, abdominal CT ordered.
  
- Additional labs return:
  - HAV IgM, HBsAG, HBcAB IgM, HCV ab all negative
  - Abdominal CT
    - 4.2 cm R adrenal mass
    - Mild diverticulosis with mild diverticulitis
  
- Treatment
  - Started on ceftriaxone. flagyl

# Hospital Day 3 (Hospital #1)

- Ongoing diarrhea, progressive hypotension
- Labs:
  - Worsening transaminitis
  - Babesia, Anaplasma and Ehrlichia negative
  - Mononucleosis screen negative
- Rx
  - Additional IVF.
  - Abx broadened to vanc/cefepime/flagyl/doxy
  - Given empiric steroids (with adrenal mass)
- Transferred to hospital #2

# Hospital Day 3 (now at Hospital #2)

- Febrile on arrival. Ongoing diarrhea every 3-4 hours (non bloody). Denies abdominal pain.
- On exam: AOX3. Awake but ill appearing. Appear uncomfortable but NAD. Lungs clear. CV- exam RRR s1,s2. Abdomen non-distended, normoactive bowel sounds, soft, non-tender. No edema, no cyanosis
- Labs:
  - BUN=18, Creatinine=1.5
  - ALT=901, AST=1460, T.Bili=0.2
  - WBC=2.4, Plts=80
    - Polys 84%, Band=6.6%
  - Lactate=0.8
  - Procalcitonin=1.13

# Hospital Day 4 (Hospital #2)

- On exam: Worsening mental status and oral ulcer and thrush.
- Labs:
  - BUN=18, Creatinine=1.5
  - ALT=1086, AST=1879, T.Bili=0.3
  - Ferritin= 33,013
- Additional labs sent.
- Transferred to BWH for further hepatic evaluation with additional concern for HLH

- What is in your differential diagnosis?
- What testing would you perform?

## Mnemonic for causes of acute liver failure: The ABCs

A	Acetaminophen, hepatitis A, autoimmune hepatitis, <i>Amanita phalloides</i> (mushroom poisoning), adenovirus
B	Hepatitis B, Budd-Chiari syndrome
C	Cryptogenic, hepatitis C, CMV
D	Hepatitis D, drugs and toxins
E	Hepatitis E, EBV
F	Fatty infiltration - acute fatty liver of pregnancy, Reye's syndrome
G	Genetic - Wilson disease
H	Hypoperfusion (ischemic hepatitis, SOS, sepsis), HELLP syndrome, HSV, heat stroke, hepatectomy, hemophagocytic lymphohistiocytosis
I	Infiltration by tumor

CMV: cytomegalovirus; EBV: Epstein-Barr virus; SOS: sinusoidal obstruction syndrome (veno-occlusive disease); HELLP: hemolysis, elevated liver enzymes, low platelets; HSV: herpes simplex virus.

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# BWH Course (Admitted Hospital Day 4)

- Admitted to Medicine Team on Hospital Day 5
- Exam:
  - Constitutional: uncomfortable appearing
  - Eyes: conjunctiva anicteric
  - ENT: scattered aphthous ulcers in mouth, mostly on tongue
  - Neck: supple, no mass or visible J VD
  - Respiratory: Normal effort, clear breath sounds
  - Cardiac: Regular rate w/o LE edema
  - GI Soft , mildly distended, no noted HSM or palpable masses, normal bowel sounds, no ascites
  - Skin: no rash, jaundice
  - Psychiatric: normal mood and affect
  - Neurologic: appropriate to questions, moves ext w/o issues
- Labs Creat=2.14, ALT=1575, AST=3381, Ferritin >100,000

# BWH Course (Admitted Hospital Day 4)

- Admitted to Medicine Team on Hospital Day 5
  - Labs Creat=2.14, ALT=1575, AST=3381, Ferritin >100,000
- Progressive altered mental status
- Labs from OSH - HSV-1 PCR positive
- Started on acyclovir
- BWH Labs notable for worsening LFTs

LIVER FUNCTION TESTS	Day 7	Day 6	Day 5	Day 4
AST (SGOT)	>7000 ▲	>7000 ▲ <sup>C</sup>	>7000 ▲	>7000 ▲
ALT (SGPT) (U/L)	RESULT ...	2,456 ▲ <sup>C</sup>	1,962 ▲	2,037 ▲
Alk Phos	385 ▲	371 ▲	340 ▲	329 ▲
Bilirubin (Total)	1.9 ▲	1.9 ▲ <sup>C</sup>	1.6 ▲	1.5 ▲
Bilirubin (Direct)	2.4 ▲	1.3 ▲ <sup>C</sup>	2.7 ▲	2.3 ▲
Albumin	4.4	5.2	4.0	4.3
Globulin	1.4 ▼	1.5 ▼	1.4 ▼	1.5 ▼

- Progressive shock (transferred to MICU Hospital Day 6)
- Expired Hospital Day 7

# HSV Hepatitis

- Initially described 1969
- 0.8% of acute liver failure
- 2-4% of viral induced acute liver failure
- HSV-1 and HSV-2 reported
- More commonly seen in immunocompromised patients but immunocompetent patients at risk
- Mucocutaneous lesions consistent but not required (seen 50% of time)
- Rx: Early initiation of Acyclovir is key
  - Liver transplant outcomes poor

# References

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