



06/06/24 Morning Report with @CPSolvers



"One life, so many dreams" Case Presenter: Shashank(@) Case Discussants: Rabih(@rabihmgeha) and Ibrahim(@IbrahimOmer_)

CC: 28/M presenting to ER with fever, loose stools, vomiting **10 days**

HPI: 10 days prior to admission, Fever: high grade, no chills, rigor Vomiting: post-prandial, non-projectile Diarrhea: no abdominal pain, 4-5 episodes/day Rx oral cefixime, paracetamol → fever reduced, vomiting, loose stools persistent Recurrence of fever → Presented to ER No close contacts No weight loss, joint pain, rashes, dysuria **Empiric:** Ceftriaxone → Persistent fevers → Meropenem(persistent fever) + dexamethasone → Discharged Presented with fever, AMS x 1 day Oral azithromycin + Ceftriaxone + HLH94 protocol: Improved → Worked up for Bone marrow transplant

PMH: Multiple Recurrent GI infection from childhood Dengue -1 month ago.

Meds: None

Fam Hx:

Soc Hx: Travel to neighboring state 4 days ago

Health-Related Behaviors: No ethanol, substance abuse

Allergies: NKDA

Vitals: T: febrile HR: 82/min BP: 122/84, no orthostasis RR: 24 SpO2 96 RA

Exam:

Gen: AO x3

HEENT: Scleral icterus.

Abd: RUQ, epigastric tenderness. **Hepatosplenomegaly**

Other systems: WNL

Notable Labs & Imaging:

Hematology: WBC: 7.8(N83L9) Hgb: 11.4 → 10 Plt: 71k(persistent)

Chemistry: Na: 128K: 4.32 Cl: 95HCO3: BUN:27 Cr: 0.87 glucose:104 Ca: 8.9 Mg:1.9 **AST:267 ALT:151 Alk-P:396 GGT:257 TB 6.09/4.7 INR: 12.5/1.04 apTT 37** TFT: WNL, HIV, HbsAg, HCV, HAV, HEV: negative **UA:** 2+albumin, 12 RBC/HPF

Dengue, malaria, leptospira, scrub IgM: Negative CMV, EBV PCR, HSV antibodies: negative **Ferritin >3000 TGL 551, Fibrinogen 348** **Widal:** Typhi H(>1:320)

Blood c/s: sterile → Repeat c/s: Sterile **Urine c/s:** ESBL E.coli **LP-CSF:** c/s: **S.Typhi**, Blood c/s: **S.typhi** **BMA+BMx:** HLH, histiocyte infiltrates **Whole Exome Sequence:** Hemizygous mutation (SHKBP1)

Imaging: USG: Mild hepatosplenomegaly. Normal liver echo. Normal duct, portal vein MR Brain: No SOL, hemorrhage. No meningeal enhancement. **Dx:** Primary HLH - Triggered by Salmonella typhi (Variant of X-linked agammaglobulinemia)

Problem Representation: 28 M, p/w fever D/V. found to have HSM, anemia thrombocytopenia, with elevated liver enzyme, ferritin/TG, positive BC with S.Typhi.

Teaching Points (Parisa):

Key variable to be considered in diarrhea → Travel history; Abx exposure (c.diff); immune status (HIV systemic/extra intestinal, IBD local); STD (syphilis, chlamydia, entamoeba); systemic infection (Covid, Legionella)

Scleral icterus → liver problem vs hemolysis → Next steps → **Fractionated Bili** (Diarrheal illness → direct bilirubinemia) → **Imaging** (US; CT scan) → Portal vein (schistosomiasis); biliary duct (liver fluke); focal mass (E. histolytica); image negative (severe manifestation of viral hepatitis)

Elevated (Alp + GGT) → **localized to liver** → nature of hepatic involvement → **Liver parenchyma vs biliary drainage ducts** (do not secrete liver enzyme) → pancreatic duct cancer does not have elevation liver enzyme Height of bilirubin → duct problem; even if the problem is in the parenchyma is anatomically closed to ducts

Expanding viral etiologies → Anemia + thrombocytopenia (w/o leukopenia) → hemorrhagic fever (Dengue)

Hematuria → Glomerulus (albuminuria) to urethra → **Glomerular bleeding** → GN; anticoagulation glomerular bleeding; BM dx → is this manifestation of bleeding diathesis (hematologic fingerprint)

Splenomegaly → Mononucleosis (EBV CMV) acute; tick borne rickettsia acute; granulomatosis (TB) → Granuloma acute infection → Bacteria (Listeria, salmonella); fungia (blasto); parasite (toxoplasma)

Blood culture sensitivity for **salmonella** is not so high; we need to think about base rate and featuring of thrombocytopenia → empirical Tx (meropenem) → BM bx

HLH syndrome → high ferritin; low Hb; low Plt; high TG Ongoing trigger for HLH → infection; AI; cancer → HLH form infection should not treat with immunosuppression (genetic vulnerability)