09/25/24 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter: David Serantes (@davserantes) Case Discussants: Sharmin (@Sharminzi) and Reza (@DxRxEdu)

CC: Asthenia and transient LOC

HPI: 18 y/o F referred from family physician to ER. Went to Nigeria 1 month ago → developed there fevers, nausea, diarrhea, presumed dx of malaria, empirical treatment with Artemether/Lumefantrine and Ciprofloxacin → improved. Fever and malaise resolved. Came back to Spain, but had asthenia. LOC for a few seconds (prodromal dizzy, blurry vision) while waiting for the family physician → came to ER. No chest pain.

PMH: n/a

Meds: n/a

Fam Hx: n/a

Soc Hx: No smoking or alcohol

Health-Related Behaviors: Travel to Nigeria 1 month ago, first travel, born there, came to Spain at 3 months of age. NO MALARIA prophylaxis!

Allergies:

Vitals: T:37.5 HR:105 BP: 110/70 **RR:** 16 SPO2: 99% (RA)
Exam:
Gen: A&Ox3,
HEENT: wnl, **CV:** wnl, **Pulm:** wnl, **Abd:** wnl
Extremities/skin: no rashes, no edema etc.

Notable Labs & Imaging:
Hematology:
WBC: 7.5k Hgb: 7.3 Plt: 289 MCV:88 CMP:
Chemistry:
Na: 138 K: 4.5 urea: 27 Cl: HCO3: BUN: Cr: 0.8 AST: ALT:61
Alk-P:120 Albumin: 3.8 Glucose: 96 CRP: 9.46 INR: 1.2 PTT: 32
Fibrinogen: 600
UA: Protein: 100 Bili: -ve RBC/hpf: 6-10 WBC/hpf 100 UPC: 1.9
Reticulocytes: 213 (8.1%). LDH:1500
CK:1000 Direct Coombs: weakly +ve
HIV, HBV, HVC, Syphilis -ve, Blood cultures: -ve
Smear:Dianocytes Panmalaric Ag test: +ve Thin & thick smears : -ve
Fevers: 38-39, Brown-dark urine
Next day: Hb:6, **re-thick smear: no parasites, Malaria-PCR: +ve Pl.falciparum** → compatible w/ recently treated Malaria
Iron panel nl, B12 + Folate nl, ANA >1:316 (Anti-SSA, anti-RNP), **Coombs:** weakly +ve again, **G6PD:** +ve
Later repeated thick smear positive for Malaria
Imaging:
EKG: normal, CXR: normal

Presumed dx: Probably Blackwater fever due to partially treated Malaria >> unable to exclude a component of **Ciprofloxacin induced hemolytic crisis in G6PDH-deficiency**

Problem Representation: An 18 year old female with history of recent travel leading to malaria infection, presented to ER with weakness and transient loss of consciousness with increased heart rate, found to have hemolysis with decreased Hb, raised LDH and recently treated P. falciparum malaria ultimately diagnosed to be having blackwater fever as a complication.

Teaching Points (Anmolpreet) :
I] Transient LOC: syncope ***(reflex, orthostatic, cardiac),*** presyncope, sugar(hypoglycemia), stroke→Important to ask about :
any **prodromal symptoms (to consider vasovagal syncope),**
postictal confusion, tongue bite (to think about seizure)
→Prior history of malaria infection makes us think of ***untreated malaria (dormant stages), complications of treatment, complications of malaria itself!***
→Subjective:- immunodeficient state? Any past history?
II] Acute vs Chronic: (like other ds- heart failure, acute liver failure-cirrhosis) **w.r.t. Anemia**→ differentiation based on prior *labs, vitals, normal MCV in this case-not enough time for compensatory changes)*; Cardiovascular system compensates in cases of chronic anemia, but in cases of acute anemia; HR might increase unless it has some other cause for tachycardia.
–Acute anemia→*finding causes* → **1. Bleeding, 2. Hemolysis (***we need: LDH, haptoglobin, smear; to get the blood sample before transfusing blood products.)* **, 3. Leukaemia**
–Chronic anemia mostly have problems in bone marrow → reticulocytopenia
→Evaluating GI tract(bloody stools) and GU tract
III] Elevated LDH: hemolysis, rhabdomyolysis, acute liver/lung pathology, malignancy.
IV] Hemolysis: *finding causes →* **MAHA** (thrombocytopenia, schistocytes),
autoimmune hemolytic (Coombs test, secondary causes),
infections (malaria, babesia)--> sensitivity and specificity of thin and thick smears depends on the pathologist ability to see the intracellular organisms,
RBC environment: membrane, G6PD (antimalarials→ oxidative stress)
V] Positive ANA in a young woman→ lupus→ autoimmune hemolysis→ to confirm, look for other symptoms!
VI] G6PD: drugs (primaquine, chloroquine), even an infection can trigger hemolysis in deficiency **(X-linked recessive; so difficult to see in females)**
VII] Blackwater fever: rare, serious complication of P. falciparum malaria characterised by intravascular hemolysis.