9/8/23 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter: Youssef Saklwai (@SaklawiMD) Case Discussants: Rabih (@rabihmegha) and Prof. Reza (@DxRxEdu)

CC: 62yM p/w fever and chills

HPI: PMH: SLE c/b ESRD s/p renal transplant years prior c/b graft failure continued on tacro and prednisone to prevent further rejection; severe AR s/p mechanical AVR on warfarin, bladder Ca tx w/ transurethral resection and intravesical BCG. p/w fever, chills, and rigors.
Bcx +strep sanguinis, on ceftriaxone. High grade fevers daily continued despite abx.
Reported mild chronic np cough. Denied sore throat, n/v/abpain. No dyspnea, rashes, dysuria. +night sweats

PMH:
SLE, kidney transplant, LAVG fistula and on dialysis, bladder ca, severe AR. no hardware
Meds:
warfarin, nifedipine, tacro, prednisone

Fam Hx:
unremarkable

Soc Hx:
Works in store, no pets or recent travel or hiking. From georgia, was in military and travelled to Belgium. Never been homeless, been in prison and worked in prison,, or been a sex worker. No sick contacts.
Allergies: NKDA

Vitals: T: 39.1 **HR:** 110 **BP:** 150/80 **RR:** on RA
Exam:
Gen: uncomfortable
CV: no murmur except mechanical heart click
Pulm: clear to auscultation

Notable Labs & Imaging:
Hematology:
WBC: 17k (75% neu, 0% eos, 18% lymph) Hgb: 8.7, bl ~9.5 (MCV 81) Plt: 300

Chemistry:
Na: 136 K: 4 Cl: 100 Co2: 27 BUN:31 Cr: 6.3
AST: 107 ALT:89 Alk-P: 213 Albumin:
ESR 69 CRP 106
Compl wnl. Repeat bcx x4 -ve anti-dsDNA -ve
TTE and TEE no vegetations
U/S: mild soft tissue edema
Hgb dropped to 6.1 w/ persistent dialysis, transfused twice, plt dropped to 100
CMV PCR, toxo IgG and IgM bartonella, brucella, coxiella, HIV all -ve. Adeno PCR wnl, EBV PCR 2900
Chol 120, Triglyceride 368, LDL 97. Ferritin 2100, IL-2R 47000
LDH 500
Imaging:
CXR clear. U/S RUQ: hepatomegaly
PET CT: inc uptake adj to R hip c/f abscess. Multiple mildly FDG subcentimeter solid pulmonary nodules in LUL and RLL. Diffuse FDG uptake in b/l lower lobes
Bronchoscopy w/ BAL cultures -ve, bac fungal cx -ve. AFB NGTD. bx w/ cytology no malig. R hip cultures -ve and AFB NGTD
Repeat quant +, AFB bcx +M bovis
Final Dx: Mycobacterium bovis

Problem Representation: 62 YO M w/ ESRD post-transplant and PMH of bladder ca treated w/ intravesical BCG presents w/ fever, chills, and rigors and is diagnosed with M. bovis bacteremia.

Teaching Points (Ibrahim):
- *approach to fever, chills, and rigors* (inc. temp. Of body to meet setpoint in hypothalamus): **rigors** → bacteremia, **fever** → localize to organ system
- **hx of transplant** → evaluate time: nosocomial → immunosuppression related (from organ, e.g. CMV; reactivation of indolent infection; organ rejection) → years later → community-like infection(s)
- immunosuppressed susceptible to certain types of cancer → PTLD (w/ in 1 year of transplant, but can appear later; consider if EBV +ve; won't present with VERY high fever), skin cancer, Kaposi's; drugs associated with S/E, inc. hypersensitivity
- **Positive blood cultures** → TP vs FP → decide by *number of blood cultures, time to positivity, type of organism (GN vs GP (will depend on host vs organism))* → if unresponsive to abx, think about source vs. another diagnosis
  - *consider PMH (e.g. TTE if valve replacement)*
- **Graft vs fistula**: prosthetic vs not; graft may be a nidus of infection
- **Wide pulse pressure in a pt. w/ valve disease** → think valve insufficiency vs. BP cuff exaggerating pulse pressure vs vascular sclerosis (esp. If PMH of ESRD).
- Consider LDH, haptoglobin, and blood smear if AST > ALT, which may suggest **hemolysis**
- Abx in bacteremia → an immediate response (24 h), if persistently febrile → consider another SOURCE → consider CAP CT, PET CT (graft)
- **LDH** → if v. high → think lymphoproliferative disease
- Typically bicytopenia (if hemolysis → consider Coomb's), H-score → **HLH** (SLE, mono, lymphoma) → exaggerated immune response (genetic predisposition)
- **Granulomatous infections in ESRD** → intravesical BCG for bladder cancer
- **FDG avidity** → metabolically active → can be infection, cancer (primary source will be obvious, even if metastatic); nodularity may hint towards disseminated infection if on top of acute constitutional symptoms, consider review of hx (TB vs endemic mycoses vs non-TB mycobacteria) and biopsy
- **Treat empirically if high LH for TB** (difficult to culture) → M. bovis highly resistant to pyrazinamide → adjust RIPE
- Patients w/ ESRD and TB will typically present asymptomatically; suspect immune activation if otherwise, esp. post abx; consider safety of BCG if immunosuppressed