7/1/20 Morning Report with @CPSolvers

***Case Presenter**: Dr. Stephanie Sherman (@StephVSherman) **Case Discussants**: Dr. Mike Rose (@MikeRoseMDMPH) and Kaitlyn Thomas (@smalltownOMS)*

CC: Ongoing fevers, tachycardia, confusion and peri-nose and ear crusty skin lesions in a woman w advanced HIV hospitalized for 6 weeks. No ARV previously and started in new regimen.

HPI: 30 F advance CD4: 9 VL 400 Homelessness and schizophrenia Admitted in mid may for 2 weeks of SOB, cough, chills and fever.Beta2 peptidoglycan high at admission

Working dx: varicella zoster encephalitis w skin and lung involvement

CT: Many nodules and ground glass in lung.

Sputum and BAL: Negative Few days into hospitalization, she became obtunded and seized.

Lumbar puncture (prior CT was normal): PCR, low WBC:7, lymphocytes, protein 140

Treated w Acyclovir and empiric PjP treatment for 2 weeks improved mentally and, lung and skin lesions were all zoster. 2 week ago(after finishing acyclovir) started to have fever (102), confusion and agitation. Erosion worsened they got denuded, no new skin lesions, no pain, no secretions

PMH:
Schizophrenia
HIV

Meds:
New ARV
Vitamins

Fam Hx: none

Soc Hx: Homelessness

Health-Related Behaviors:
Allergies: none

Vitals: **T**: **101 HR**: 100-110 (120 with fever) **BP**, **RR**, **SpO_2**: wnl

Exam:
Gen: Thin, ill and deconditioning looking, sleepy, touches lesions
HEENT, **Neuro**, **CV**, **Pulm**, **Abd:** wnl
Extremities/Skin: Only crusting in ear and nose

Notable Labs & Imaging:
Hematology:
WBC: 5 lymphopenic Hgb: 10 MCV: 90 Plt:normal
Iron pattern of chronic inflammation
Chemistry:
Metabolic panel → wnl
Liver function test non done in weeks.
Imaging:
Blood cultures: negatives
CXR: Non specific interstitial marking
Lumbar puncture: 90% lymphocyte, protein: 60

Problem Representation:
30 yo F w history of advanced HIV, schizophrenia and homelessness. She is admitted due to fevers, tachycardia, confusion and peri-nose and ear crusty skin lesion. During her stay she is dx with varicella zoster encephalitis w skin and lung involvement. However, her state worsens after finished acyclovir and PJP treatment.

Teaching Points (Smitha):
Clinical Reasoning Pearl (CPR): How to approach a complex case with long hospital course: 1) revisit initial presentation, 2) understand hospital course timeline, 3) re-construct problem representation
CPR: When there is c/f hospital-acquired infection, consider local epidemiology to prioritize differential, procedures (e.g., lines, drains).
Drug failure: non-infectious, wrong bug, wrong drug, source control (e.g., lines, abscess, tissue penetration), natural history (e.g., too aggressive infection, too soon)
Non-pyogenic encephalitis infections esp in HIV patients (e.g., VZV encephalitis): cell count is rarely >100 in the lumbar puncture, "normal" WBC does not r/o atypical infection
Brain + lung + immunocompromised → consider Nocardia, culture may not be most sensitive
CPR: It is the norm for Immunocompromised pt to have multiple coexisting infections/processes
IRIS: usually due to an underlying infection. when immune system reconstitutes → robust inflammatory infection. When immune system reconstitutes, inflammatory CD4 reconstitutes first before the counterreg response which leads to hyperinflammatory response
CPR: Ying-yang bias is the feeling of "what could I possibly add to this" after a thorough workup → where to start? comb through to make sure no pieces missing (e.g., did the PCR actually get sent) , repeat diagnostic test (e.g., tube of truth "CT") when symptoms aren't improving, ask for additional help (e.g., dermatology consult for biopsy of skin lesions)
Skin lesions in HIV: Kaposi's, bartonella (bacillary angiomatosis), , VZV, mycobacterial, endemic mycoses and other fungal infections
CPR: Use treatment as a diagnostic tool → consider restarting acyclovir
Complications of VZV:
VZV pneumonitis: rare entity, often in primary VZV usually in adult, immunocompromised pt, causes severe PNA.
VZV Vasculopathy: virus can invade the vessel wall→ CNS vasculitis triggered and mediated by VZV. Presentation can range from acute stroke to more diffuse cortical involvement. Can be seen on MRI/MRA. Treated with longer-term anti-virals.