CASE 1

CASE STEM:

22yoF presents to ED with a headache and a fever for the last 3 days. She's recently returned from travelling abroad after she finished her degree. She complains of myalgias as well and her parents state that she is very fatigued and not herself. Please manage this patient.

HISTORY:

PMHx: Healthy, had asthma as a child, immunizations UTD
Meds: on OCP, taking doxycycline while travelling
Allergies: Amoxicillin (rash)
SHx: student, non-smoker, social alcohol use, occasional marijuana

HPI: Developed fever 3 days ago, ~38.8, headache worsened yesterday, gradual onset, generalized pain. No visual symptoms, no weakness/numbness. Nauseous, no vomiting. Normal BMs. Generalized chills and myalgias. Feels exhausted. No upper respiratory symptoms. Mild cough, no shortness of breath. No sick contacts at home, returned from travel 2 weeks ago. Last fever was yesterday, took Tylenol & Advil before coming in.

Travel history: Touring S.E. Asia with friends (no one else is sick), visited Thailand, Laos, Cambodia, Vietnam over the course of 4 weeks. Stayed mostly in cities but did a more rural adventure to northern Thailand, rode an elephant through jungle, crossed river on a raft, no swimming. No mosquito nets at night, most rooms had A/C. Took doxy but might have missed a few doses. No animal bites, avoided raw foods, no sexual contacts, no drugs, no trauma/medical care required, no tattoos/piercings.
Pre-travel: Visited a clinic, received vaccines for Hepatitis A and Yellow Fever.

PHYSICAL EXAM:

HR: 110, BP 110/70, RR 20, Temp 37.5, SpO2 98% RA
General Appearance: patient appears slightly unwell, squinting against the light, slightly pale
CNS: PERL, no focal deficits, oriented x3
HEENT: Normal conjunctiva, mucous membranes moist, neck supple, no lymphadenopathy
CVS: Normal heart sounds
RESP: good air entry bilaterally, no crackles/wheezes
GI: Mild generalized tenderness, no focal, no rebound/guarding, no hepatosplenomegally
GU: nil
MSK: no rash, no hot joints

QUESTIONS:

1) **What is your differential diagnosis?**

2) **What is your initial management?**

3) **What investigations would you like to order?**

INVESTIGATIONS:

CBC: HB 115, Plts 80, WBC 14.1
normocytic anemia, no eosinophilia
Lytes: normal, Cr 125, BUN 17, glucose 5.6
If LFTs: mild elevations in transaminases, normal bilirubin
If thin/thick smears, read as normal, If rapid antigen test: negative
CXR: nil acute, Urine R&M: normal
If CT: Normal, If LP: Normal, opening pressure slightly elevated

QUESTIONS:

1) What is still on your differential diagnosis?

2) What is your disposition? Any specific treatments?

PROGRESSION:

It's you're reviewing the results of the investigations, the RN calls you stat to the bedside as the patient has started seizing. generalized & lasts about 2min and resolves after 2mg of IV lorazepam. You ask for a repeat set of vitals and get the following:
HR 125, RR 28, BP 88/55, Temp 39.5, SpO2 94% RA
The patient is much more somnolent now and quite pale. **How would you like to proceed?**

INVESTIGATIONS:

CBC: Hb 90, Plts 80, WBC 20
Lytes: normal, Cr 140, BUN 25, glucose 2.1
VBG: pH 7.15 CO2 55 Bicarb 12, Lactate: 6.0
Coags: normal, LFTs: transaminases increased
CXR: bilateral pulmonary edema
Microbiologist calls, they over read the thin & thick smears and think there is a P. malariae infection.

Questions:

1) What is the appropriate management of this patient?

2) What are signs and symptoms of severe malaria?

3) How is malaria diagnosed? Advantages and disadvantages to different tests?

Please come up with 3-4 key points you learned about the diagnosis and management of malaria to share with the group.

Learning Objectives:

1) develop an approach to fever in the returning traveller, including ddx and investigations
2) diagnosis of malaria
3) management of potential malaria infection
4) recognition and treatment of severe malaria