Opportunistic Infections and HIV Disease

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OI and HIV Disease

A 30-year-old male presents with 7 days of fever, nonproductive cough, increasing shortness of breath and fever 101-103°. He was given some Levaquin with no response. He was recently diagnosed with HIV and has a CD4 count of 140. His viral load is 250,000. On exam he has oral candida. He has bilateral rales on exam. A CBC reveals WBC 2400. A CMP reveals an LDH of 650. A chest x-ray reveals bilateral symmetrical interstitial infiltrates. A blood gas reveals a FiO₂ of 60 on room air.

What is the most likely diagnosis?
(A) Miliary tuberculosis
(B) CMV pneumonia
(C) Pneumocystis jiroveci pneumonia
(D) Influenza A pneumonia
(E) Candida pneumonia
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Which clue in the history is most helpful in the diagnosis?
(A) Chest x-ray results
(B) LDH level
(C) HIV with CD4 < 200
(D) Unresponsive to Levaquin
(E) Oral candida

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What is the best therapy for this patient?
(A) Clindamycin, Primaquine
(B) Bactrim IV plus steroids
(C) Bactrim IV
(D) Voriconazole
(E) INH, Rifampin, PZA, Ethambutol

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After 3 days the patient has improved clinically but repeat sputums still reveal the organism. What do you do now?
(A) Do an invasive biopsy to see if in lung tissue
(B) Change therapy to Pentamidine
(C) Change therapy to Clindamycin, Primaquine
(D) Nothing but complete 21 day therapy
(E) Give higher levels of the agent he is on
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What do you suggest after his therapy is complete?

(A) Nothing but follow-up if gets worse
(B) Repeat CT scan chest in 4 weeks
(C) 2° prophylaxis with Bactrim until CD4 > 200 for 3 months
(D) Influenza and pneumococcal vaccines
(E) Induce sputum to see if residual organisms

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All of the following conditions occur in HIV with CD4 > 200 except

(A) Tuberculosis
(B) Non Hodgkin’s lymphoma
(C) Bacterial pneumonia
(D) Cerebral toxoplasmosis
(E) Herpes zoster infection

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Which organism do we commonly see when the CD4 count is less than 200?

(A) Reactivation pulmonary tuberculosis
(B) Pneumocystis pneumonia
(C) Disseminated MAC
(D) CMV retinitis
All of the following conditions can occur in HIV with CD4 < 50 except:

A. Disseminated MAC
B. CMV retinitis, colitis
C. Cryptococcus disseminated
D. Progressive multifocal leukoencephalopathy
E. Primary CNS lymphoma

True statements regarding immune reconstitution syndrome in HIV patients include all of the following except:

A. IRIS may transiently worsen clinical manifestations of OI
B. If severe may necessitate NSAID or corticosteroids
C. Usually occur only when initial CD4 count > 300
D. Usually will see with OI such as tuberculosis, MAC, CMV
E. The majority of cases occur after the initiation on HAART

A 30-year-old male who is HIV positive is brought in by family with confusion. He has had a progressively severe headache over the past 2 weeks and then had fevers of 100-101°F occur. His family recently noted mouth asymmetry and the patient complained of diplopia. His HIV is untreated and last CD4 was 48. His viral load was 250,000. On exam he had a witnessed seizure. He has possible papilledema on ophtho exam. Labs: CBC, CMP are normal. What would you do next?

A. CT of head
B. Lumbar puncture
C. Brain biopsy
D. Start empiric therapy
E. Put in isolation
A CT scan reveals multiple ring enhancing lesions with associated edema. Lesions are 1 cm or less in size. What is the most likely diagnosis?
(A) Cryptococcal meningitis
(B) TB meningitis
(C) Primary CNS lymphoma
(D) Toxoplasma encephalitis
(E) Progressive multifocal leukoencephalopathy

What other test may be helpful to make the diagnosis?
(A) JC PCR in spinal fluid
(B) Toxoplasma IgG serology in blood
(C) Cryptococcal antigen in blood
(D) EBV serology in CSF
(E) Positive PPD

The appropriate test above is positive. What should be done next?
(A) Brain biopsy
(B) Start Amphotericin B
(C) Start Pyrimethamine, Sulfadiazine
(D) Start INH and Rifampin
(E) Radiation therapy
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The patient has no clinical improvement on therapy and a repeat CT of the head shows worsening of the lesions. What should be done now?
(A) Lumbar puncture  
(B) Empiric dose of corticosteroids  
(C) Brain biopsy  
(D) Place a VP shunt to reduce CSF pressure  
(E) Consider hospice care

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A 35-year-old HIV positive male presents with 5 days of headache which is progressively worsening, fever 100-101° and changing mentation according to his friends. He had been off HAART therapy and his last CD4 was 80 with a viral load of 100,000. He has no travel history or pets but he lives in an old house with various birds, including pigeons living in his attic. On exam he is alert showing no focal neurological signs. The rest of the physical is normal. Labs reveal a normal CBC and CMP. What test would you want next?
(A) CT of brain  
(B) MRI of brain  
(C) Lumbar puncture  
(D) Specific blood work  
(E) Other tests

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The CT scan of brain shows some ventricular enlargement and atrophy. The lumbar puncture reveals an opening pressure of 320, mild increase in CSF protein with decrease in glucose. There were a few lymphocytes. What is the likely diagnosis?
(A) CMV encephalitis  
(B) HIV encephalitis  
(C) Cryptococcal meningoencephalitis  
(D) progressive multifocal leukoencephalitis  
(E) Herpes simplex encephalitis

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What tests would you order now to verify the diagnosis?
(A) CMV PCR in serum, CSF
(B) HIV PCR RNA in CSF
(C) Cryptococcal antigen
(D) JC/PCR/DNA in CSF
(E) Herpes simplex PCR in CSF

What would be the best therapy for this condition?
(A) Fluconazole
(B) Amphotericin B plus 5 Fluorocytosine
(C) IV Acyclovir
(D) Start antiretroviral therapy
(E) Ganciclovir

A 25-year-old female presents with progressive visual problems with her eyes. She states about 3 weeks ago she noticed floaters in her right eye and over the last week has had loss of vision in the right eye. She has no pain, fevers. She is HIV positive and has continued to refuse therapy. Her last CD4 count was 24 with a viral load of 350,000. On exam she is alert. All her cranial nerves are intact. On ophtho exam she has large yellow-white granular areas with perivascular exudates and hemorrhages in her right retina. Her left retina reveals a few peripheral perivascular exudates. The rest of the exam reveals oral candida.
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What is the most likely diagnosis?
(A) Toxoplasmic chorioretinitis
(B) Vasculitis of the retina
(C) Herpes retinitis
(D) CMV retinitis
(E) Candida endophthalmitis

What additional test may help verify the diagnosis?
(A) Biopsy of the retina
(B) CMV, IgG and IgM
(C) Candida antibody testing
(D) ANCA test
(E) Herpes zoster IgG

What other complication is frequently seen with this condition?
(A) Glomerulonephritis
(B) Myocarditis
(C) Pneumonitis
(D) Enterocolitis
(E) Hepatitis
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What therapy should be given?
(A) Fluconazole
(B) High dose corticosteroids
(C) Acyclovir
(D) Ganciclovir
(E) Intraocular ganciclovir implant

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All of the following are true regarding TB and HIV except
(A) Annual risk for latent TB to become active in HIV is 7-10%
(B) Presentation of TB in HIV similar to immunocompetent when CD4 > 350
(C) Granulomas may be absent when CD4 low on histopathology specimens
(D) TST is positive in most patients when CD4 > 100
(E) IRIS may occur and be severe when CD4 < 50

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All of the following are true in patients with HIV and latent TB except
(A) All HIV patients should be screened for TB
(B) TST is considered positive for HIV only if > 10mm
(C) Treatment for latent TB is INH for 9 months
(D) HIV patients should be treated if have close contact with active TB even with negative TST
(E) IGRA more specific than TST

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A 45-year-old male who recently immigrated from Africa presents with a 3 week history of fever, night sweats, weight loss and a Non-productive cough. He has HIV disease and an initial CD4 count is 50 with a viral load of 250,000. He is started on therapy with Truvada and Kaletra. He had prior history of routine Hepatitis B vaccine and BCG. His exam reveals some cervical and axillary adenopathy 1cm non-tender. Lungs reveal rhonchi and decreased breath sounds in upper lobe. A PPD is negative. A chest x-ray reveals bilateral apical scarring with a questionable infiltrate right apex as well as hilar adenopathy.

What would you do next?
(A) Admit and place patient in isolation
(B) Start therapy with INH
(C) Biopsy a cervical node
(D) CT scan of lung
(E) PET scan of lung

What is the likely diagnosis?
(A) Lymphoma
(B) Histoplasmosis
(C) Tuberculosis
(D) Lung carcinoma
(E) Community acquired pneumonia
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The patient is unable to cough up sputum. What should be done now?
(A) Directed bronchoscopy with BAL
(B) Open lung biopsy
(C) Treat empirically
(D) Transtracheal aspiration
(E) Induced sputum

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Positive AFB are found on sputum sample smear. What therapy should be provided now?
(A) INH, PZA, Rifampin, Ethambutol
(B) INH, Rifampin, Streptomycin
(C) INH, Rifampin, Cycloserine, Ethambutol
(D) Azithromycin, Ethambutol, Rifampin
(E) INH, Rifampin, Cycloserine, PZA

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After 2 weeks on therapy he develops worsening chest infiltrates as well as increasing tender cervical and axillary adenopathy. What should be done now?
(A) Biopsy a lymph node
(B) Await culture and sensitivities
(C) Add a short course of corticosteroids
(D) Get another sputum for reevaluation
(E) Change regimen to 2nd line agents for resistance

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All statements are true regarding HIV and TB therapy except:
(A) Duration for uncomplicated TB should be 6 months
(B) If patient has cavitory TB therapy should be 6 months
(C) If sputums are positive after the first 2 months of therapy treat for 9 months total
(D) TB in CNS requires 9 to 12 months
(E) Adjuvant steroids required for CNS and pericardial TB

A 35-year-old HIV-positive patient presents with fever of 101° for the past 3 weeks. He also has noticed severe night sweats, anorexia, weight loss of 20 lbs, abdominal pain and diarrhea. He had been noncompliant with his HAART and repeat CD4 is 10 with a viral load of 500,000. On physical he looks cachectic. He had oral candida and diffuse scattered lymphadenopathy. He has a palpable non-tender liver. Heart and lungs are normal. Labs: CBC Hb 8.0; WBC 2.5; Platelets 50,000; CMP Alkaline phosphatase 430. A chest x-ray is normal.

What should be done next?
(A) Lymph node biopsy
(B) Bone marrow biopsy
(C) Blood cultures
(D) CT of abdomen
(E) Colonoscopy
What is the most likely diagnosis?

(A) Disseminated TB
(B) Mycobacterium avium disseminated infection
(C) Lymphoma
(D) Cryptosporidium
(E) CMV infection

Blood cultures reveal acid fast bacilli and bone marrow biopsy reveals numerous acid fast organisms on stain but no granulomas. Probe hybridization negative for TB. What should be done now?

(A) Await final cultures and sensitivities
(B) Start INH/Rifampin/PZA, Ethambutol
(C) Start Azithromycin/Rifabutin, Ethambutol
(D) Start INH, Rifabutin/PZA, Ethambutol
(E) Azithromycin, Rifabutin/Ethambutol and HAART

A 40-year-old HIV positive male presents to the hospital with severe dehydration, electrolyte abnormalities and progressive diarrhea. He has had the diarrhea for about 2 months and had a stool workup and placed on empiric oral quinolones without any effects. He denies blood in stool or abdominal cramps. He had no travel history and has a dog at home. He has been out of HIV care and was found to have a CD4 count of 60 and viral load of 250,000. On physical he is dehydrated but alert. He has no abdominal tenderness or megaly. His rectal exam is negative.
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What is the most likely diagnosis?
(A) Entameba histolytica
(B) Salmonella
(C) Shigella
(D) Cryptosporidiosis
(E) Giardia

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What test should be done now?
(A) Stool culture for ova, parasites
(B) Stool cultures Shigella, Salmonella, Campylobacter
(C) Serology for Entameba histolytica
(D) Colonoscopy and biopsy
(E) Small bowel biopsy

Stool revealed modified acid fast positive organisms. What is the final diagnosis?
(A) Mycobacterium tuberculosis
(B) Mycobacterium avium intracellular
(C) Cryptosporidium
(D) Entameba histolytica
(E) Isospora belli
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What therapy should be given?

(A) Bactrim DS
(B) Metronidazole
(C) HAART improve immunity
(D) Quinolone
(E) Nitazoxanide

A 30-year-old male presents with painful swallowing initially with solids and now with liquids. He occasionally has retrosternal discomfort as well as nausea. He was recently diagnosed with AIDS and found his CD4 count was 150 and viral load was 150,000. He has a history of HPV and oral HSV. On exam he has white lesions on his tongue as well as in posterior pharynx. Labs: CMI IgG positive; CBC, CMP normal.

What is the most likely diagnosis?

(A) Reflux esophagitis
(B) Candida stomatitis/esophagitis
(C) CMV esophagitis
(D) Herpes simplex esophagitis
(E) Esophageal cancer
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What would you do next?
(A) Trial of Diflucan
(B) Esophagoscopy
(C) Esophagram
(D) Tongue biopsy with culture, stain
(E) Trial of proton pump inhibitor

His mouth lesions respond to therapy but his esophageal symptoms persist and have worsened. What would you do now?
(A) Sensitivity testing of fungus
(B) Esophagoscopy with biopsy
(C) Esophagram
(D) CT of mediastinum
(E) Herpes serology

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A 34-year-old male presents with increasing problem with his speech. It was initially noticed 4 weeks ago but is much more noticeable. He also has noticed diplopia. His family states that he definitely has had a cognitive decline over the past 6 weeks. He is HIV positive but went on a holiday from medications 6 months ago. The recent CD4 was 200 and viral load 230,000. On exam he is alert to prior but not current events. He also has facial asymmetry when he talks and has several cranial nerve problems including CN IV, VI and VII. An MRI of the brain demonstrates increased T2 signal in the affected white matter but no edema or mass effect was seen and the area of involvement was mainly the occipital and frontal lobes.
What is the most likely diagnosis?
(A) Herpes encephalitis
(B) CMV ventriculitis
(C) HIV encephalopathy
(D) Progressive multifocal leukoencephalopathy
(E) Toxoplasma encephalitis

What test would be useful to verify the diagnosis on spinal fluid?
(A) CMV/PCR
(B) JC/PCR
(C) HSV/PCR
(D) Toxoplasma IgG
(E) HIV/PCR

What is the therapy for this?
(A) Acyclovir
(B) Ganciclovir
(C) Pyrimethamine/Sulfadiazine
(D) HAART therapy to get immune reconstitution
(E) Foscarnet
A 25-year-old male presents with skin lesions on his neck which occurred about 1 month ago. They are not painful and do not itch. They appear as vascular occlusive papular lesions. He was recently diagnosed with HIV with a CD4 count of 180 and viral load of 100,000. On exam he has no adenopathy. There are 4 small lesions on his neck as well as back that are vascular, bluish. It was also noted he had a similar lesion on his posterior pharynx.

What is the most likely diagnosis?
(A) Kaposi sarcoma
(B) Bacillary angiomatosis
(C) Squamous cell cancer of skin
(D) Melanoma
(E) Vasculitis

What agent has been associated with this condition?
(A) CMV
(B) Herpes simplex
(C) JC virus
(D) Human herpes virus 8
(E) Human herpes virus 6
What therapy would be most appropriate for him?
(A) Interferon therapy
(B) HAART immune reconstitution
(C) Chemotherapy
(D) Acyclovir therapy
(E) Radiation therapy

What organ is at risk for invasion in this patient?
(A) Liver
(B) Gastrointestinal system
(C) Renal
(D) CNS
(E) Adrenal glands