

## Initial Evaluation of Patient with New HIV Diagnosis

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### Educational Objectives

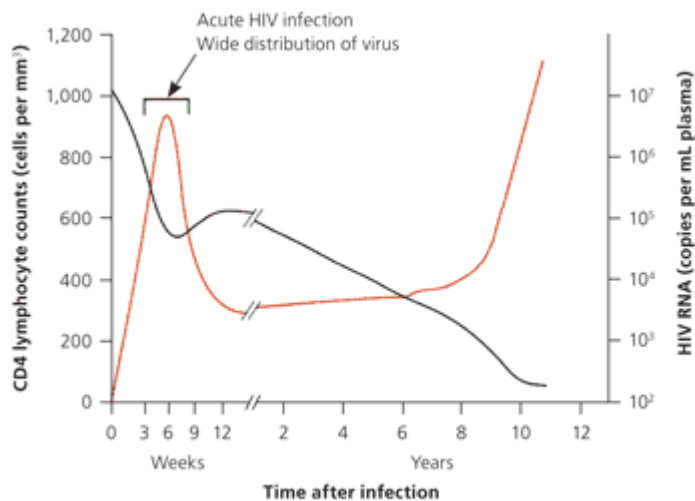
1. Prioritize the initial evaluation and management considerations for a patient with a new HIV diagnosis
2. Identify the relevant aspects of the medical history
3. Identify diagnostic and screening tests necessary in the initial evaluation
4. Identify any necessary opportunistic infection prophylaxis necessary based on patient's initial CD4+ cell count

### Case One

#### *Acute HIV*

SM is a 23 year old young man who presents to you complaining of fatigue and muscle aches for the last two weeks. Over the last few days, he has also noticed an erythematous, flat confluent rash on his chest and extremities. His vital signs are notable for a fever to 101°. On exam, you appreciate a single buccal mucocutaneous lesion, and some shotty cervical lymphadenopathy. The remainder of his exam is benign. His workup is notable for a positive HIV-1 4<sup>th</sup> generation test CD4 count is 645 cell and HIV viral load (VL) is 2.5 million copies.

What is the natural history of HIV infection?



What kinds of questions would you ask patient about how they are feeling regarding their diagnosis?

*Most importantly, patients should be asked evaluated regarding their psychosocial state and emotional supports. They should be questioned regarding an sexual or domestic violence that may be present both at home or in their immediate environment, and referred to counseling or support services if necessary. They should also be educated about their*

*infectiousness and risk reduction strategies should be discussed (consistent condom use, limiting substance use and alternative sexual practices that do not involve the exchange of bodily fluids).*

What is partner notification?

*Patients are confidentially asked to provide the names and locating information of their sexual partners. Their partners are in turn confidentially located by the state for screening and treatment without divulging the identity of the infected patient. What further sexual history would you like to ask SM?*

*It is important to ask whether the patient is sexually active with men, women or both, how many persons the patient has had oral, vaginal and anal intercourse with over the past several months with because this can help with providing risk-reduction counseling. Patients should also be counseled on using barrier protection as a means of reducing the risk of sexual transmission of HIV.*

What specific questions related to the patients past medical history are you interested in?

*Patients should specifically be asked about a history of: viral hepatitis, TB, diabetes, dyslipidemia, CAD, stroke, osteoporosis, peripheral neuropathy, GERD, chronic renal disease and any history of STIs. They should also be asked about any history of Varicella Zoster infection, a complete immunization history including Pneumococcus, hepatitis A and B, tetanus toxoid, reduced diphtheria toxoid and Tdap.*

Numerous medications interact with antiretroviral therapy, particularly those that are metabolized by the cytochrome p450 system. What specific medications are you interested in?

*Methadone, antidepressants (SSRIs, TCAs, antipsychotics, sedatives), HMG-CoA reductase inhibitors, antiseizure drugs, antiarrhythmic agents, corticosteroids, antimicrobials and proton pump inhibitors.*

## Case Two

***CV is a 26 yo healthy female who presents to see you for her annual physical. She is found to be HIV positive during routine STI screening testing. Her only risk factors are heterosexual contact. Her physical exam is unremarkable. What initial tests would you order for her?***

What is the initial laboratory work-up for initial HIV?

- HIV genotype if HIV RNA level > 1000 copies
- Complete blood count. Pay particularly close attention to any possible anemia, thrombocytopenia, and white blood cell count with differential. Zidovudine (ZDV/AZT, an NRTI) may be contraindicated with anemia.
- Metabolic panel-specifically for electrolytes, BUN and creatinine. Abnormal renal function may be a contraindication for tenofovir, an NRTI. It is also necessary to obtain baseline renal function as some ARTs may cause nephrotoxicity.
- Liver function tests. It is essential to obtain baseline LFTs as several ARTs cause hepatotoxicity and/or elevations in transaminases.
- Fasting glucose/A1c. Diabetes may be a contraindication for protease inhibitors.
- Fasting Lipid panel.
- Hepatitis B
  - Core antibody
  - Surface antibody
  - Surface antigen
- Hepatitis C IgG
- Hepatitis A IgG
- VDRL with reflex to TP-PA. A lumbar puncture should always be performed for patients with reactive syphilis serology with neurologic or ocular symptoms.
- Quantiferon Gold
- Toxoplasma IgG: all HIV infected patients should be tested for prior exposure to *T. gondii*, and if testing returns negative, they should be tested annually.

- Glucose-6-phosphate dehydrogenase level. Screening before starting any oxidant drug therapy specifically dapsone for PJP prophylaxis.
- HLA\*B5701. Should be performed before initiating abacavir therapy . Patients who are positive are at risk for hypersensitivity reactions and should not be started on abacavir.

Her Hepatitis B serologies return as follows: HBcAb positive, HBsAb positive, HBsAg negative. Based on the information you obtain from Hepatitis serologies, what can you surmise and what would you like to do?

*Based on serologies, Ms. CV was previously exposed to Hepatitis B and cleared the infection, thus she is now immune due to natural infection. She does not need to be immunized against Hepatitis B. HIV patients who are susceptible to HBV infection should be vaccinated against HBV and HBsAb should be repeated 1-2 months after the 3<sup>rd</sup> vaccine is given. HBsAb levels that are negative or <10 IU/mL after the primary vaccine series occur more commonly in the elderly and patients with concomitant renal dysfunction and should have a second vaccine series of either the same vaccine or switch vaccine manufacturers or receive the vaccine intradermally.*

CV's G6PD testing returns back showing that she has a deficiency in G6PD. Which drugs commonly used in HIV patients for treatment of various conditions will be unable to be used in Ms CV?

*Bactrim and other sulfonamides, dapsone and primaquine are examples of oxidant drugs frequently used in HIV infected patients.*

What basic initial considerations should be taken into consideration when choosing a treatment regimen?

*All patients, regardless of CD4 count, should be initiated on antiretroviral therapy to reduce the risk of disease progression and to prevent the risk of transmission of HIV. It is, however, important, that patients are willing to commit to treatment and understand the risks and benefits of therapy as well as the importance of adherence to therapy. In some cases, a patient and provider may choose to postpone therapy based on clinical and/or psychosocial factors. Basic considerations when choosing a treatment regimen include HIV genotype, HLA\*B5701, and hepatitis B status. Additional send-out genotype testing such as CCR5 tropism assay or integrase inhibitor assay testing should be considered in certain situations.*

Which immunizations would you recommend for this patient?

- *Pneumovax (PCV13) then Pneumovax (PPSV23) 8 weeks later and second PPSV23 dose 5 years later; If they have already had Pneumovax, then Pnevmar at least 1 year after the last Pneumovax dose.*
- *Influenza vaccine should be given annually to all patients.*
- *If patient has no serologic evidence of past or present hep B viral infection the Hep B vaccination series (Recombivax HB) should be given on a 3 dose schedule at 0, 1 and 6 months.*
- *If patient has no evidence of Hep A immunity (IgG negative), then Hep A vaccine must be given to MSM, IVDU and chronic liver disease patients. This is a 2 series vaccine given at 0 and 6 months.*
- *Tdap should be administered every 10 years*

*HPV recommended in young men and women ages 9-26 years and given at 0, 2 and 6 months*

### Case Three

#### AIDS

**Mr. LM is a 62 yo MSM who presents with fatigue. He also reports a dry cough, 3 months of unintentional weight loss and drenching night sweats. His physical exam is remarkable for decreased breath sounds in the R lung field. His CD4+ returns at 120 cells and HIV VL is 120,000 copies.**

What are the primary OI prophylaxes and at what CD4 counts would you initiate them?

*If CD4+ <200, start TMP-SMX, 1 DS tablet daily for Pneumocystis jiroveci prophylaxis.*

*If CD4+ <100 and patient is Toxoplasma gondii IgG positive, TMP-SMX is also indicated for toxoplasmosis prophylaxis.*

*If CD4+ <50, Mycobacterium avium complex prophylaxis with azithromycin 1200 mg once weekly.*

When should we start ART?

*ART should be initiated as soon as possible*

*Patient should be started on combination ART including 2 nucleoside reverse transcriptase inhibitors and a boosted protease inhibitor, integrase inhibitor, or a non-nucleoside reverse transcriptase inhibitor.*

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### **Primary References**

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**Guidelines for the Prevention and Treatment of Opportunistic Infections in HIV-Infected Adults and Adolescents** (Last updated: April 16, 2015; last reviewed: April 16, 2015)