

Clinical Education Initiative
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TITLE: DIAGNOSING ACUTE HIV INFECTION IN YOUR CLINICAL SETTING

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Diagnosing Acute HIV Infection in Your Clinical Setting **[video transcript]**

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Hello, I'm Dr. Antonio Urbina, Associate Professor of Medicine at the Icahn School of Medicine and a Medical Director at the Mt. Sinai's Institute for Advanced Medicine. Thank you for viewing the New York State's Clinical Education Initiative video on acute HIV infection. This video is based on information from the Centers for Disease Control and Prevention and the New York State Department of Health.

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Although individuals in the acute phase of HIV infection comprise less than 1% of persons living with HIV, up to 50% of all cases of HIV transmission are attributed to this group. High viral load and lack of knowledge of serostatus make the risk of transmission of HIV during acute infection significantly higher than during chronic infection.

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Detecting acute HIV infection plays a critical role in efforts to end the epidemic in New York State, as it represents an opportunity to find people in the early stages of HIV infection, link them to ongoing HIV care, and prevent the spread of HIV.

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In this video, we will start by defining acute HIV infection. Then, we will review the symptoms of acute HIV infection and the recommended algorithm for diagnosis. We will close with recommendations for managing acute HIV infection and offer a list of resources. Acute HIV infection, also sometimes referred to as primary HIV infection, is the period immediately after infection when the patient is highly viremic and has detectable p24 antigen and/or HIV RNA without yet having developed diagnostic HIV antibodies. In the past, diagnosing persons in the acute phase of HIV infection was difficult

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due to the limitation of HIV diagnostic tests. However, with the availability of fourth generation HIV antigen/antibody combination tests, HIV can now be detected as early as 14 days after infection, while persons are still in that acute phase.

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Now let's watch a brief example of how a patient might present with acute HIV infection.

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Malcolm is 23 years old and has come to see his primary care provider, Dr. Harris, because he has recently been experiencing fever, muscle aches, and a case of night sweats.

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- Hi, I'm Dr. Harris.

- Hi, Dr. Harris.

- Now, Malcolm, what brings you in today?

- I haven't been feeling well for the past few days. I had a fever, and night sweats. My body has been aching all over. It could probably be the flu, right?

- Maybe. Let me take a look at the nurse's notes.

- [Malcolm] Okay.

- So, you do have a high temperature, but the rest of your exam looks good. Have you traveled outside the US recently?

- No.

- [Dr Harris] Has anything else happened recently?

- Not that I can think of, except a little bit of stress from work, but, what's new?

- I know the feeling. Let me take another look.

- [Malcolm] Okay.

- I see we treated you for syphilis a year ago. Are you still sexually active?

- Yes, but only with a couple of guys.

- So do you and your partners use any protection against STDs?

- I usually use condoms, especially if I don't know the guy that well, but not every time. Like, 75% of the time.

- And when was the last time you had a HIV test?

- It was the summer, so 5 months ago, when I had the follow-up for my syphilis.

- And when was the last time you had condomless sex?

- A couple of weeks ago with this guy, but I'm not sure what that has to do with why I'm here today. Can't STDs cause this type of symptoms as well?

- Yes, it's possible. HIV has been known to cause symptoms like this, so I would like to order an HIV test, and that would involve taking a sample of blood, just so I can get a sense of what's going on. And we can also check for other STDs. How do you feel about that?

- HIV? Really? With the guy from a few weeks ago?

- I can't be sure, but it will just help me to rule some things out.

- Okay. We should do it.

- Now, it's gonna take a few days to get the test results back, so I wanna make sure we set up an appointment with you before you leave today.

- Alright.

- And it's also better not to have sex with anyone until you come back and we go over the results, even if you start feeling better.

- Okay.

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Patients acutely infected with HIV will often experience at least some symptoms, including fever, rash, nausea or diarrhea, joint or muscle pain, and other flu-like symptoms. Both patients and providers can mistake these symptoms as an ordinary cold, flu, or a non-specific viral illness, since they usually go away on their own. In the meantime, from HIV exposure to onset of symptoms is generally two to four weeks.

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Clinicians should include acute HIV infection in the differential diagnosis for anyone,

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regardless of reported risk, with a flu or mono-like illness, especially if the patient: presents with a rash, requests HIV testing, reports recent sexual or parenteral exposure to a person with or at risk for HIV infection, presents with a newly diagnosed sexually transmitted infection, presents with aseptic meningitis, is currently on pre- or post-exposure prophylaxis (PrEP or PEP), or is pregnant or breastfeeding.

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Identification of acute HIV infection during pregnancy is particularly important to ensure appropriate steps are taken to prevent mother to child transmission. Remember, the New York State HIV testing law requires that medical providers must offer an HIV test to all patients who are 13 years of age or older, if a previous test is not documented.

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Annual testing is recommended if there is elevated risk, such as sexual or drug use activity, or even more often for those with very high risk behaviors such as unprotected anal intercourse.

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If a patient comes in reporting any of the symptoms mentioned previously, a plasma HIV RNA assay should be ordered in conjunction with the laboratory HIV test.

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Following the CDC's and the New York State Department of Health's recommended laboratory HIV diagnostic testing algorithm,

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a fourth generation antigen/antibody combination immunoassay is recommended as the first step in the algorithm.

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If reactive, the lab will reflex to an HIV-1/HIV-2 antibody differentiation immunoassay to confirm HIV infection. It's important to note that Western blot is no longer recommended as the confirmatory test. If non-reactive, HIV RNA testing should still be ordered.

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Detection of HIV RNA with over 5,000 copies per milliliter should be considered a presumptive diagnosis of acute infection, even if the screening and antibody differentiation tests are non-reactive or indeterminate. If the HIV RNA assay yields a result of less than 5,000 copies per milliliter, in the absence of serologic evidence of HIV infection, HIV RNA testing should be repeated as soon as possible, to exclude the possibility of a false positive result.

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Providers should counsel patients about abstaining from risk behaviors, such as unprotected sex and injection drug use until results are known.

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Finally, if a diagnosis of HIV infection is made on the basis of HIV RNA testing alone, a new specimen should be collected three weeks later, and HIV diagnostic testing should be repeated according to the HIV diagnostic testing algorithm.

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This is the recommended protocol for determining the presence of acute HIV infection. Check to see what the HIV testing protocol is for your institution and how it compares with the algorithm.

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Patients are at greatest risk for transmitting HIV during periods of high viremia early in infection. Clinicians should counsel acutely infected patients

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about the increased risk of transmission during the six month period after infection. Partner notification, risk reduction counseling, and screening for other sexually transmitted or bloodborne infections are all important in the management of any new HIV diagnosis. Antiretroviral therapy, or ART, should be

recommended for all patients with a diagnosis of acute HIV infection. As part of the initial management of patients diagnosed with acute HIV infection, clinicians should consult with a provider experienced in the treatment of acute HIV infection, and obtain baseline HIV genotypic resistance testing, regardless of whether ART is being initiated.

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Let's revisit Malcolm and Dr. Harris. Malcolm HIV-1 and HIV-2

antigen/antibody combination immunoassay results were reactive, so the lab automatically reflexed to the second step in the algorithm, the antibody differentiation immunoassay, to confirm the result. This second step test result comes back non-reactive, so the lab protocol reflexed testing of the specimen to an HIV-1 viral load assay, which showed a result of more than half a million copies of HIV-1 in the sample. This suggests that the test was done while Malcolm was in the acute phase of infection and had not yet seroconverted. Identifying people earlier in the course of HIV infection is one of the benefits of using fourth generation technology.

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Dr. Harris has received Malcolm's lab results and is ready to share them with him.

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- Hi, Malcolm, how are you feeling today?

- Hi Dr. Harris, I'm actually feeling a lot better today. So did you find out what's wrong with me?

- Yes, we did get the results back from your blood test.

- [Malcolm] Okay.

- And they show that there is HIV in your blood. So you do have HIV. The symptoms you were experiencing is due to what we call acute HIV infection. It's the earliest stage when you first get infected with HIV.

- Oh. Wow. What does this mean? What do I do?

- I can imagine you're going through a full range of emotions right now and I want you to know that HIV treatment has come a long way and people living with HIV have full lives. Now I want to do some follow-up testing and I recommend that we start treatment as soon as possible. I can walk you through the entire process. How do you feel about that?

- It's a lot to take in. How does treatment work?

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Beyond the recommendations we have already highlighted, there are some additional treatments considerations for patients diagnosed with acute HIV infection. When acute HIV infection is diagnosed in a person receiving post-exposure prophylaxis, or PEP, it should be continued pending consultation with a provider experienced in HIV care. Adjustments can be made to the regimen once resistance results are

available. When acute HIV infection is diagnosed in a person receiving pre-exposure prophylaxis, or PrEP, additional HIV medications determined in consultation with an experienced HIV medical provider should be recommended, as the current PrEP regimen is not a fully active ART regimen. Finally, when acute HIV infection is diagnosed through HIV RNA testing in a person who is pregnant, clinicians should not wait for results of a confirmatory test to initiate ART. Initiation of ART is strongly recommended for pregnant women. Medical providers are capable of diagnosing and treating acute HIV infection. For clinicians requiring additional support, the New York State Department of Health recommends consulting with an experienced HIV medical provider in your area. The diagnosis of acute HIV infection requires a high degree of clinical awareness.

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There are many resources available to help you, including the New York State Department of Health AIDS Institute's HIV guidelines website and the CDC's website. You can also call our CEI line at 1-866-637-2342 to speak with a clinician experienced in managing acute HIV infection.

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Thank you for your interest in acute HIV infection. Detecting acute HIV infection plays a critical role in the Governor's plan to end AIDS in New York State by the year 2020.

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Identifying individuals in the acute stage of HIV infection not only helps to reduce the spread of HIV but ensures that people living with HIV receive proper treatment, achieve viral suppression, and have the opportunity to live full lives.

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For information on free training opportunities for medical providers regarding HIV testing, prevention and treatment, please visit ceitraining.org. [end]