

what is the role of acute HIV infection in HIV prevention?

what is acute infection?

Acute HIV infection refers to the first stage of infection, the time immediately after a person is infected and before an antibody response to the infection develops. The second stage of infection is seroconversion, when a person develops HIV-specific antibodies. During acute HIV infection, there are high levels of virus since the antibody response has not yet developed.^{1,2}

Determining acute HIV infection is critical for HIV prevention efforts. Conventional HIV tests do not detect acute infection, yet it is estimated that almost half of new HIV infections may occur when a person with acute infection unknowingly transmits HIV.³

There is no defined acute retroviral syndrome since there are many different symptoms associated with acute HIV infection. After an incubation period of 1 to 3 weeks, about 50% of persons with acute HIV infection develop headaches, sore throat, fever, muscle pain, anorexia, rash, and/or diarrhea.⁴ The symptoms are generally mild and may span anywhere from days to weeks.

It is easy to overlook or miss the signs of acute HIV infection. Half of persons who are acutely infected will never notice any symptoms. Also, the symptoms of acute retroviral syndrome are similar for other common illnesses such as infectious mononucleosis and influenza, which means acute HIV infection often goes undiagnosed.⁴

how is acute infection detected?

Acute infection cannot be detected by most routinely used HIV tests. Conventional HIV tests detect HIV-specific antibodies in blood or oral fluids that are produced by the immune system during seroconversion. Therefore, a person who was infected very recently will receive an HIV-negative result using conventional HIV tests.

Nucleic acid amplification testing (NAAT) can detect acute HIV infection by looking for the presence of the virus.⁵ Because NAAT is expensive to use for each individual specimen, many testing sites are combining HIV-negative blood specimens for testing. This NAAT pooling strategy makes screening for acute HIV infection feasible in settings with low disease incidence but high testing volume.⁶

Blood specimens with initial HIV-negative antibody results can be routinely screened using the pooled NAAT strategy to detect acute HIV infection. If a client has an HIV-negative antibody test but a positive NAAT result for the virus, it is important to have them come back to the clinic for follow-up counseling and repeat testing to confirm HIV infection.

how does it affect prevention?

The only way for persons to know that they are HIV+ and take precautions to prevent transmission is to be tested for HIV. However, with most routinely used HIV tests, it may take two months or more after initial infection to receive an HIV+ result. These two months are critical for HIV prevention: it is estimated that almost half of HIV transmissions occur when a person is in this acute HIV infection phase.¹ During acute infection, there are high levels of HIV virus in the body,^{2,3} and high viral load has been shown to be associated with increased risk of HIV transmission.⁷

If persons are at greatest infectivity during acute infection, it is likely that many persons are transmitting HIV unknowingly during this time. An acutely infected person who receives an HIV-negative antibody test result could be engaging in recommended HIV prevention practices, such as disclosing their status and only having sex or sharing injection equipment with HIV-negative persons, and yet still be transmitting HIV.

Persons with acute HIV infection may benefit from enhanced counseling focused on immediate risk reduction strategies and clarification about the conflicting test results. They should also be offered disclosure assistance and partner testing and counseling.⁸

Says who?

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can acute infection be treated?

Treating HIV during the acute infection stage may boost the immune system and slow the progression of HIV disease. One study followed HIV+ persons who started highly active antiretroviral treatment (HAART) in the acute infection stage. These persons had significantly better viral load and CD4 counts, compared to HIV+ persons who began HAART at a later stage.⁹

Guidelines for treating HIV infection usually recommend that HIV+ persons who are asymptomatic and have low viral loads and strong CD4 counts should wait to begin HAART.¹⁰ It is possible that initiating treatment during acute infection may be beneficial. However, starting HIV medications is a major decision: there are many side effects and toxicities and there are currently no long-term studies on the effectiveness of treatment for acute infection.¹¹

what's being done?

North Carolina has instituted the Screening and Tracing Active Transmission (STAT) program to identify and manage new HIV infections. As a part of STAT, all tests at publicly funded sites that return HIV-negative using standard testing are re-tested with NAAT. In 2003, NAAT detected an additional 23 cases of HIV infection, a 3.9% increase in the rate of HIV case identification. All 23 persons with acute infection were notified, 21 began HIV medical care, and 48 of their sexual partners received HIV testing, risk reduction counseling and referrals.⁶

In 2003, the San Francisco Department of Public Health began to screen for acute HIV infection among persons seeking HIV counseling and testing at the city STD clinic. In 2004, 11 cases of acute HIV infection were detected, reflecting an increase in HIV case detection of 8.8%. Program staff performed contact tracing and partner management for all persons newly diagnosed HIV+.^{8,12}

At a hospital Urgent Care Center in Boston, MA, all patients who had symptoms of a viral illness and who reported risk factors for HIV infection were tested for acute HIV infection. Most patients (68%) agreed to be tested for HIV even though they came to the hospital with unrelated concerns. Of 499 patients tested in 2000, 5 had acute HIV infection and 6 had chronic infection. Of the 5 patients with acute HIV infection, 4 returned for their test results, were seen by an HIV physician or nurse and began antiretroviral therapy.¹³

what needs to be done?

Acute HIV infection is hard to detect and often goes undiagnosed.¹⁴ Primary care physicians and healthcare workers at emergency rooms, urgent care and STD clinics need education and training on symptoms of acute HIV infection.¹⁵ Clinicians with patients who show signs of viral illness such as influenza or mononucleosis should conduct quick risk assessments for HIV risk and provide referrals to testing and counseling sites as needed.

More HIV testing and counseling sites need to test for acute infection, especially in high prevalence areas and high risk settings such as STD clinics. To accomplish this, resources for training, technical assistance and funding need to increase for agencies that provide acute HIV infection testing. State and federal reimbursement protocols, as well as public and private insurance, need to be changed to encourage the use of NAAT.

Identifying persons with acute HIV infection can be an effective HIV prevention strategy, as it focuses on persons at greatest risk for transmission. Persons with acute infection may need enhanced post-test counseling, including referrals to: medical care; social services such as substance abuse and mental health treatment when appropriate and prevention programs for HIV+ persons. Acute infection is also a crucial time for identifying sex and drug use partners and offering disclosure assistance services such as partner notification, counseling, testing and referrals.^{2,16}

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