Management of Human Immunodeficiency Virus in the Emergency Department

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KEYWORDS

• HIV • AIDS • Emergency medicine • Management • Emergency department

KEY POINTS

- In the United States, the highest proportion of new human immunodeficiency virus (HIV) infections occurs in injection drug users, men who have sex with men, sex workers, transgendered people, and prisoners.
- Diagnosis of acute HIV in the emergency department leads to improved health for the patient and decreased transmission within the community.
- The emergency department is the ideal location for universal HIV screening.
- Hepatotoxicity can occur as a side effect of every class of antiretroviral therapy.
- Emergency providers can provide postexposure prophylaxis for all types of HIV exposures.

Before the development of effective antiretroviral therapy (ART), the epidemiology of the human immunodeficiency virus (HIV) was characterized by high rates of new infections in young adults and children. Life expectancy was less than 2 years at acquired immunodeficiency syndrome (AIDS) diagnosis and there were few treatment options.[1] Presently, the worldwide availability of ART has created a different milieu. The global incidence of HIV has declined from 3.3 million in 2002 to 1.8 million in 2016.[2] The global mortality from AIDS peaked in 2005 at 2.3 million, declining to 1.1 million in 2016, with 36.7 million people living with HIV worldwide. These epidemiologic trends reflect an increasing prevalence, with declining incidence of disease. Global efforts toward eliminating mother-to-child transmissions, optimizing viremic control to prevent transmissions, offering postexposure prophylaxis (PEP), and initiating preexposure prophylaxis (PrEP) have all contributed to this decline in incidence. HIV-infected

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patients on ART are now primarily middle-aged and their life expectancy is approaching that of their uninfected counterparts.[1]

Advances in ART have created regimens that are less toxic and more effective with a lower pill burden, therefore improving adherence. Current first-line ART regimens typically consist of 2 nucleoside reverse transcriptase inhibitors (NRTIs) coupled with 1 non-NRTI (NNRTI), protease inhibitor (PI), or integrase strand transfer inhibitor.[3] Because opportunistic infections (OIs) are less frequent, more chronic complications related to prolonged ART use and HIV-associated inflammation have emerged. Chronic inflammation has been linked to an increased incidence of cardiovascular, liver, renal, oncologic, and neurobehavioral disorders among HIV-infected patients.[1,3]

Although progress has been made in the global HIV epidemic, specific populations have not benefited from these efforts. In areas of high HIV prevalence, young women are significantly affected by infection. For low-prevalence settings, including the United States, the highest proportion of new HIV infections is occurring in injection drug users, men who have sex with men (MSM), sex workers, transgendered people, and prisoners. Globally, MSM accounted for 12% of new HIV infections in 2015.[2]

ACUTE HUMAN IMMUNODEFICIENCY VIRUS

The clinical presentation of acute HIV infection is variable and nonspecific, mirroring other more benign viral illnesses such as influenza or Epstein-Barr virus. Fever, rash, retrobulbar headache, fatigue, sore throat, diarrhea, myalgias, and arthralgias are common. It can be challenging to distinguish these symptoms from other disease processes. Symptoms of acute HIV manifest 1 to 2 weeks after exposure and typically last for 2 weeks.[4,5] Although some patients remain asymptomatic, approximately 40% to 90% develop some symptomatology.[4] It often takes multiple health care visits until acute HIV is diagnosed because 83% of cases are missed on initial presentation to a health care provider.[5]

There are some distinctive features of this nonspecific presentation that may increase a provider's suspicion for acute HIV. The characteristic rash is described as an erythematous maculopapular eruption typically involving the face, upper thorax, limbs, palms, and soles.[5] In addition, patients with acute HIV can have sharply demarcated, shallow mucocutaneous ulcerations at sites of sexual contact, including the genitals, mouth, esophagus, or anus.[5] Other diagnoses to consider include herpes simplex virus (HSV), syphilis, and chancroid. Gastrointestinal (GI) symptoms such as nausea, vomiting, anorexia, and diarrhea are common due to infiltration of the GI lymphoreticular system within a few days of developing a detectable viral load.[6]

More severe clinical presentations of acute HIV are less common. It is estimated that 25% of patients with acute HIV present with aseptic meningitis. Cerebrospinal fluid (CSF) analysis demonstrates an elevated protein, normal glucose, and lymphocytic predominance. More than 50% of patients with acute HIV, especially those with higher viral loads, report 1 or more neurologic symptoms. These include problems with concentration or memory, gait disturbances, Parkinsonian movements, and neuropathies.[7] For most patients, neurologic findings are no longer present a month after initiation of ART.[7] Myocarditis, pancreatitis, hepatitis, encephalitis, and rhabdomyolysis without a clear cause have all been attributed to acute HIV as well. Rarely, patients may present with OIs during acute HIV. This has been documented for *Pneumocystis jiroveci*, histoplasmosis, cryptococcal meningitis, cytomegalovirus (CMV) infection, toxoplasmosis, and candidal esophagitis.[5]