

# Bloodstream Infections with Mycobacterium Tuberculosis in HIV-Infected Patients

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[Karen Hunter] Hello, I'm Karen Hunter. With me today is Kimberly McCarthy, a health scientist at the Centers for Disease Control and Prevention. We're talking about a paper that appears in the October 2010 issue of CDC's journal, Emerging Infectious Diseases. The article looks at bloodstream infections with Mycobacterium tuberculosis and other pathogens among outpatients with HIV infection in Southeast Asia. Welcome, Kimberly.

[Kimberly McCarthy] Hello, Karen. Thank you for having me.

[Karen Hunter] Let's start by talking about the pathogens that cause bloodstream infections and how they affect people with HIV.

[Kimberly McCarthy] Certainly. Some of the common pathogens causing bloodstream infections in HIV infected individuals include Mycobacterium species, Streptococcus species, and Non-Typhoidal Salmonella. In HIV positive individuals, if these bloodstream infections are left untreated, they may lead to severe illness, sepsis, and in some cases death.

[Karen Hunter] Tell us a little about your study.

[Kimberly McCarthy] Our study was conducted in three countries in Southeast Asia, including Cambodia, Thailand, and Vietnam. We worked in eight outpatient clinics that offered HIV testing, counseling, and treatment.

[Karen Hunter] Past studies have looked at bloodstream infections in people with HIV who were already hospitalized. Why did you choose to study outpatients?

[Kimberly McCarthy] Yes, previous studies have looked at hospitalized HIV patients and in those studies, the mortality rate in that patient population was really high. By screening patients during their initial encounters with the healthcare system, you're able to identify patients that have a bloodstream infection earlier, thereby improving their clinical outcome.

[Karen Hunter] And what did your study find?

[Kimberly McCarthy] Of the 2,009 patients that were enrolled in our study, 58, or 2.9 percent had a bloodstream infection. Of those found with a bloodstream infection, over 50 percent had Mycobacterium tuberculosis identified, followed by a Cryptococcus neoformans and Non-Typhoidal Salmonella.

[Karen Hunter] Why do you think Mycobacterium tuberculosis causes such a high proportion of bloodstream infections in people with HIV?

[Kimberly McCarthy] Globally, tuberculosis is the number one opportunistic infection of people that are infected with HIV and it's the leading cause of death in people with AIDS. While tuberculosis is generally a disease of the lungs, in people with a weakened immune system, such as those with HIV, we see disseminated disease in the spread of tuberculosis to other parts of the body; for example, blood.

[Karen Hunter] What was the relationship between bloodstream infections and antiretroviral therapy medications in this study?

[Kimberly McCarthy] Of the 2,009 patients enrolled in our study, none of the 119 patients that had received antiretroviral therapy, or ART, for a minimum of 14 days had a bloodstream infection, compared with 2.9 percent of the remaining 1,801 patients that were not on antiretroviral therapy or had been taking it for less than 14 days. So it definitely was the single most protective characteristic in that patient population.

[Karen Hunter] What should HIV patients and their doctors do to prevent bloodstream infections and what symptoms should they watch out for?

[Kimberly McCarthy] More than likely, increasing the use of antiretroviral therapy, or ART, would have the highest impact and the greatest impact on reducing the burden of bloodstream infections in this patient population. HIV outpatients presenting to an outpatient clinic that report either fever, abdominal symptoms, have abnormalities observed on chest radiography, they have a high likelihood of having a bloodstream infection; particularly if they are in the later stages of HIV infection. In this particular patient population and where available, if blood samples could be collected and forwarded to a laboratory so that we can facilitate the diagnosis and accelerate access to treatment, that would be ideal.

[Karen Hunter] Thanks so much for joining us today, Kimberly. I've been talking with CDC's Kimberly McCarthy about a paper that appears in the October 2010 issue of CDC's journal, Emerging Infectious Diseases. You can see both articles online at [www.cdc.gov/eid](http://www.cdc.gov/eid). If you'd like to comment on this podcast, send an email to [eeditor@cdc.gov](mailto:eeditor@cdc.gov). I'm Karen Hunter, for Emerging Infectious Diseases.

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