Syphilis cases on the rise among HIV-positive people in Calgary

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- Calgary doctors noticed a three-fold increase in syphilis among patients with HIV
- Syphilis was more common among people with HIV not taking treatment
- More than half of cases had no symptoms, highlighting the need for screening

Syphilis cases decreased in the 1990s but began to increase in Canada and other high-income countries around the year 2000. This increase has disproportionally affected gay, bisexual and other men who have sex with men (MSM), including those who are HIV positive.

The sexually transmitted infection (STI) syphilis is a complex multi-stage disease caused by germs called treponemes. Among MSM, syphilis can be spread through deep wet kissing and condomless sex. The initial stages of syphilis can be symptom free, yet during this time treponemes spread throughout the body and injure vital organs, including the heart and blood vessels, the kidneys, liver, brain and nerves. Syphilis also causes inflammation and lesions inside the delicate mucous membranes of the ano-genital tract. This increases the risk for the spread of HIV and syphilis. If left untreated, syphilis can cause serious complications. Among HIV-positive people, syphilis can increase the viral load in the blood and can decrease CD4+ cell counts. It is therefore important for all sexually active people to have regular blood tests for syphilis. If diagnosed in the early stages, syphilis treatment with antibiotics is straightforward.

Since 2006, doctors at the Southern Alberta HIV Clinic (SAC) and the Calgary STI program (CSTI) have been testing the blood samples of HIV-positive people on a regular basis for their HIV viral load and for syphilis. Between January 1, 2006 and December 31, 2016, researchers tested the blood samples of about 2,500 participants. Key findings included the following:

- cases of syphilis increased three-fold between 2011 and 2016
- more than 50% of syphilis cases were symptom free
- HIV-positive people diagnosed with syphilis were two-fold less likely to be taking HIV treatment (ART) compared to HIV-positive people without syphilis
- HIV-positive people with syphilis were likely to have a detectable viral load

The Calgary study underscores the need for regular, perhaps even frequent, screening for syphilis among sexually active HIV-positive people.

Study details

Researchers at the SAC and CSTI reviewed data collected from participants. This data collection was extracted from the following sources:

- databases
- interviews with participants
- reports from social workers
- medical records

During the study, more than 20,000 syphilis tests were done with blood samples from about 2,500 participants. On average, each patient had two syphilis tests per year.
Results

Researchers identified 249 cases of syphilis in 194 people. Key findings were as follows:

- More than half (50%) of new cases of syphilis were symptom free and were therefore only identified because of blood tests.
- Overall, nearly 30% of cases of syphilis occurred in people who, according to the researchers, “had previously been successfully treated for syphilis on one or more occasions.”
- In 2011, 25% of syphilis cases were due to repeated infection. In 2016, 44% of all syphilis cases were due to repeated infections.

According to the researchers, new cases of syphilis occurred primarily in the following populations:

- men – 94%
- HIV-positive MSM – 75%
- white people – 72%

Furthermore, researchers found that HIV-positive people with syphilis (compared to HIV-positive people without syphilis) were more likely to have the following behaviours:

- a history of excessive intake of alcohol
- a history of recreational substance use

Disclosure

Participants were interviewed by nurses. Researchers found that at the visit prior to the diagnosis of syphilis, when laboratory screening would be requested, about 60% of participants would disclose that they were sexually active. After a positive syphilis screening result at the next clinic visit, about 71% of participants would disclose that they were sexually active.

Nurses provided counselling to participants about safer sex either before or after syphilis screening.

HIV, ART and syphilis

At the time syphilis was diagnosed, nearly 20% of participants were not taking ART. Researchers said that people who were not taking ART and who were diagnosed with syphilis were more likely to inject street drugs compared to HIV-positive people who were taking ART.

At the time syphilis was diagnosed, nearly one-third of participants had a detectable viral load, ranging from 49 to 2.3 million copies/mL. The lower limit of quantification of viral load tests used in this region is 40 copies/mL. Overall, 19% of participants who were diagnosed with syphilis had a viral load greater than 1,000 copies/mL and 4% had a viral load greater than 100,000 copies/mL.

Among participants with syphilis and a detectable viral load, 52% were not taking ART.

Repeat episodes of syphilis

According to the researchers, more than one-quarter (28%) of syphilis cases occurred among participants who had been “successfully treated for a past episode.”

Bear in mind

The findings from Calgary underscore the importance of syphilis screening in the current era, as more than half of the cases were uncovered by blood tests in symptom-free people.

The researchers encouraged doctors to regularly screen their HIV-positive patients, particularly MSM, for syphilis. They said that by focusing on people at “high risk for syphilis, screening programs can be cost effective.” Such a strategy may be necessary in an era of austerity.

More than one-quarter of syphilis diagnoses were in people with repeated infection. The proportion of people with
repeated diagnoses of syphilis is rising significantly.

**Prevention**

Given the significant increase in syphilis, including repeated bouts of this condition, the researchers wondered about the deployment of the antibiotic doxycycline to reduce the risk of sexually active patients getting syphilis. They drew attention to a pilot study in Los Angeles among HIV-negative MSM in which daily use of doxycycline reduced the risk for participants getting a cluster of the following infections:

- syphilis
- chlamydia
- gonorrhea

However, a larger randomized study in 232 HIV-negative MSM found that doxycycline reduced the risk for getting syphilis and chlamydia but not gonorrhea. Such a strategy of prophylactic doxycycline is not currently recommended for routine use in HIV-positive men by STI guidelines in Canada or the U.S. However, the Calgary researchers did state that doxycycline prophylaxis “may be an avenue for the primary prevention of syphilis in HIV-positive individuals in regular care and characterized to be at high risk for syphilis.”

**Resources**

- Canadian Guidelines on Sexually Transmitted Infections
- Guide québécois de dépistage des infections transmissibles sexuellement et par le sang
- More cases of ocular syphilis reported in the United States - CATIE News
- American doctors focus on cases of ocular syphilis - CATIE News
- Syphilis - CATIE fact sheet

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**REFERENCES:**


Disclaimer

Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about HIV- and hepatitis C-related illness and the treatments in question.

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