Hepatitis caused by syphilis

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The liver has many enzymes, some of which appear in the blood and can be measured. When the level of these enzymes is high, this suggests that liver inflammation and injury is occurring. Commonly assessed liver enzymes include the following:

- AST – aspartate aminotransferase
- ALT – alanine aminotransferase
- AP – alkaline phosphatase
- GGT – gamma-glutamyl transpeptidase

Elevation of liver enzymes can sometimes occur because of alcohol use, toxic substances and infections. Viruses that infect liver cells, such as hepatitis A, B and C, are common causes of elevated liver enzymes in people. However, other infections can also cause this.

A research team in Birmingham, UK, found abnormal levels of liver enzymes in the blood of some HIV-positive patients. In a significant proportion, about 20%, this was likely due to the germs (called treponemes or spirochetes) that cause syphilis attacking the liver. The team encourages doctors caring for HIV-positive patients to suspect syphilis when lab test results show elevated liver enzymes.

Study details

Doctors at University Hospital Birmingham analysed blood samples collected between January 2005 and September 2008. In the department of Genitourinary Medicine, where the team was based, the blood of HIV-positive patients is routinely checked for syphilis every three months.

The research team defined syphilitic hepatitis as such:

“An elevation of liver enzyme levels of 1.25-fold above the upper limit of normal in the 90 days prior to a diagnosis of syphilis, so long as there were no other causes of hepatitis. Furthermore, people with hepatitis related to syphilis must have had their condition improve when treated for syphilis.”

People who had recent infection with hepatitis-causing viruses and others infected with the parasite *T. gondii*, which can cause toxoplasmosis (and liver injury), were excluded from analysis. Also excluded were people who had a history of drinking excessive amounts of alcohol or who had prior episodes of liver injury caused by drugs.

Results

Sixty-two HIV-positive people were diagnosed with early-stage syphilis during the study (61 men, one woman). Twelve (19.3%) participants (all male) had a pattern of liver enzyme elevation suggestive of syphilitic hepatitis. All 12 had a CD4+ count of 300 cells or more.

Nine of the 12 people had a rash on part or all of their body.

Other symptoms present included the following:

- hair loss
Three of the 12 men had no symptoms.

The research team did not perform a liver biopsy (removal of a small sample of the liver) for further investigation. Due to this, its findings cannot be definitive. However, in all cases after treatment for syphilis, elevated liver enzyme levels returned to normal, usually within about four months after treatment. Levels of antibodies (measured by the VDRL test) that are associated with syphilis fell at least four-fold after treatment.

Most participants (80%) received a robust regimen consisting of benzathine penicillin 2.4 million units injected into muscle once weekly for three consecutive weeks. The remaining participants received oral doxycycline 100 mg twice daily for two consecutive weeks.

No participant reported any serious side effects.

**Syphilis: more than just a cause of sores**

Syphilis can cause a painless sore inside or on the genitals or on other affected areas such as the mouth. If a painless sore occurs inside the body, its presence may not be noticed. Such sores help spread both syphilis and HIV. The germs that cause syphilis can quickly spread throughout the lymphatic system and blood, reaching new targets such as the brain, heart, kidneys and other organs. These vital organs can become severely damaged by treponemes. Therefore, sexually active people, particularly men who have sex with men (MSM), require frequent laboratory testing to keep track of possible infection by treponemes. Although oral sex is considered low risk for HIV infection, syphilis can easily be spread through oral sex and other means, including the following:

- wet kissing
- unprotected anal, oral or vaginal sexual contact
- sharing equipment for injecting, smoking or snorting drugs
- pregnancy or birth from an infected mother to her child

Given the widespread and ongoing outbreaks of syphilis among sexually active people, particularly MSM, it is not surprising that about 20% of the HIV-positive men in this study very likely had syphilitic hepatitis.

Doctors in the U.S. have also reported syphilitic hepatitis in HIV-positive men.

**Treatment**

The UK doctors stated that their antibiotic of choice for treating syphilitic hepatitis is benzathine penicillin injected into muscle (usually in the buttocks). This probably is because the mainstay of syphilis treatment since the late 1940s has been penicillin and its analogues. These drugs remain very effective but *specific* formulations of penicillin are recommended for the treatment of different stages of syphilis by public health authorities. Benzathine penicillin (Bicillin L-A) kills treponemes, though a long period of exposure to this antibiotic is needed for this to occur. This is why benzathine penicillin is injected into muscle where it is slowly released into the blood. It is also why sometimes repeated doses of benzathine penicillin are used for later stages of syphilis.

Doxycycline can also kill treponemes in early syphilis but has not been tested in later stages of syphilis.

The UK team encourages other doctors to consider syphilis when evaluating HIV-positive patients for liver dysfunction and injury.

**Resources:**

- [Canadian Guidelines on Sexually Transmitted Infections](#) (Public Health Agency of Canada)
- [Guides for the Pharmacological Treatment of STBBIs](#) (Institut national d'excellence en santé et en services...
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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