Introduction to Infectious Disease: Syphilis

MASTER AUDIO TRANSCRIPT

Introduction

Syphilis has been called “The Great Imitator”, as its symptoms can appear like many other infections and diseases. Syphilis typically follows a progression of the following stages: primary, secondary, early non-primary non-secondary, and unknown duration or late syphilis. These stages can last for weeks, months, and some many years. Likewise, there are different signs, symptoms and modes of transmission associated with each stage. Additionally, when left untreated, syphilis can cause the following clinical manifestations: neurologic, ocular, or otic, which can occur at any stage of syphilis, as well as late clinical manifestations (tertiary syphilis), which typically occur after 15–30 years of untreated infection.

- Of primary and secondary syphilis cases diagnosed in men who have sex with men (MSM), approximately one-half of the men are coinfected with HIV.
- Despite fluctuations, the number of reported cases of congenital syphilis have been consistently rising in recent years, consistent with the increasing rates of reported primary and secondary infection in women.

Disease Stages

Primary:

Primary syphilis is the most transmittable stage of the infection. This stage is most often characterized by an elevated lesion on the skin that might resemble something like a pimple. While a person usually only develops a single lesion, it is not uncommon for more to erupt. The lesion will begin to change in an erosive manner, becoming a chancre, or what many refer to as a “sore”. The chancre develops at the site of introduction, typically 10-90 days (21 day average) after exposure to an infected partner. Studies have shown that when the chancre has been present for a longer duration there is an increased likelihood that the antibody (serologic) test findings will be reactive (positive). The chancre will typically last 1-5 weeks and heals without treatment. Chancres are round, indurated (hardened), and painless yet, sometimes a chancre will also be open and wet; chancres can vary in size. Atypical chancres may sometimes occur and can mimic herpes. The chancre can be found in or near the penis, vagina, anus, lips, or mouth. Oftentimes they manifest under the foreskin of the penis, inside the vagina or anus, or other places internally that are difficult to see. As a consequence, many people that become infected with syphilis are unaware of their infection because the chancre goes unnoticed, being both painless and potentially hidden from sight. When the chancre is visibly identified, the person may confuse it with an infected hair follicle or something similar.

Secondary:

Secondary syphilis is characterized by skin and mucous membrane lesions, and consequently, the diagnosis of secondary syphilis is largely based upon the presence of these symptoms, unlike the primary lesions which often go unnoticed. Occasionally, secondary syphilis lesions occur while the chancre of the primary stage is still present, however usually there is a period of several weeks between the disappearance of the primary chancre and the onset of the skin lesions within this secondary stage of syphilis. The skin lesions associated with secondary syphilis last 2 to 6 weeks (4 week average) and, like the chancre in primary syphilis, will visibly clear without treatment. The lesions in this stage are typically bilaterally symmetrical and are most often found on the torso, palms of the hands (Palmer) or the bottoms of the feet (Planter); these occur in 75-100% of reported cases. It is not uncommon for the Palmer-Planters rash and other secondary symptoms, to come and go for several years if the person remains infected/untreated. Other common symptoms within the secondary stage of syphilis include unexplained fatigue, swollen lymph glands, headache, mild flu-type symptoms, such as fever and body aches and/or hair loss (alopecia). In rare cases, illnesses such as hepatitis and kidney disease can occur, making an initial diagnosis even more challenging. All symptoms of secondary syphilis can overlap with the presence of the chancre specific to primary syphilis. Like the Palmer-Planters rash, the other symptoms of secondary syphilis will also clear, with or without treatment.

Clinical Manifestations

Ocular Manifestations (Ocular Syphilis):

It's significant to note that while it is possible for a person's symptoms to significantly improve after being successfully treated for syphilis, the outcome depends on the nature of the ocular manifestation and the timing of treatment initiation. For instance, if ocular scarring is present it is unlikely to significantly change following treatment.

Late Clinical Manifestations (Tertiary Syphilis):

Late clinical manifestations of syphilis, also referred to as tertiary syphilis, are not as common in the U.S. because of the widespread availability and use of antibiotics. Between the different stages of syphilis, infected persons may not experience – or notice – any symptoms for months to years. However, during this time, syphilis is still causing damage to the body.

Screening and Testing

Use of only one type of serologic test is insufficient for diagnosis since each test used alone has major limitations, including false-positive tests in persons without syphilis and the inability for

treponemal tests to distinguish between recent and distant infection. Both types of tests have several advantages and disadvantages as well as differing test characteristics.

Nontreponemal Antibody Tests:

These antibodies are produced by the body when an individual has syphilis but may also be produced in several other conditions. Because these tests are non-specific, false-positive test results can be caused by, for example, IV drug use, pregnancy, Lyme disease, certain types of pneumonia, malaria, tuberculosis, or certain autoimmune disorders, including lupus. A positive screening result must be confirmed with a more specific antibody test, namely a treponemal test.

Treponemal Antibody Tests:

Because these tests are highly specific other conditions are unlikely to cause a positive result. However, once a person is infected and these antibodies develop, they remain in the blood for life. By comparison, nontreponemal antibodies typically disappear in an adequately treated person after about 3 years. Therefore, a positive treponemal screening result must be followed by a nontreponemal test (such as RPR) to differentiate between an active infection (and reinfection) and one that occurred in the past and was successfully treated.

Recommendations:

The US Preventative Services Task Force (USPSTF), tasked with identifying and providing evidenced-based recommendations to the US Congress related to clinical preventive services, determined that an appropriate algorithm of screening tests can accurately diagnose asymptomatic, nonpregnant adults and adolescents who are at increased risk for syphilis infection. Likewise, it was determined that screening tests can accurately diagnose pregnant women for syphilis infection. As a result, the USPSTF final screening recommendation grade for both nonpregnant adults and adolescents who are at increased risk AND FOR ALL pregnant women is an ‘A’, which simply indicates that the USPSTF recommends that clinicians offer or provide this service to patients because it has been determined that there is high certainty that the net benefit is substantial in terms of improvement of health outcomes.

The USPSTF lists four other "risk factors" associated with increased syphilis prevalence rates:

- history of incarceration;
- history of exchanging sex for money;
- certain racial/ethnic groups, and;
- being a male younger than 29 years of age.

Routine screening is recommended for several other specific populations, including persons taking preexposure prophylaxis (PReP) for HIV prevention, and persons who have a sexual partner diagnosed with syphilis.

Prevention

The most reliable way to prevent syphilis is to abstain from vaginal, anal, and oral sex or to be in a long-term, mutually monogamous relationship with a partner known to be uninfected. However, if abstinence is not a realistic option for a person, the consistent and correct use of appropriate condoms can be highly effective as a preventative method against acquiring syphilis infection. With syphilis it is imperative to note that a primary or secondary syphilis chancre, mucous patch or condylomata lata outside of the area covered by a latex condom can still allow transmission, so extreme caution should be exercised by persons even when using a condom. Additionally, retesting persons previously infected after treatment is an expedient and efficient method for detecting reinfection. All persons that test positive for syphilis should be retested according to the specific CDC guidelines based upon the stage of infection.

When a person becomes infected with syphilis, they can help protect themselves and their partner by talking openly about the infection and waiting to have sex again until the treatment is complete. All sex partners should also be tested for syphilis and, if necessary, treated before having sex again. When starting to have sex again, all persons should use a condom consistently and correctly every time, remembering that it is possible to get re-infected if one of the partners has not been treated and cured.

Treatment

Repeat infection with syphilis among both men and women is common. Anyone whose sex partners have not been appropriately treated are at high risk for re-infection. Persons with syphilis should abstain from sexual activity throughout the duration of their treatment, to prevent spreading the infection to partners.