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Syphilis in Men that have Sex with Men

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Introduction

Syphilis rates in the United States hit a nadir in the 1940s, but since this decline a widespread trend of reemergence has been observed. Various factors such as sex behavior and geography have all contributed to this phenomenon. The current epidemiological climate of syphilis is “that no country has yet been able to completely eliminate or control this disease” (Read et al, 2015). The current reemergence following a dramatic fall was a direct consequence of the introduction of penicillin in the 1940s, but since this decline a widespread trend of reemergence has been observed. Various factors such as sex behavior and geography have all contributed to this phenomenon. The current epidemiological climate of syphilis is “that no country has yet been able to completely eliminate or control this disease” (Read et al, 2015).

Syphilis is a chronic, systemic, infectious disease caused by sexual or vertical transmission of the bacterium Treponema pallidum. Early stages of the disease often remain asymptomatic or produce only mild symptoms. The classic syphilis triad of early syphilis includes chancre at the site of initial entry, condyloma lata, and benign mucous patches. The chancre can be found in places that vary in shape from round to irregular. Primary syphilis is an anemic bacterium comprised of helically coiled cells and falls within the order spirochetes. The tightly coiled cells cause the bacteria to have a telephone cord or corkscrew shape with distinct axial filaments (flagella) that differ from most other bacterial flagella and contribute to their shape (CDC, 2016). When observing the signs and symptoms of syphilis it is best to also understand the various stages of the infection

Significance of Pathophysiology

Understanding what minimal information we know about the pathophysiology regarding syphilis is important in the recognition, diagnosis and treatment of this infection. Having a strong breadth of knowledge will allow the practitioner to acutely recognize the need for further testing and investigation. Appropriate health history should initiate syphilis, especially in regard to sexual health history. Syphilis is primarily sexually transmitted and certain sexual behaviors play a significant role in the transmission of the disease. Understanding the pathophysiology and epidemiology of syphilis is necessary in order to prevent and control the transmission and progression of the disease. It is important to understand the pathophysiology of syphilis to appropriate treatment and prevent further infections within the public and most importantly, high risk populations.

Underlying Pathophysiology

Treponema pallidum is an elusiveness bacteria that due to its inability to grow in culture, little pathophysiology is truly understood. Growth characteristics and metabolism of the bacteria are some of the important material parts not fully understood. Initial stages of infection occur after T pallidum has gained access to subcutaneous tissues via compromised epithelial tissue most commonly the rectum, vagina, penis and the oral cavity (Clement et al, 2016). The spirochete is slow to divide but is still able to evade initial host immune response and establish the initial chancre. During this stage some organisms have been found to local infection within regional draining lymph nodes and subsequently disseminated (Shillah et al, 2017). Within the blood and skin, innate and adaptive cellular immune responses can be seen (Shillah et al, 2017). Within the chancres leukocytes can be found and are eventually replaced by T lymphocytes which is the normal host immune response. Upon acquisition, T pallidum generates a humoral immune response where multiple antibodies can be detected early in the infection (Cantar et al, 2016). The firm inflammation response to the primary chancre can develop as a result of the primary chancre all the while diffuse distribution of spirochetes leading to advanced disease i.e. tertiary and secondary (Cantar et al, 2016).

Table 1: Infection distribution by sex and sexual behavior (CDC, 2017).

Sign & Symptoms

Syphilis began as a rash. The rash can develop while the primary chancre is still visible. The most common rash develops on either the palms of the hands or soles of the feet. This rash can extend to the entirety of the body (diffuse) and is a not commonly noticed (Cantar et al, 2016). The rash is rough and red to reddish-brown, circular spots that can be distinct or discreet. In addition to the rash, large raised gray to white lesions called condyloma lata can develop in the moist mucosal surfaces of the body. Symptoms can be vague, and include: lymphadenopathy, alopecia, sore throat, weight loss, fatigue and weakness (Wagenlehner et al, 2016). Latent syphilis is a period of time where there are no signs or symptoms. Either early latent (occurring within 12 months) or late latent (occurring after 12 months) Tertiary and Neurosyphilis are late stages of the disease when neurological, cardiovascular and gummatous disease processes are present. Neurosyphilis is when the spirochete enters the cerebrospinal fluid and causes neurological symptoms, meningitis, light headedness, vision and balance deficits (Wagenlehner et al, 2016). Tertiary syphilis can cause dilation of the ascending aorta and aortic valve regurgitation. These changes increase the risk for carotid and can also develop anywhere externally or internally. Gummata are beaped granulomatous lesions that vary in shape from round to irregular.

Nursing Implications

The advance practice nurse must develop a strong foundational health assessment to best serve the diverse presentation of syphilis. In high risk patient populations, such as men that have sex with men (MSM) it is essential to collect a thorough health history with emphasis on sexual practices. Sexual health histories can present certain cultural boundaries that the provider must traverse in order to collect a accurate report (Shilahman et al, 2015). Physical assessment of individuals may not yield a clear answer to how the provider must know how to best proceed when suspicion remains. Laboratory testing can be done for either non-terpenational or treponemal but more than one type of laboratory test must be definitively diagnosed since serologic testing can be associated with false positives (CDC, 2017). Darkfield microscopy can also be performed if a chancre is present for sampling and if the technology is readily available. The most powerful skill to possess in the care of a syphilis patient is prevention. Syphilis is preventable and can be avoided so with regular testing and open sexual health dialogue. Education through the care of the patient can build rapport and allow the patient to open up to the provider in regards to their sexual health.

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Conclusion

The current epidemiological climate of syphilis is “that no country has yet been able to completely eliminate or control this disease” (Read et al, 2015). The current reemergence following a dramatic fall was a direct consequence of the introduction of penicillin in the 1940s. The current reemergence following a dramatic fall was a direct consequence of the introduction of penicillin in the 1940s. It is important to understand the pathophysiology of syphilis to appropriate treatment and prevent further infections within the public and most importantly, high risk populations.

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