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HIV & Hepatitis Education Prison Project

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INFECTIOUS DISEASES IN CORRECTIONS

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MANAGING SEXUALLY TRANSMITTED DISEASES IN JAILS

By Karl Brown, M.D.*, Infectious Diseases Supervisor, Rikers Island Jail, New York City, NY

Correctional environments are increasingly being recognized as settings in which society's infectious diseases are concentrated.[1] Most studies on infectious disease in correctional facilities address prisons, but infectious diseases are even more prevalent in jails. In particular, sexually transmitted diseases (STDs) may be more common in jail settings than in prisons, as inmates who are sentenced and sent to prison will typically have been in jail long enough to have been diagnosed and treated for some STDs.

STDs are not routinely addressed in jails, but should be.

Although there have been some notable successes in identifying these diseases, rapid turnover and frequent movement of inmates makes jails difficult settings in which to quantify the prevalence of various diseases. There is also a tendency to deal only with urgent medical conditions in jails, with mental illness, drug withdrawal, and tuberculosis commanding the most attention. As a result, other chronic illnesses and STDs may not be addressed routinely in the jail setting.

This discussion will focus on the epidemiology, diagnosis and treatment of four of the most common STDs found in the jail setting: syphilis, gonorrhea, chlamydia, and genital herpes. The connection between genital-ulcerative STDs and the acquisition and transmission of HIV will also be discussed. The viral hepatitides, which may be sexually transmitted, will not be included in this discussion.

EPIDEMIOLOGY

Syphilis

Health officials in the U.S. were alarmed to find that after declining for many years, syphilis rates began to increase in early 2000.[2] The 2001 rate was 2.2 cases per 100,000, up from the rate of 2.1 cases per 100,000 in 2000.[3] (See Table 1.) There is a large geographical variation in the rates of primary and secondary syphilis, with the highest rates reported in the South. The reported rates of syphilis are higher in correctional environments than in the non-incarcerated population. In 1990, an outbreak of syphilis in New York City led to intake syphilis screening and control initiatives in NYC jails. In one jail, syphilis was found in 3.3% of new inmates who were screened.[4]

Much of the recent increase in syphilis rates seen in the general population has been among men who have sex with men (MSM), although higher rates are also reported for women (compared to men) and African-Americans (compared to non-African Americans).[2]

Gonorrhea and Chlamydia

After decreasing for several years, the rates of gonorrhea and chlamydia in the U.S. have increased sharply.[5] In addition to a 9% increase in the number of cases from 1997-1999, recent studies have reported a change in antibiotic susceptibility for gonorrhea, with susceptibility to azithromycin and fluoroquinolones decreasing in Hawaii and California in 2001.[6,7]

The overall reported rates of gonorrhea and chlamydia in the U.S. in 2000 were 131.6/100,000 and 257.5/100,000, respectively. There is a high prevalence of Neisseria gonorrhea and Chlamydia trachomatis in jails and juvenile detention centers, especially among women, as documented in a screening of women entering facilities in Chicago, IL, Birmingham, AL, and San Francisco, CA. The rates ranged from five to nine percent for gonorrhea, and twice that for chlamydia, with a range of 11% to 17%. One to two percent of women in this sample were found to be infected with both diseases.[8]

The reported rates of gonorrhea and chlamydia in women are dependent upon how aggressively screening is performed. Many women with these infections are asymptomatic, and small amounts of vaginal discharge may go unnoticed. Left

Continued on page 2

WHAT'S INSIDE

Managing STDs...

(continued from page 1)

untreated, infection can lead to pelvic inflammatory disease, salpingoophoritis, tubo-ovarian pregnancy and sterility. The greatest risk for acquiring gonorrhea and chlamydia is in younger, sexually active women, as their less mature cervices have been found to be more vulnerable to infection.

Men with gonorrhea tend to present with symptoms of pain, dysuria, tenesmus, and anal and/or penile discharge, with signs and symptoms dependent upon the site of infection. Chlamydia infection may present with scant urethral discharge or florid symptoms. The rate of asymptomatic disease is unknown for both of these infections.[9]

Because most facilities do not perform intake screening for gonorrhea or chlamydia on asymptomatic men, the prevalence of disease is difficult to estimate.[10] In the year 2000, most facilities reporting chlamydia in males were juvenile prisons. Their rates ranged from 0.8% in Oregon to 13% in Texas. Rates from the few jail facilities that reported ranged from 5.4% in Northern California to 21% in Northern Florida.[11]

Herpes

Genital herpes is a lifelong infection characterized by recurrent outbreaks of HSV serotypes 1 and/or 2. HSV-2, the most common cause of recurrent episodes of genital herpes simplex, is notoriously under-diagnosed. It is believed that most people with HSV do not know they have it and since it can be spread with asymptomatic shedding of virus, it is particularly easy to transmit. Estimates are that 50 million people in the U.S. have genital HSV infection.[12]

Besides the discomfort of repeated genital herpes outbreaks and the transmission of HSV-2 during symptomatic and asymptomatic periods, there have been concerns that recurrent HSV may play a role in HIV acquisition and transmission. In a study by Schacker et al., 12 men with HIV disease were studied. HIV-1 was isolated from 25 of 26 HSV-2 lesions during recurrence in all 12 of the men for 67% of the days when genital lesions were noted. None of the 12 were on antiviral therapy for HSV during the study. Only three of the 12 were on therapy for HIV disease.[13] The increased risk of HIV acquisition is estimated to be anywhere from two to four times higher when HSV infection is present.[14] A preliminary study from Africa suggested that suppressive therapy with acyclovir for patients with HSV-2 could be an effective method for decreasing the risk of HIV acquisition.[15]

Difficulties Diagnosing and Treating STDs in Jails

When discussing diagnosis or treatment for any illness within corrections, it is important to be aware of the differences between jails and prisons.

TABLE 1: Rates of syphilis, selected states 2001, /100,000 population

State	Non-incarcerated Population	Incarcerated Men	Incarcerated Women
Pennsylvania	0.8	3.0	10.0
Texas	2.3	5.1	10.5
Tennessee	5.8	0.3	21.2
Alabama	5.1	3.4	9.3
Louisiana	3.9	3.4	7.1
California	1.6	2.8	4.4

Adapted from the Sexually Transmitted Disease Surveillance 2001 Supplement, Syphilis Surveillance Report (CDC)

TABLE 2: Differences Between Jails and Prisons

	Jails	Prisons
Length of stay	Brief; 24 hours to < one year	Usually > one year
Turnover	Rapid	Less rapid
Population size	Usually small	Usually large
Communication with local DOH*	Moderate to extensive	Low to moderate
Screening priorities	Trauma, drug withdrawal, suicide risk, STDs, TB	Chronic illnesses (e.g. hypertension, diabetes, lung disease), TB
Age	Younger	Older
Staffing	Less stable	More stable

Excerpted from Intake and Evaluation in Prisons and Jails, Clinical Practice in Correctional Medicine, Michael Puisis, D.O. Mosby Incorporated 1998
**Ninth National Survey of HIV/AIDS, Sexually Transmitted Diseases, and Tuberculosis in Correctional Facilities*

Recognition of these differences does not suggest that diagnosis and management of STDs in either of these two environments is simple, but highlights the challenges. In prisons, one of the priorities is preventing the introduction of STDs into the inmate population; there may be less concern and urgency regarding transmission to the outside community. In jails, the priorities include diagnosis and treatment within the jail, with great concern for decreasing transmission to the community and prison facilities.

Many have looked at the jail environment as key to controlling STDs, noting high rates of untreated sexually transmitted diseases within minority communities with high incarceration rates.[16] A similar argument has been made for collaboration between jails, prisons, and departments of health to diagnosis, track, and report STD trends in corrections.[17] Due to the high rates of STDs within jails, and the subsequent impact on outside communities, several strategies have evolved to address the issues paramount in jail environments.

In 1997, an assessment of the STD services within city and county jails indicated that most facilities treated for STDs based on symptoms or by arrestee request and did not routinely screen asymptomatic inmates. Less than half of the jails assessed had a policy of offering routine screening, and even in those facilities with routine screening, fewer than half of the inmates were tested for syphilis, gonorrhea, or chlamydia. In those facilities using symptomatic screening for STDs, less than eight percent of women and less than three percent of men were tested. This study also documented a common feature of jails: approximately half of arrestees were released within 48 hours and most facilities received the inmates' test results more than 48 hours after admission.[18]

Diagnosis of STDs

The diagnosis of STDs requires a high index of suspicion, a thorough non-judgmental sexual history, and a careful genital exam. All inmates should be screened for STDs and the type of screening in a facility should be based on prevalence as measured by the population served.

Due to the absence of signs and symptoms in many of those who are infected, it may be difficult to diagnose syphilis unless the medical provider happens upon a chancre of primary syphilis or is convinced a disseminated skin rash is secondary syphilis. Otherwise, syphilis is most often diagnosed by serologic testing using the non-treponemal Rapid Plasma Reagin (RPR) test or the Venereal Disease Research Laboratory (VDRL) test. Confirmatory specific treponemal tests include the fluorescent treponemal antibody absorbed (FTA-ABS) or MHA-TP. Most laboratories will automatically confirm the positive

Continued on page 4

Letter from the Editor

Dear Correctional Colleagues:

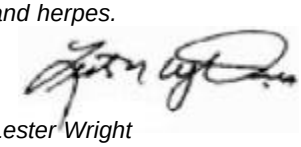
This month's issue focuses on sexually transmitted diseases (STDs) in jails. STD control is an issue in its own right as well as a measure to prevent the spread of HIV.

Correctional health care professionals can provide an effective service for society in helping control STDs. People who have been convicted of a crime have higher rates of medical conditions that similarly involve risk taking, including STDs. A few years ago it was reported that 24% of Chicago's new syphilis cases were diagnosed at the Cook County Jail. Similarly, 13% of Florida's syphilis cases were identified by correctional facilities. Working together with public health departments, we can design programs that can be among the most effective ways to diagnose STDs in our communities. As those cases are reported and as partners/contacts are contacted by public health departments and treated, control of STDs can be greatly advanced.

We should be screening all our incoming inmates to diagnose and treat patients with STDs. Screening should be tailored to the population being served. Not all systems need to do lab tests for all diseases, but we don't know that until we look. Although our systems try to minimize sexual activity within our facilities, it does occur. Assuring the absence of STDs at least prevents disease transmission. Since it has been shown that the presence of STDs facilitates HIV transmission, control of STDs is also an HIV preventive measure.

STD control in corrections must involve close collaboration with public health departments. This is an area that state and local health departments have specialized in for decades. They have staff trained to interview patients with STDs and to locate their sexual partners. Their staff, clearly identified as health department officials, can sometimes get histories that correctional staff cannot (since inmates may not believe that the information they tell us won't be used against them). This collaboration is a win-win for society. If you don't already know your health department colleagues, get to know them now!

After reading this issue, you will have a better understanding of the epidemiology, diagnosis, and treatment of four STDs commonly found in jail settings: syphilis, gonorrhea, chlamydia and herpes.



Dr. Lester Wright
New York State Department of Corrections

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Managing STDs...

(continued from page 2)

non-treponemal test results with specific treponemal results. The use of one serologic test without confirmation is insufficient for diagnosis because false-positive non-treponemal results may be secondary to other medical conditions.

The rapid RPR test is used to qualitatively diagnosis syphilis. In high-prevalence settings, in cases where other signs/symptoms of syphilis exist, and when history of treatment is non-existent or unreliable, positive results can be used to justify empiric treatment while awaiting quantitative results and confirmatory treponemal tests. This is especially useful in the jail setting where patients may not be available in 48 hours when most test results return.

The results of non-treponemal tests correlate with disease activity and will usually revert to negative following successful treatment, though they may remain positive at low titer in some individuals. This condition is referred to as "serofast."

Treponemal antibody tests usually remain positive for years, and sometimes for the lifetime of the patient, regardless of treatment or disease activity. Fifteen to 25 percent of people may revert to negative two to three years after successful treatment.

Previously, gonorrhea and chlamydia required invasive examinations for samples and either microscopic examination of fluid to detect intracellular gram-negative diplococci for GC, or culture to detect both. Currently, nucleic amplification tests can be used on fluid samples, including urine, and sensitively diagnose both these infections.

Primary genital herpes simplex infections often present with significant signs and symptoms of pain at the vesicle, pustule, or ulcer sites, slight fever, and inguinal lymphadenopathy dependent upon the extent of lesions. Recurrences are often less symptomatic, may present with a prodrome of itching or burning or may go completely unnoticed. History and visual signs usually make a clinical diagnosis fairly straightforward, but viral culture can help identify which form of HSV the patient has, and this has prognostic significance. Generally HSV-1 recurs with less frequency than HSV-2.

TREATMENT

The success of treatment for STDs depends upon an accurate diagnosis, the correct antibiotic or antiviral therapy, and the proper duration of treatment. Multiple guidelines documenting treatment choices are available; the most user-friendly version is the Sexually Transmitted Diseases Treatment Guidelines published by the CDC, which are regularly updated.

TABLE 3: Ways to Increase Diagnosis and Treatment of STDs in Jail Inmates

Method	Advantage	Disadvantage
Routinely test for common STDs prevalent within community at large. Use of rapid RPR, and urine ligase tests for GC and chlamydia.	1. Will likely increase numbers of arrestees diagnosed with STDs. 2. Urine ligase tests for GC and chlamydia increase acceptance and accuracy of testing. 3. Earlier diagnosis and/or suspicion may lead to increased treatment success, decreased transmission within corrections and positively impact at-large community. 4. Increased surveillance capability for local Department of Health.	1. Increased laboratory and pharmaceutical cost for diagnosis and treatment. 2. Increased diagnosis may not lead to increased treatment due to rapid turnover in jails. 3. May depend upon awareness of STD prevalence in outside communities.
Surrogate markers for evidence of STDs, e.g. urine dipstick looking for leukocyte esterase.	1. Relatively inexpensive with immediate results. 2. Useful in high prevalence areas with rapid turnovers of arrestees who may not be available for follow-up evaluation. 3. Often already used to diagnose sequelae of other chronic conditions.	1. Due to poor sample quality, may lead to over-treatment. Subject to interpretation. 2. Does not offer accurate diagnosis for treatment or surveillance purposes.
Close collaboration with local departments of health.	1. Useful for continuity of care into and out of corrections, contact tracing, and partner notification. 2. Cost savings when previous treatment completion confirmed. 3. Field-delivered therapy will increase completion of treatment and decrease community spread of disease. 4. Useful for training in recognition of and treatment for STDs.	1. There may be a significant delay in data entry, which may alter certainty of treatment completion. This may lead to either over-treatment or under-treatment. 2. Use of aliases may make documentation difficult.

Education on the prevention of acquisition and spread of STDs should be included with any treatment recommendations. The CDC's Prevention Advisory Committee has recommended integration of STD and HIV programs, but current increases in STDs among HIV-positive men who have sex with men (MSM) highlights the overall failure of this integration to date.[19]

CONCLUSION

Although this article addressed only four of the many STDs, these four are significantly prevalent within jails. There has been a resurgence in sexually transmitted diseases in recent years and the correctional environment is not exempt from this increase in case rates. If anything, the jail environment is a startling example of this resurgence. Diagnosis and treatment within corrections, especially jails, can have an impact on the prevalence of disease within jails and the communities they serve.

Obviously, most arrestees do not enter the correctional environment for the sole purpose of receiving health care. However, it is incumbent upon medical providers to do what they can to approach patients and determine and address their health needs, even with limited resources and time. This is true even for patients who are not aware of these health needs. This approach is important regarding STDs, as patients may have minimal or no symptoms, leading to transmission of these infections inside and outside the jail setting.

***DISCLOSURES:** Consultant: Bristol-Myers Squibb, Gilead, Abbott Laboratories.*

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Managing STDs...

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TABLE 4: Treatment Recommendations

Disease	Recommendation	Alternative regimen
Primary and secondary syphilis Early latent syphilis (<one year duration)	Benzathine penicillin 2.4 million units IM in a single injection	1. Doxycycline 100 mg po bid for 14 days, or 2. Tetracycline 500 mg po qid for 14 days
Latent syphilis (>one year duration or unknown)	Benzathine penicillin 2.4 million units IM for three doses at one-week intervals	1. Doxycycline 100 mg po bid for 28 days, or 2. Tetracycline 500 mg po qid for 28 days
Neurosyphilis	Aqueous crystalline penicillin G 18-24 million units per day, administered as 3-4 million units IV every four hours or continuous infusion, for 10-14 days	Procaine penicillin 2.4 million units IM once daily plus Probenicid 500 mg orally four times a day, both for 10-14 days
Syphilis in Pregnancy	Penicillin regimen appropriate for stage of syphilis	Penicillin allergic pregnant patients should be desensitized to penicillin
Neisseria gonorrhea	1. Ceftriaxone 125 mg IM in a single dose, or 2. Ciprofloxacin 500 mg orally in a single dose, or 3. Ofloxacin 400 mg orally in a single dose, or 4. Levofloxacin 250 mg orally in a single dose(quinolones not recommended in infection acquired in CA or HI)	Plus treat for chlamydial infection if it has not been ruled out
Chlamydia trachomatis	1. Azithromycin 1g orally in a single dose, or 2. Doxycycline 100 mg orally twice daily for seven days	1. Erythomycin base 500 mg orally four times daily for seven days, or 2. Erythromycin ethylsuccinate 800 mg orally four times daily for seven days, or 3. Ofloxocin 300 mg orally twice daily for seven days, or 4. Levofloxacin 500 mg orally daily for seven days
Chlamydia in pregnancy	1. Erythromycin base 500 mg orally four times daily for seven days, or 2. Amoxicillin 500 mg orally three times daily for seven days	1. Erythomycin base 500 mg orally four times daily for 14 days, or 2. Erythromycin ethylsuccinate 800 mg orally four times daily for seven days, or 3. Erythromycin ethysuccinate 400 mg orally four time daily for 14 days, or 4. Azithromycin 1g orally in a single dose
Herpes simplex, first clinical episode	1. Acyclovir 400 mg three times daily for seven to 10 days, or 2. Acyclovir 200 mg orally five times daily for seven to 10 days, or 3. Famciclovir 250 mg orally three times daily for seven to 10 days, or 4. Valacyclovir 1 g orally twice daily for seven to 10 days	
Genital herpes, recurrence	Episodic therapy: 1. Above regimens for five days, or 2. Valacyclovir 500 mg for three to five days	Suppressive therapy: 1. Acyclovir 400 mg orally twice daily, or 2. Famciclovir 250 mg orally twice daily, or 3. Valacyclovir 500 mg orally once daily, or 4. Valacyclovir 1 g orally once daily

Ask the Expert

Case Study: Newly-admitted Patient with a Penile Lesion

Case presentation by Stephen Tabet, M.D., M.P.H., Assistant Professor of Medicine, University of Washington, and Director, Northwest Correctional Medicine Education Program. Case discussion by Kinji Hawthorne*, M.D., Senior Infectious Diseases Fellow, University of Washington School of Medicine. A collaboration with the Northwest AIDS Education and Training Center, with Stephen Tabet, M.D., and Kate Willner, trainer.*

Case: A 27-year-old male presents to the prison infirmary with penile pain. He reports having had the pain for the past three days, ever since accidentally catching part of the skin of his penis in his pants zipper. The patient reports previous good health. He is mildly developmentally delayed and has bipolar affective disorder for which he takes Depakote. The patient arrived at this facility one week ago and is newly incarcerated. He denies any sexual activity since he arrived. He reports being in a monogamous relationship with a woman for the past year. He denies ever having sex with men. The patient is examined by the infirmary nurse and found to have a 1.0 cm x 0.5 cm single oval lesion on the shaft of the penis and pronounced bilateral inguinal adenopathy. The on-call doctor is consulted; he prescribes a topical antibiotic ointment. Three weeks later, the patient is seen in follow-up. While the penile lesion has resolved, he now has a macular/pustular rash on his chest. A rapid plasma reagin (RPR) test is ordered. It is reactive at 1:128. The diagnosis of syphilis is confirmed by microhemagglutination assay for *Treponema pallidum* (MHA-TP).

What is the patient's diagnosis at initial presentation? The patient more than likely has genital ulcer disease (GUD) due to genital herpes, primary syphilis, or chancroid.

What is the patient's diagnosis on second presentation? His diagnosis is secondary syphilis.

Discussion: GUD is often difficult to diagnose due to the variability in clinical presentation. A correct and rapid diagnosis is important, however, as an inaccurate or delayed diagnosis leads to a delay in treatment and therefore increases the likelihood that the inmate may infect others through sexual encounters. Incarcerated persons entering correctional facilities are at high risk for having sexually transmitted diseases (STDs) because of the high prevalence of risky sexual behaviors and limited access to health care for routine STD screening.[1] In one study of adults screened for STDs on entering one of 23 jails, the prevalence of syphilis reactivity was found to be as high as 7.8% for men and 23.8% for women.[2]

Evaluation of Genital Ulcer Disease

The work-up for GUD begins by considering its infectious and non-infectious causes. Infectious causes of GUD include genital herpes, primary syphilis, chancroid, granuloma inguinale, and lymphogranuloma venereum. Genital herpes, caused by herpes simplex virus (HSV) 1 and 2, is the most prevalent cause of GUD in North America, followed by primary syphilis (*Treponema pallidum*), and chancroid (*Haemophilus ducreyi*).[3] Granuloma inguinale (donovanosis), caused by the bacterium *Calymmatobacterium granulomatis*, and lymphogranuloma venereum (LGV), caused by *Chlamydia trachomatis* serovars L1-3, are rare causes of GUD in the United States. Donovanosis is endemic in certain tropical and developing areas, such as India; Papua New Guinea; Central Australia; and Southern Africa.[4] A discussion of non-infectious causes of GUD is beyond the scope of this article, but should be considered if the work-up for infectious causes is negative.

Diagnostic Considerations

It is sometimes possible to make a diagnosis of GUD based on clinical criteria (medical history and physical examination) alone. However, the accuracy of a diagnosis based solely on history and a physical is highly variable, ranging from 22% to 80%.[5] A thorough evaluation of all patients who have genital ulcers should include a serologic test for syphilis. It should also include a diagnostic evaluation for genital herpes by isolation in cell culture or direct fluorescent antibody (DFA) testing for type-specific and nonspecific antibodies to HSV. In settings where chancroid is prevalent, a culture for *Haemophilus ducreyi* on special culture medium may be performed. However, *H. ducreyi* culture lacks sensitivity and the special culture medium is not widely available. A presumptive diagnosis of chancroid can be made if 1) the patient has one or more painful genital ulcers, 2) the patient is not RPR-reactive based on a test performed at least seven days after onset of ulcers, 3) the clinical presentation (appearance of genital ulcers and presence of tender, suppurative regional lymphadenopathy) is typical for chancroid, and 4) evaluation for HSV is negative. A diagnosis of syphilis can be made from a positive nontreponemal test (Venereal Disease Research Laboratory [VDRL]) or reactive RPR, confirmed by a treponemal test (serum fluorescent treponemal antibody absorption (FTA-ABS) and MHA-TP. A biopsy of the ulcers may be helpful in identifying the etiologic pathogen if response to initial therapy is poor.[4] Finally, the association between GUD and risk for HIV has been shown consistently.[12] HIV antibody testing should be included in the evaluation of all patients presenting with GUD.

Syphilis

The risk for acquisition of syphilis from an infected sexual partner has been estimated at about 30%.[6] Transmission via blood products is theoretically possible since syphilitic organisms may survive for up to five days in refrigerated blood. However, the risk of transmission from a blood transfusion is negligible due to uniform serologic testing of all blood donors and a shift from transfusion of fresh blood to transfusion of refrigerated blood components.[7] Needle sharing does not appear to play a role in syphilis transmission.[8]

Natural History

Patients may present for evaluation and treatment of signs/symptoms related to the different stages of syphilis infection: primary, secondary, latent, or tertiary. Primary syphilis is heralded by the appearance of a chancre, usually a single, painless, indurated ulcer with a clean base, and regional lymphadenopathy, on average three weeks after exposure. The physical appearance of these lesions may vary considerably, which makes clinical diagnosis based on visual examination unreliable.[9] In men, lesions most commonly appear on the penis, specifically the coronal sulcus and glans. Anorectal chancres are common in men who have sex with men. In women, the lesions usually present on the labia majora, labia minora, fourchette, and perineum.

The onset of secondary syphilis typically occurs within a few weeks of primary chancre resolution. Manifestations are protean, ranging from a rash to central nervous system (CNS) involvement. The cutaneous lesions of secondary syphilis may easily be mistaken for other dermatologic conditions. Rashes can range from macular to maculopapular, follicular, and occasionally pustular. A rash due to secondary syphilis tends to be universally distributed and nonpruritic, commonly involving the palms and soles. Some patients may experience various degrees of pruritus.[10] In untreated patients, the lesions resolve over several weeks and may heal with scarring or abnormal pigmentation. Other clinical manifestations of secondary syphilis include low-grade fever, malaise, lymphadenopathy (painless and most commonly involving the suboccipital, cervical, posterior auricular, and epitrochlear nodes), mucosal lesions (mucous patch involving the tongue, buccal mucosa, and lips), condyloma lata, alopecia ("moth-eaten appearance"), meningitis, ocular involvement and headaches.

Latent syphilis is defined as the period from the disappearance of the

(Continued on page 7)

Case Study... *(continued from page 6)*

secondary manifestations until either a therapeutic cure occurs or tertiary manifestations develop.[8] Latent syphilis is arbitrarily divided into early phase (from the onset of infection to less than one year) and late phase (more than one year after infection). The length of time for latent syphilis varies from person to person.

Tertiary syphilis may involve the skin, bones, CNS, cardiovascular system, and great vessels. The five major categories of CNS syphilis include 1) asymptomatic (presence of cerebral spinal fluid [CSF] abnormalities in the absence of neurologic symptoms or signs), 2) meningeal, 3) meningovascular (diffuse encephalitic presentation with superimposed focal signs), 4) parenchymatous (rare since modern antibiotic era; may present as paresis or tabes dorsalis), and 5) gummatous (rare). In patients who are co-infected with HIV the natural history of syphilis may be altered significantly, resulting in an overlap of syphilitic stages, making delineation of stages on clinical grounds exceedingly difficult.[11] This is rare in non-HIV infected persons.

Treatment and Follow-up

For primary and secondary syphilis, parenteral benzathine penicillin G has been the treatment of choice for 50 years and is key for achieving clinical resolution, preventing sexual transmission and preventing late sequelae. The recommended dose is 2.4 million units intramuscularly, in a single dose. In non-pregnant patients who are penicillin-allergic and who have primary or secondary syphilis, either doxycycline 100 mg orally twice daily for 14 days or tetracycline 500 mg four times daily for 14 days are the accepted alternative regimens. Pregnant patients or patients with penicillin allergy whose adherence to therapy or follow-up cannot be ensured should be desensitized and treated with benzathine penicillin. Follow-up should consist of a clinical reexamination and serological testing at six months and 12 months following treatment. HIV co-infected patients should be evaluated at three-month intervals instead of six-month intervals. Nontreponemal test antibody titers (quantitative RPR or VDRL) are better correlates of disease activity than are treponemal tests.

Failure of nontreponemal test titers to decline fourfold within six months after therapy for primary or secondary syphilis, or signs/symptoms that persist or recur are indicative of probable treatment failure. Patients who fail to respond should be reevaluated for HIV infection. Other reasons for a lack of therapeutic response that should be considered include re-infection with *T. pallidum* and unrecognized CNS infection; however, re-infection usually cannot be reliably distinguished from treatment failure. To rule out possible CNS infection, CSF analysis is generally recommended. Patients who fail to respond should be re-treated with benzathine penicillin G 2.4 million units intramuscularly given weekly on three doses if CSF analysis for CNS infection is negative. In rare situations where serologic titers do not decline despite a negative CSF examination and a repeated course of therapy, no additional treatment or repeat CSF examinations are warranted.

For early latent syphilis, benzathine penicillin G 2.4 million units intramuscularly in a single dose is recommended. For late latent syphilis or latent syphilis of unknown duration, benzathine penicillin G 2.4 million units intramuscularly weekly for three weeks is recommended. For non-pregnant, penicillin-allergic patients presenting with early latent syphilis, either doxycycline (100mg orally twice daily for 14 days) or tetracycline (500mg orally four times daily for 14 days) are acceptable alternative regimens. For non-pregnant, penicillin-allergic patients presenting with late latent syphilis or latent syphilis of unknown duration, doxycycline 100mg orally twice daily or tetracycline 500mg orally four times daily, either to be given for 28 days, are acceptable alternative therapies, in conjunction with close serologic and clinical follow-up. An important caveat to the use of these alternative therapies is that the efficacy of these regimens in HIV-infected patients has not been studied and should be used with caution. Pregnant patients who are allergic to penicillin should be desensitized and treated with penicillin.

Follow-up should include serial quantitative nontreponemal serologic tests repeated at six, 12, and 24 months. Persons with HIV should be monitored more frequently (six, 12, 18, and 24 months after therapy). Patients who fail to respond (i.e., titers increase four-fold, or an initially high titer of = 1:32 fails to decline at least fourfold within 12-24 months of therapy, or signs/symptoms consistent with syphilis develop) and whose CSF analysis to rule out unrecognized CNS infection is normal, should be re-treated for latent syphilis. Patients with HIV infection or patients who fail to respond should be managed in consultation with an infectious diseases specialist.

Public Health Considerations

Key public health strategies that will help prevent and control the transmission of syphilis, HIV, and other STDs in correctional settings include educating inmates about STDs and routine screening for STDs. Most public health departments require reporting of some types of STDs; make sure your correctional facility complies with the reporting rules of your local and state health departments. Partner notification with evaluation, treatment, and follow-up are also essential to limiting the transmission of syphilis and other sexually transmitted infections. The time frames for partner notification for primary, secondary, and early latent syphilis are three, six, and 12 months, respectively, before the development of symptoms in the index case. All sexual contacts of patients with late latent syphilis should be evaluated.[8]

Conclusion

Incarcerated persons are at high risk for STDs. Even the most astute clinician may find it challenging to correctly diagnose genital ulcer disease based on medical history and physical examination alone. Appropriate serologic and microbiologic tests should always be performed to determine whether the cause of GUD is infectious and to improve diagnostic accuracy. A thorough work-up of genital ulcer disease should always include HIV screening. Once the diagnosis has been determined it is important to begin treatment promptly and to schedule the patient for follow-up. This will prevent sexual transmission and late sequelae, and ensure an adequate response to therapy. In the event of treatment failure, HIV status should be re-evaluated.

***DISCLOSURES:** Nothing to disclose.*

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Sponsored by the National Minority AIDS Council
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Call: 202-483-6622
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Inside News

FDA Approves Gilead's Once-Daily NRTI, Emtriva
The U.S. Food and Drug Administration (FDA) has approved Gilead Sciences' once-daily nucleoside reverse transcriptase inhibitor (NRTI), Emtriva (emtricitabine), to be used in combination with other antiretroviral medications to treat HIV. Emtriva works by blocking an enzyme necessary for HIV replication. Gilead gained approval for its other once-daily NRTI, Viread (tenofovir), and is developing a combination pill containing both drugs, which it hopes will be available in 2005. The U.S. wholesaler acquisition cost for Emtriva is $252.83 for 30 capsules (one month of therapy). Emtriva is available in pharmacies now. *Reuters, 7/2/03*

CDC: Doctors Should Not Use Two-Month Rifampin/Pyrazinamide Regimen for LTBI
The two-month combination therapy using rifampin and pyrazinamide to treat latent TB infection (LTBI) can cause severe liver damage and death, and should not be used, according to a study from the Centers for Disease Control and Prevention (CDC). In data collected from January 2000 to June 2002, the CDC received reports of 48 patients with LTBI who experienced severe liver injury after receiving the two-drug treatment. Eleven patients died. The CDC recommends using a nine-month regimen of isoniazid as the preferred treatment. The rifampin/pyrazinamide regimen should be used only if the potential benefits outweigh the risk for severe liver injury and death associated with it. *CDC MMWR 2003;52;(31):735-739.*

DHHS Releases Revised ARV Guidelines; Hopes to Make Drug Selection Easier
The U.S. Department of Health and Human Services (DHHS) has released an updated version of the Guidelines for the Use of Antiretroviral Agents in HIV-Infected Adults and Adolescents. The new version, which contains a list of suggested combination regimens for the initiation of antiretroviral therapy, is expected to make the selection of appropriate treatment easier. Based on the results of clinical trials and expert opinion, the suggested regimens are classified as "preferred" or "alternative." The guidelines are available at www.aidsinfo.nih.gov, or can be ordered by calling 1-800-448-0440. *National Institutes of Health Press Release, 7/14/03*

Lamivudine + Abacavir + Tenofovir Arm of Study Halted Due to Early Virologic Non-Response
GlaxoSmithKline has notified health care providers of a high rate of early virologic non-response in clinical study ESS30009, which was studying therapy-naïve adults receiving once-daily combination therapy with lamivudine (3TC), abacavir (ABC), and tenofovir (TDF). Based on the results, the company recommends that 3TC, ABC, and TDF not be used as sole therapy for HIV; that any patients taking this combination be closely monitored and considered for modification of the therapy; and that any use of the combination with other antiretroviral agents be closely monitored for signs of treatment failure. *AEGiS news service, 7/25/03*

New Guidelines Available for HIV Drug Resistance Testing
New guidelines on the use of resistance testing have been published by the American arm of the International AIDS Society (IAS-USA). The guidelines were created by an international panel of researchers convened in 2002, and includes information on how HIV develops resistance to different HIV drugs; highlights the importance of key mutations; discusses the different types of resistance tests available; and makes recommendations for their use in pregnancy and other situations. The guidelines were initially published in the July 1, 2003 issue of Clinical Infectious Diseases, and are also available for download on the IAS-USA website, www.iasusa.org. *AEGiS news service, 7/21/03*

Resources

Serving Women in the Correctional System Through Ryan White CARE Act Programs
www.aids-alliance.org
A resource for CARE Act grantees who serve women living with HIV/AIDS who are incarcerated and transitioning back to the community, or newly released. Includes tips to help grantees get started, offers examples of other programs across the country, and directs interested grantees to resources for more information.

Body Pro CME/CE
www.thebodypro.com/cme/
A new way to earn CME or CE credits online.

Three-Five Day Hands-on HIV Training Opportunities for NY and NJ providers
Supported via the New York/New Jersey AIDS Education & Training Center
Limited to New York State (NYS) & New Jersey clinical providers only
NY Training Locations: Albany, New York City, Syracuse, Rochester and
Buffalo. To obtain application information call (518) 262-6864 or email: corlewc@mail.amc.edu

Hepatitis C Informational Brochure
www.harmreduction.org
The 32-page informational brochure is geared toward drug users, and provides information about HCV infection risks, prevention, screening, and diagnosis. Copies are available as a free PDF file or for 35 cents per printed pamphlet. Call (212) 213-6376 x10 for more information.

Self-Assessment Test for Continuing Medical Education Credit

Brown Medical School designates this educational activity for 1 hour in category 1 credit toward the AMA Physician's Recognition Award. To be eligible for CME credit, answer the questions below by circling the letter next to the correct answer to each of the questions. A minimum of 70% of the questions must be answered correctly. This activity is eligible for CME credit through February 28,2004. The estimated time for completion of this activity is one hour and there is no fee for participation.

1. The syphilis rate among the general population in the U.S. in 2001 was:
   (a) 22.0 cases per 100,000
   (b) 2.2 cases per 100,000
   (c) .20 cases per 100,000
   (d) None of the above

2. Which of the following groups has had the largest increase in syphilis rates in the U.S. over the past few years?
   (a) Women
   (b) Heterosexual men
   (c) Men who have sex with men (MSM)
   (d) African-American women

3. Recently, the rates of gonorrhea and chlamydia in the U.S. have:
   (a) Remained steady
   (b) Decreased
   (c) Increased

4. When genital lesions due to HSV are present, the risk for transmission of HIV is estimated to be:
   (a) Reduced by 50%
   (b) Two to four times higher
   (c) Twenty times higher

5. Key public health strategies that are essential to preventing and controlling the transmission of syphilis, HIV, and other STDs include:
   (a) Partner notification
   (b) Routine screening for STDs
   (c) Educating patients about STDs and how to prevent them
   (d) All of the above

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