STIs and HIV

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Objectives

- Discuss the importance of the role of primary care providers in the treatment and prevention of sexually transmitted infections (STIs)
- Understand the relationship between STIs and HIV
- Review CDC treatment guidelines for common STI infections, including considerations for people living with HIV

Background

- Approximately 20 million new STI cases annually in USA
- Over half in persons aged 15-24 years
- Recent increase in rates
- STIs account for 16.9 billion in health care costs annually
- Can lead to severe reproductive health complications
- Increased risk for acquiring or transmitting human immunodeficiency virus (HIV)

https://www.cdc.gov/mmwr/volumes/68/rr/rr6805a1.htm

Sexual History

The Five P's

- Partners
  - Men, women, both
  - Number of partners, last 2, 12 months
  - Partner's sexual history during relationship
- Practices
  - Types of sex - vaginal, anal, oral
  - Condom usage - never, sometimes, always

https://www.cdc.gov/std/treatment/sexualhistory.pdf

Sexual History

The Five P's

- Prevention of Pregnancy
  - What are you doing to prevent pregnancy?
- Protection from STIs
  - What are you doing to protect yourself?
- Past History of STIs
  - Have you or your partner ever had an STI?

*Injection drug use, money/drugs for sex

https://www.cdc.gov/std/treatment/sexualhistory.pdf

Guidelines for STI Screening

- Risk Assessment for STIs
  - Detailed sexually history at each visit
  - Annual screening for STIs in HIV-infected persons (gonorrhea(GC), chlamydia(CT), syphilis)
  - Risk reduction discussion

- Testing for hepatitis A, B, and C

Guidelines for STI Screening

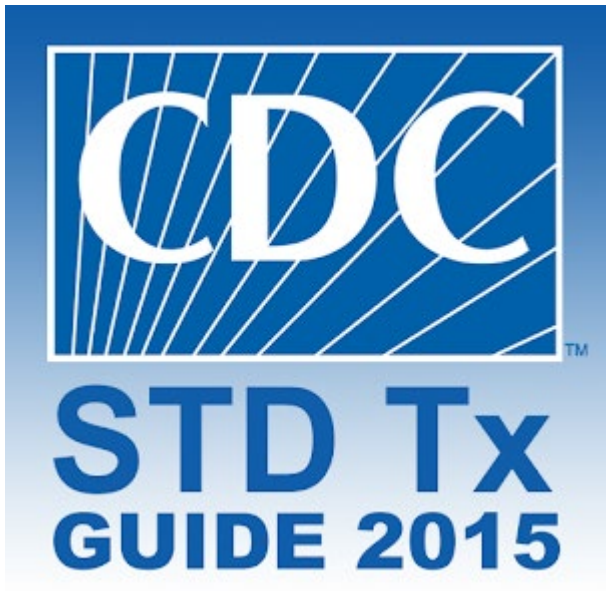
- Men who have sex with men (MSM) should have annual 3 site testing
- Women should be tested for trichomoniasis and have PAP annually
- More frequent STI screening may be indicated

STIs and HIV

- STIs may lead to increased risk for HIV
  - Behavioral component
  - STIs and HIV linked
  - Sore or inflammation from STI provides mode of entry
- STIs may increase risk of spreading HIV
  - Increased shedding of the HIV virus in the presence of urethritis or genital ulcer
- Syphilis coinfection in MSM

https://www.cdc.gov/std/hiv/stdfact-std-hiv-detailed.htm

2015 STD Treatment Guidelines



Diseases characterized by Ulcerative Lesions

- Chancroid
- Genital HSV infections
- Lymphogranuloma Venereum (LGV)
- Granuloma Inguinale

Chancroid

Chancroid

- Prevalence declined in United States
- Definitive diagnosis *H.ducreyi culture*
  - *Sensitivity < 80%*
  - No FDA approved PCR test available
- Clinical diagnosis
  - One or more painful genital ulcers
  - Regional lymphadenopathy
  - No evidence of syphilis, proven by testing at least 7 days after ulcer onset
  - Negative HSV test results

Chancroid

Early Stage
Photo courtesy of the CDC (1971)

Late Stage
J. Pledger/CDC

Chancroid

Genital Lesions of Chancroid

Treatment

- *Recommended Regimens*
- Azithromycin 1 g orally in a single dose
  OR
- Ceftriaxone 250 mg IM in a single dose
  OR
- Ciprofloxacin 500 mg orally twice a day for 3 days
  OR
- Erythromycin base 500 mg orally three times a day for 7 days

Follow-Up

- Uncircumcised men and persons with HIV do not respond as well to treatment
  - May require repeated or longer course of treatment
- Reexamine in 3-7 days after treatment
  - Symptoms from ulcers usually improve by 3 days
  - Resolution may be seen as early as 1 week
- Partner treatment
  - If sexual contact 10 days prior to symptoms

Genital HSV Infections

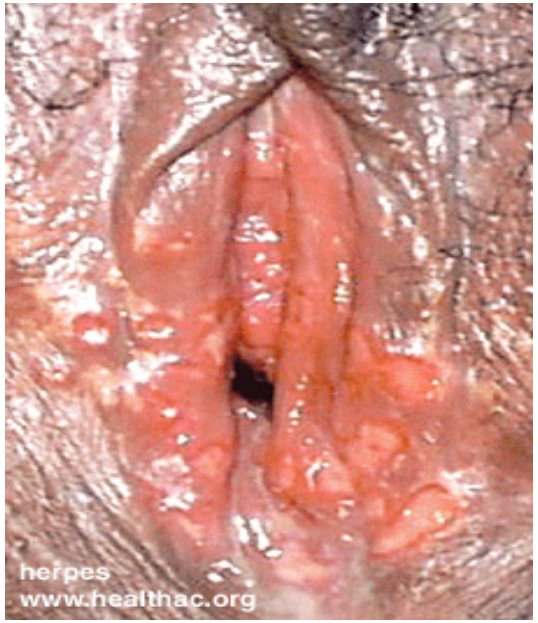
Genital HSV

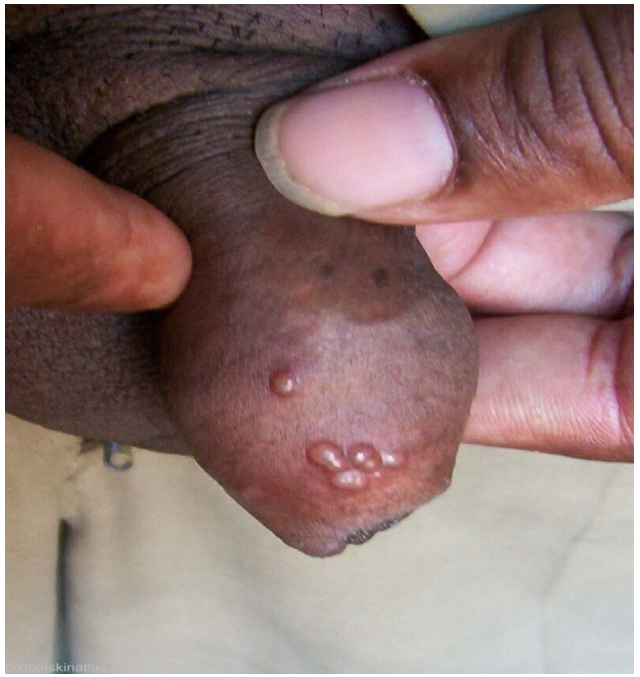
- Most are asymptomatic or unrecognized
  - Shedding of the virus intermittently leads to transmission
- Chronic life-long infection
- 1 or more vesicles, leaving painful ulcers that may take 2-4 weeks to resolve
  - Absent in many
- Incubation period 2-12 days

Genital HSV Types

- HSV-2
  - Most cases of genital herpes
- HSV-1
  - Frequent cause of initial outbreaks in young women and MSM
    - Anogenital infection
  - Recurrences & asymptomatic shedding less common than with HSV-2

Genital HSV





HSV Diagnosis

- Diagnosis
  - May be difficult due to the lack of lesions present
    - Negative test does not rule out infection
  - Confirm using type-specific laboratory testing
    - Virologic and serologic testing should be available in clinic that provide treatment for STIs
- Cell Culture
  - Sensitivity low, for recurrent and healing lesion
- PCR
  - More sensitive
  - Test of choice for diagnosing CNS and systemic infections

Primary vs Recurrent

- Primary Infection
  - May be severe with painful ulcers, dysuria, fever, inguinal lymphadenopathy, and headache
  - Mild or asymptomatic
  - No difference in symptoms based on type
  - Incubation period between 2-12 days
  - Increased viremia
- Recurrent Infection
  - More common with HSV-2 than HSV-1
  - Common, but decreased severity
  - Shorter duration
  - Less viral shedding

HSV Treatment

- Antiviral chemotherapy is backbone of treatment
- Counsel on the natural course of herpes, perinatal and sexual transmission, and reduction of transmission
- Systemic antiviral medications
  - Initial episodes
  - Recurrent episodes
  - Suppressive therapy
- Topical treatment with antiviral drugs not recommended

HSV Treatment

First Episode

Recommended Regimens

- Acyclovir 400 mg orally three times a day for 7–10 days
  OR
- Acyclovir 200 mg orally five times a day for 7–10 days
  OR
- Valacyclovir 1 g orally twice a day for 7–10 days
  OR
- Famciclovir 250 mg orally three times a day for 7–10 days

HSV Treatment

Suppressive Therapy

Recommended Regimens

- Acyclovir 400 mg orally twice a day
  OR
- Valacyclovir 500 mg orally once a day*
  OR
- Valacyclovir 1 g orally once a day
  OR
- Famiciclovir 250 mg orally twice a day

HSV Treatment

Episodic Therapy

Recommended Regimens

- Acyclovir 400 mg orally three times a day for 5 days
  OR
- Acyclovir 800 mg orally twice a day for 5 days
  OR
- Acyclovir 800 mg orally three times a day for 2 days

HSV Treatment

Episodic Therapy

Recommended Regimens

- Valacyclovir 500 mg orally twice a day for 3 days
  OR
- Valacyclovir 1 g orally once a day for 5 days
  OR
- Famciclovir 125 mg orally twice daily for 5 days
  OR
- Famciclovir 1 gram orally twice daily for 1 day
  OR
- Famciclovir 500 mg once, followed by 250 mg twice daily for 2 days

HSV Treatment

Treatment for patients infected with HIV

Recommended Regimens for Daily Suppressive Therapy

- Acyclovir 400–800 mg orally twice to three times a day
  OR
- Valacyclovir 500 mg orally twice a day
  OR
- Famciclovir 500 mg orally twice a day

Recommended Regimens for Episodic Infection

- Acyclovir 400 mg orally three times a day for 5–10 days
  OR
- Valacyclovir 1 g orally twice a day for 5–10 days
  OR
- Famciclovir 500 mg orally twice a day for 5–10 days

Lymphogranuloma Venereum (LGV)

LGV

- Causative agent *C. trachomatis* serovars L1, L2, or L3
- Unilateral, tender inguinal/femoral lymphadenopathy
- Self-limited ulcer or papule at site of inoculation
- MSM or women may develop proctocolitis
  - Rectal exposure
    - Mucoid or bloody discharge, pain, constipation, or fever

LGV

LGV Diagnosis

- Diagnosis based on clinical suspicion, epidemiology, exclusion of other etiologies
- PCR not widely available
- Nucleic acid amplification tests (NAATs) for confirmation
- Specimens can be tested for *C. trachomatis* by culture, direct immunofluorescence, or nucleic acid detection
- NAATs for *C. trachomatis* rectal specimens are reliable, however not FDA approved

LGV Treatment

Recommended Regimen

- Doxycycline 100 mg orally twice a day for 21 days
- *Alternative Regimen*
- Erythromycin base 500 mg orally four times a day for 21 days
- Azithromycin 1 gram orally once weekly for 3 weeks
  - Probably as effective however, clinical data insufficient

Follow-up

- Follow until signs and symptoms resolve
- Persons with HIV infection should receive the same treatment as persons without HIV infection
  - Extended treatment might be required, and delay in symptom resolution might occur

Granuloma Inguinale (Donovanosis)

Granuloma Inguinale Diagnosis

- *Klebsiella* (formerly *Calymmatobacterium*) *granulomatis*
  - *Gram-negative bacteria*
- Endemic in tropics, rare in the US
- Difficult to culture
  - Requires presence of Donovan bodies on tissue or biopsy
  - No FDA-cleared molecular DNA test

Granuloma Inguinale

- Painless, slowly progressive ulcerative lesions
  - Genital region or perineum
- No regional lymphadenopathy
- May have subcutaneous granulomas (pseudobuboes)
  - Very vascular and easy to bleed
- Extragenital infection
  - Pelvis, abdominal organs, bones, or mouth

Granuloma Inguinale

emedicine.medscape.com

Granuloma Inguinale Treatment

Recommended Regimen

- Azithromycin 1 g orally once per week or 500 mg daily for at least 3 weeks and until all lesions have completely healed
- *Alternative Regimens*
- Doxycycline 100 mg orally twice a day for at least 3 weeks and until all lesions have completely healed
  OR
- Ciprofloxacin 750 mg orally twice a day for at least 3 weeks and until all lesions have completely healed
  OR
- Erythromycin base 500 mg orally four times a day for at least 3 weeks and until all lesions have completely healed
  OR
- Trimethoprim-sulfamethoxazole one double-strength (160 mg/800 mg) tablet orally twice a day for at least 3 weeks and until all lesions have completely healed

Follow-Up

- Follow until signs and symptoms resolve
- Persons with HIV infection should receive the same treatment as persons without HIV infection
  - Consider adding an aminoglycoside (gentamicin 1 mg/kg IV every 8 hours) if no improvement within the first few days of treatment

Syphilis

Tuskegee Experiment

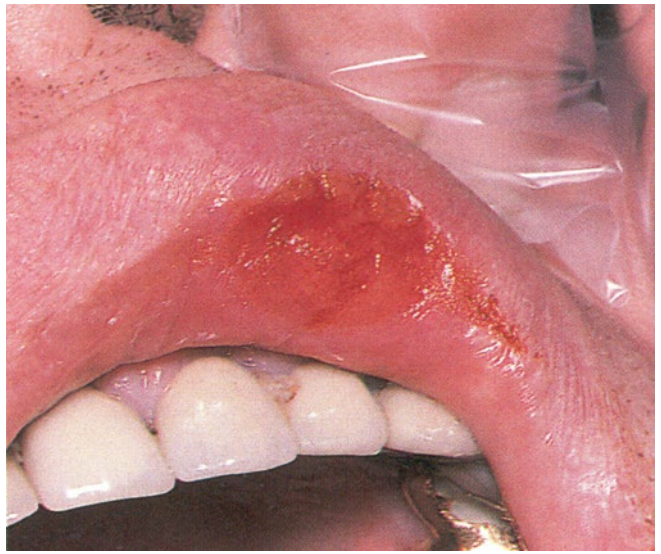
- Clinical study between 1932 – 1972
- U. S. Public Health Service/Tuskegee University
- Purpose: To understand the natural progression in untreated syphilis
- Participants: 622 AA men from Macon County, Alabama
- Incentives: Free medical care, meals, and free burial insurance

Syphilis

- Systemic disease caused by *Treponema pallidum*
- Different stages based on clinical findings
  - Primary syphilis – ulcer or chancre
  - Secondary syphilis – rash, mucocutaneous lesions, lymphadenopathy
  - Tertiary syphilis – cardiac, gummatous lesions, tabes dorsalis, general paresis
  - Latent infections – no clinical symptoms
    - Early latent
    - Late latent
    - Syphilis of unknown duration
- Neurosyphilis – can occur at any stage

Primary Syphilis

Chancre



Chancre

Secondary Syphilis

Secondary Syphilis

Condyloma Lata

- Seen in 10-20%
- “teeming with spirochetes”

Syphilis Diagnosis

- Darkfield examination of lesions
- PCR not commercially available
- Usually diagnosed by combination of 2 types of serologic tests:
  - Nontreponemal (screening) – VDRL or RPR
  - Treponemal (confirmatory) - FTA-ABS, TP-PA, EIAs, chemiluminescence immunoassays, immunoblots, or rapid treponemal assays
- NOTE: some labs doing reverse sequence syphilis screening algorithm

Syphilis Diagnosis

Nontreponemal

- May have false positives
- Use same type of test for follow-up
- Quantitative – fourfold change in titer to demonstrate clinical significance
- Declines with treatment and often become nonreactive over time
- “Serofast reaction” – antibodies may linger in some patients

Syphilis Diagnosis

- Treponemal
- Several available tests, but only a few approved in US

- Most patients will have reactive test for life, 15% - 25% revert to nonreactive after 2-3 years

- Should not be used to determine treatment response
  - Don’t distinguish between active and past infection

Neurosyphilis Diagnosis

- CSF studies commonly abnormal
  - If so, repeat every 6 months – up to 2 years
- VDRL in CSF
  - Highly specific – diagnostic in absence of substantial blood contamination
  - Not sensitive
- FTA-ABS in CSF
  - Very sensitive
  - Consider if highly suspicious but CSF VDRL nonreactive

Syphilis Diagnosis and HIV

- Treponemal and nontreponemal tests interpretation same for persons with HIV infection
  - Unusual serologic responses may be seen in persons with HIV infection
    - Post-treatment titers that were higher than expected (high serofast) or fluctuated
    - False-negative test results and delayed appearance of seroreactivity
- Clinical picture suggestive of syphilis with nonreactive serologic tests, consider alternative tests such as, biopsy of a lesion, darkfield examination, and PCR of lesion material
- In persons with HIV and neurological symptoms, neurosyphilis should be ruled out

Syphilis Treatment

- Parenteral penicillin G
  - Benzathine PCN G 2.4 million units IM
    - Single dose: primary, secondary, early latent
    - Weekly doses x 3: late latent, latent of unknown duration, tertiary, retreatment
  - Aqueous crystalline penicillin G 3-4 million units IV every 4 hours for 10-14 days: neurosyphilis
    - Persons with HIV infection should be managed the same as HIV-negative persons with neurosyphilis
- PCN allergy
  - Regimens of doxycycline 100 mg orally BID for 14 days and tetracycline 500 mg QID daily for 14 days
  - No alternatives for pregnant women, should be desensitized and treated with PCN G
- Persons with HIV infection and primary or secondary syphilis should be treated same as HIV negative persons

Treatment of sex partners

- Treat all persons having sexual contact within 90 days with a person diagnosed with primary, secondary, or early latent syphilis regardless of test results
- Treat all persons having sexual contact more than 90 days prior with a person diagnosed with primary, secondary, or early latent syphilis if test results not available and follow up unlikely. If tests results negative, do not treat. If test results positive treat according to clinical and serological assessment.

Other Management Considerations

- All patients with syphilis should be tested for HIV
  - If test negative, retest in 3 months
- In patients with symptoms of neurologic or ophthalmic disease
  - CSF analysis
  - Ocular slit-lamp ophthalmologic examination
  - Audiology

Follow-Up

- Repeat RPR at 6 & 12 months
  - Expect 4-fold decrease in titer (15% will not)
  - If not, re-test for HIV
- Treatment failure vs. Reinfection
  - Signs or symptoms that persist or recur
  - Sustained 4-fold increase in titer
  - Re-test for HIV
  - CSF analysis
  - Retreatment: benzathine penicillin G 2.4 million units IM weekly times 3

Follow-up

- Persons with HIV infection
  - Primary or Secondary syphilis
    - Repeat titers at 3, 6, 9, 12, and 24 months
  - Latent syphilis
    - Repeat titers at 6, 12, 18, and 24 months after therapy

Follow-up

- Persons with HIV infection
- Treatment failure
  - Signs or symptoms that persist or recur or fourfold increase or more in titer, manage same as HIV-negative persons

  - CSF examination and retreatment can be considered for persons whose RPR titers do not decrease fourfold within 12–24 months
    - If CSF normal, treat with benzathine penicillin G 2.4 million units IM weekly times 3
    - If titers do not decline despite a negative CSF examination and a repeated course of therapy, the need for additional therapy or repeat CSF examinations is not generally recommended

Diseases Characterized by Urethritis and Cervicitis

- Chlamydia
- Gonorrhea
- Mycoplasma Genitalium

Urethritis

- Urethral inflammation can result from infectious and noninfectious causes
- Symptoms include dysuria, urethral pruritis, mucoid, mucopurulent, or purulent discharge

Chlamydia

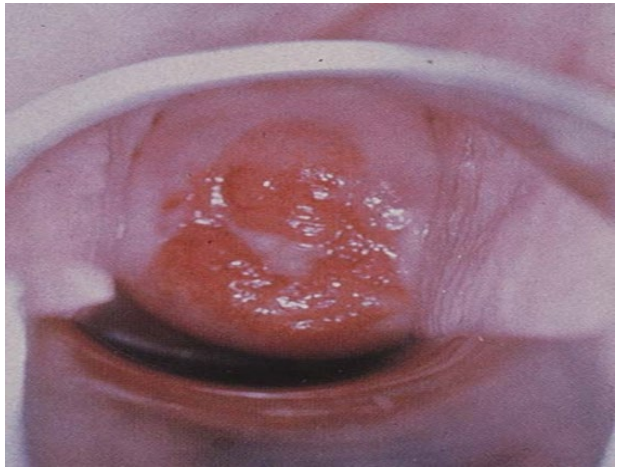
- Most frequently reported disease in US
- Highest incidence in persons ≤ 24 years of age
- Sequelae in women
  - PID
  - Infertility
  - Ectopic pregnancy
- Common for both men and women to be asymptomatic
- Yearly screening
  - Women < 25 years
  - Some older women

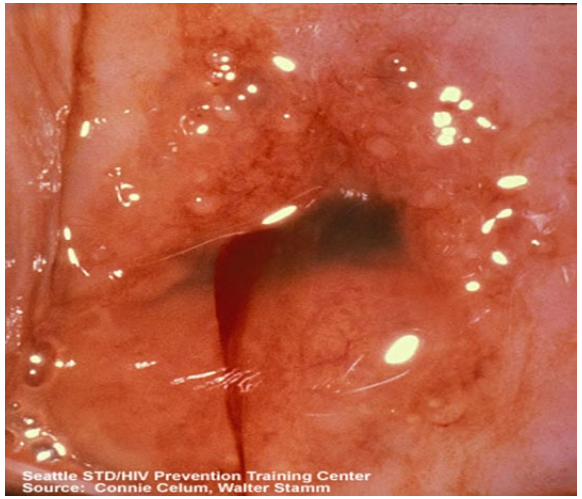
Chlamydia

- Males
  - Most are asymptomatic
- Incubation period 7-10 days
- Urethritis
  - Mucoid or clear penile discharge
  - Dysuria
  - Urethral pruritis

Chlamydia

- Women
  - Most are asymptomatic
- Urethritis
  - Dysuria
  - Urinary frequency
- Cervicitis (more common manifestation)
  - Mucopurulent discharge
  - Spontaneous or easy bleeding





Chlamydia Diagnosis

- Nucleic acid amplification testing (NAAT): most sensitive method
  - FDA-cleared for cervical, urethral, and urine specimens
  - Some labs have validated for use on rectal specimens
  - Oropharyngeal testing not recommended (clinical significance & transmissibility of Chlamydia isolated from oropharynx unclear)

Chlamydia Treatment

Recommended Regimens

- **Azithromycin** 1 g orally in a single dose
  OR
- **Doxycycline** 100 mg orally twice a day for 7 days
- *Alternative Regimens*
- **Erythromycin** base 500 mg orally four times a day for 7 days
  OR
- **Erythromycin** ethylsuccinate 800 mg orally four times a day for 7 days
  OR
- **Levofloxacin** 500 mg orally once daily for 7 days
  OR
- **Ofloxacin** 300 mg orally twice a day for 7 days

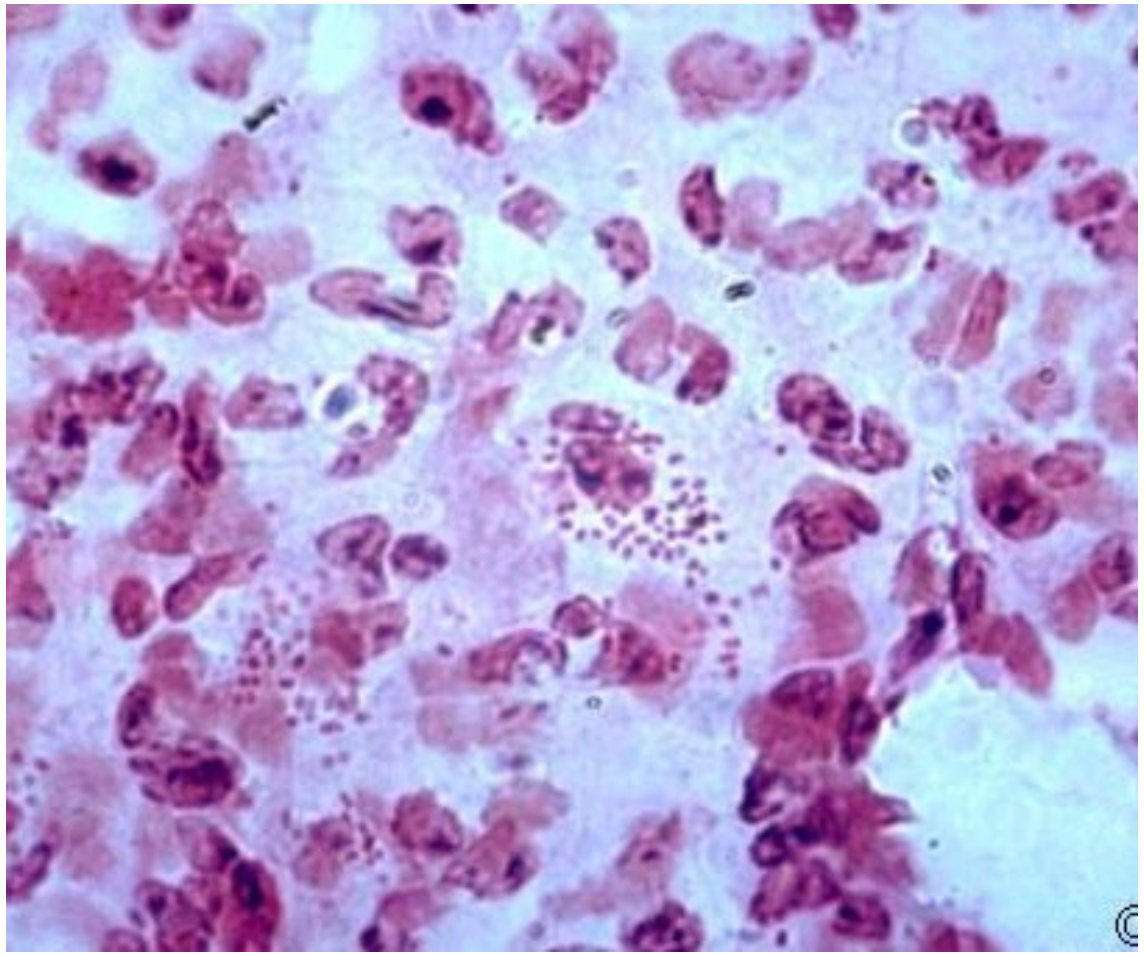
*Persons with HIV infection and Chlamydia should be treated same as HIV negative persons

Follow-up

- Test-of-cure to detect treatment failure (i.e., repeat testing 3–4 weeks after treatment) is not advised if recommended or alterative regimens used
- Retest approximately 3 months after treatment, regardless if sex partners were treated to rule out reinfection

Gonorrhea

- Second most commonly reported STI in the United States
  - 820,000 cases yearly
  - 53% of cases diagnosed in 15 – 24 years old
- *Neisseria gonorrhoeae*
  - Gram-negative, oxidase-positive diplococcus
- Incubation period 2-7 days



Gonorrhea

Males

- Most are symptomatic
- Incubation period 2-5 days
- Purulent or mucopurulent penile discharge

Females

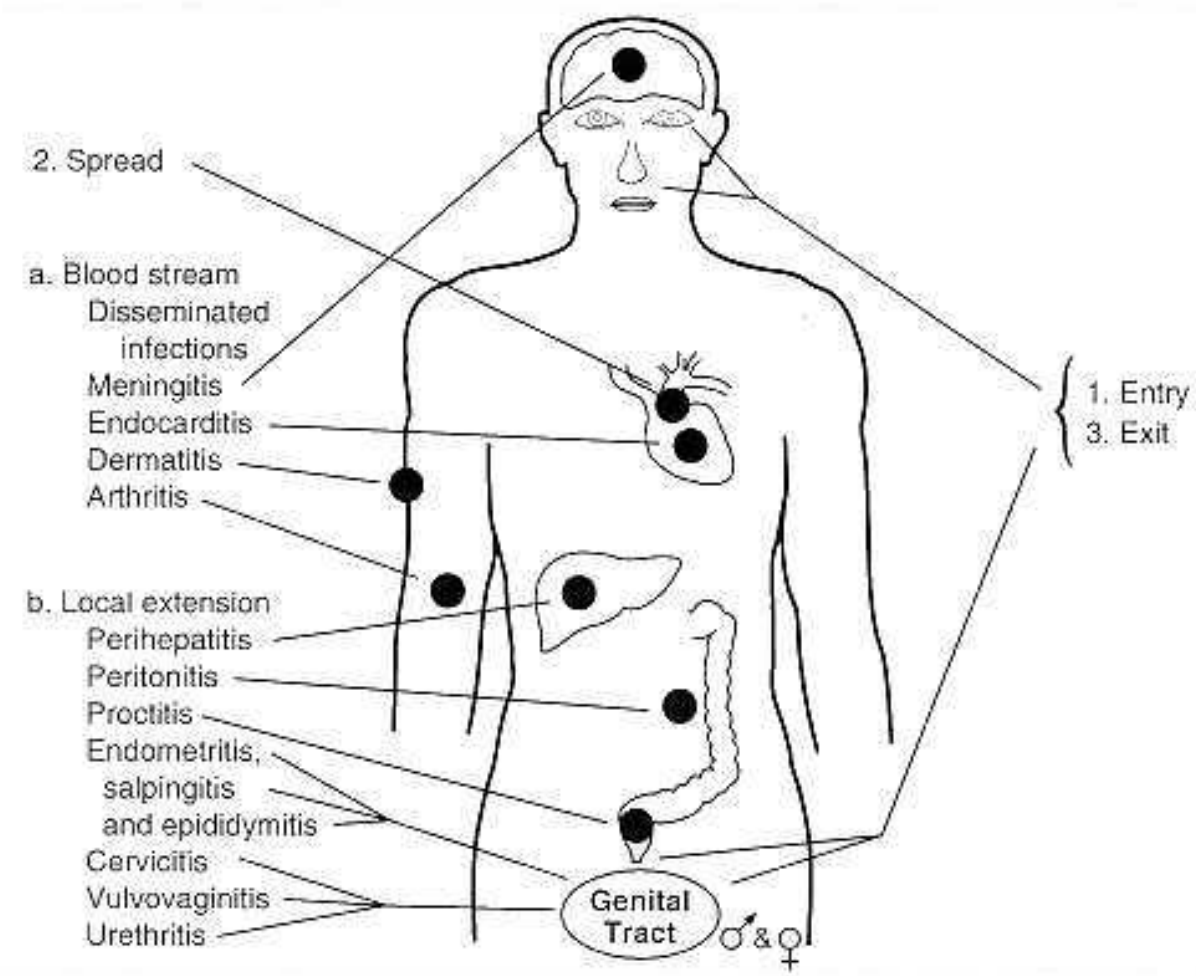
- Most are asymptomatic
- Symptoms within 10 days of exposure
- Late onset of symptoms until complications

Gonorrhea

- Anorectal infection
  - MSM
  - May also be seen in women with/without history of anal intercourse
- Pharyngitis
  - Asymptomatic
  - Screen in high-risk patients
- Conjunctivitis
  - Autoinoculation

Disseminated Gonococcal Infection

- Infrequent
- More common in women
- High index of suspicion: sexually active adolescent with septic arthritis



Disseminated Gonococcal Infection

Wikipedia

Grepmed.com

Gonorrhea Diagnosis

- Culture and NAAT

- Culture
  - Available for rectal, oropharyngeal, and conjunctival specimens
  - Requires endocervical or urethral swab specimens

- Nucleic acid amplification testing (NAAT)
  - Most sensitive method
  - FDA-cleared for cervical, urethral, and urine specimens
  - Some labs have validated for use on rectal, oropharyngeal, and conjunctival specimens

Gonorrhea Treatment

Infections of the Cervix, Urethra, and Rectum

Recommended Regimen

- **Ceftriaxone** 250 mg IM in a single dose
  PLUS
- **Azithromycin** 1g orally in a single dose

*Persons with HIV infection and Gonorrhea should receive same treatment as HIV negative persons

Gonorrhea Treatment

Alternative Regimens

- If ceftriaxone is not available:
- **Cefixime** 400 mg orally in a single dose
  PLUS
- **Azithromycin** 1 g orally in a single dose

Follow-up

- Persons with pharyngeal gonorrhea treated with an alternative regimen should return 14 days after treatment for a test-of cure
- Test-of-cure to detect treatment failure for urogenital or rectal gonorrhea is not advised if recommended or alternative regimen used
- Retest approximately 3 months after treatment, regardless if sex partners were treated to rule out reinfection

Expedited Partner Therapy (EPT)

- Treating sex partners of patients diagnosed with Chlamydia or gonorrhea by providing prescriptions of medications for the patient to take to the partner without the health care provider first examining the partner
- Not permissible in all states
- Permissible in Tennessee for Chlamydia only

Mycoplasma genitalium

Mycoplasma genitalium

- Cause of 15-25% non-GC/non-CT male urethritis
- Often more common than gonorrhea
- Organism grows slowly
  - Culture may take as long as 6 months
- NAAT preferred method of diagnosis (not FDA-approved in United States)
  - Available in some large medical centers and commercial laboratories
- Consider with persistent or recurrent urethritis, cervicitis, PID

Mycoplasma genitalium Treatment

- No cell wall - antibiotics such as PCN and cephalosporins ineffective
- Only 31% cure rate with 7-day doxycycline course
- Single-dose azithromycin, 1 gram, preferred regimen
  - Concern for developing resistance
- Consider moxifloxacin (400 mg daily for 7, 10, 14 days) for treatment failures

*Persons with HIV infection and M. genitalium should be treated same as HIV negative persons

Follow-up

- If validated *M. genitalium* testing is available, persons with persistent urethritis, cervicitis, or PID and persistent detection of *M. genitalium* may be treated with moxifloxacin

- Routine tests-of-cure in asymptomatic persons are not recommended

Diseases Characterized by Vaginal Discharge

- Bacterial Vaginosis (BV)
- Trichomoniasis

Bacterial Vaginosis

Bacterial Vaginosis

- Most common cause of vaginal discharge or odor
- Most women with BV were asymptomatic
- Results from alteration in normal bacterial flora
- Risk factors include multiple partners, new sex partner, douching, lack of condom use, and lack of vaginal lactobacilli

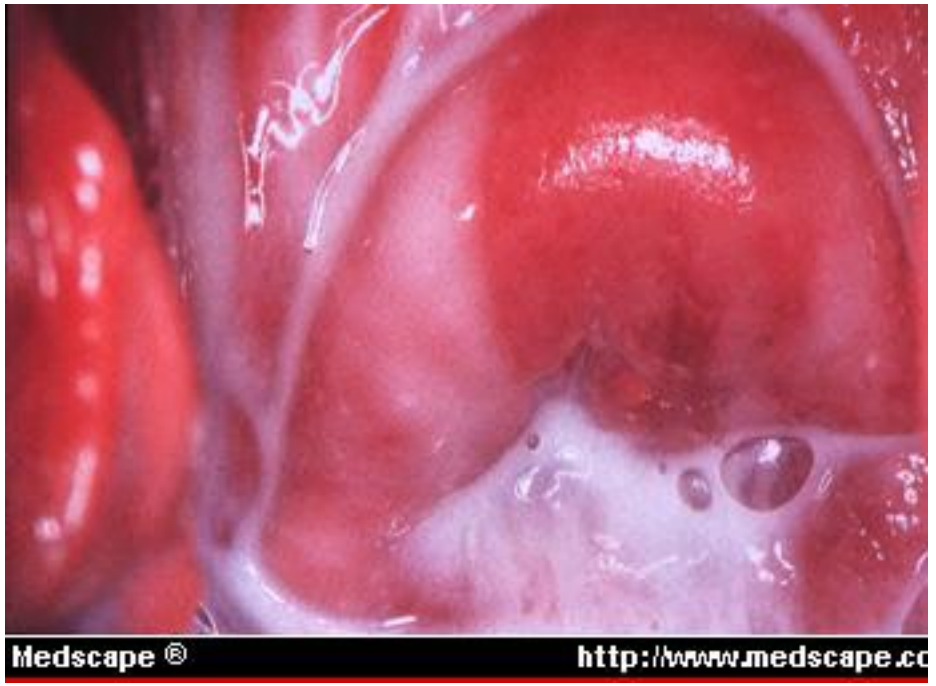
Bacterial Vaginosis

- Women who have never been sexually active are infrequently affected
- Increases risk for other STIs
- Increases the risk for HIV transmission to male sex partners
- Treatment of male sex partners not recommended

Bacterial Vaginosis

Clinical Criteria for Diagnosis

- 3 of the following:
  - Homogenous, thin, white discharge that smoothly coats vaginal walls
  - Clue cells on wet prep
  - Vaginal pH >4.5
  - Positive “whiff test” – fishy odor (before or after addition of 10% KOH)



Bacterial Vaginosis Treatment

Recommended Regimens

- **Metronidazole** 500 mg orally twice a day for 7 days
  OR
- **Metronidazole** gel 0.75%, one full applicator (5 g) intravaginally, once a day for 5 days
  OR
- **Clindamycin** cream 2%, one full applicator (5 g) intravaginally at bedtime for 7 days

Bacterial Vaginosis Treatment

Alternative Regimens

- **Tinidazole** 2 g orally once daily for 2 days
  OR
- **Tinidazole** 1 g orally once daily for 5 days
  OR
- **Clindamycin** 300 mg orally twice daily for 7 days
  OR
- **Clindamycin** ovules 100 mg intravaginally once at bedtime for 3 days*

Bacterial Vaginosis and HIV

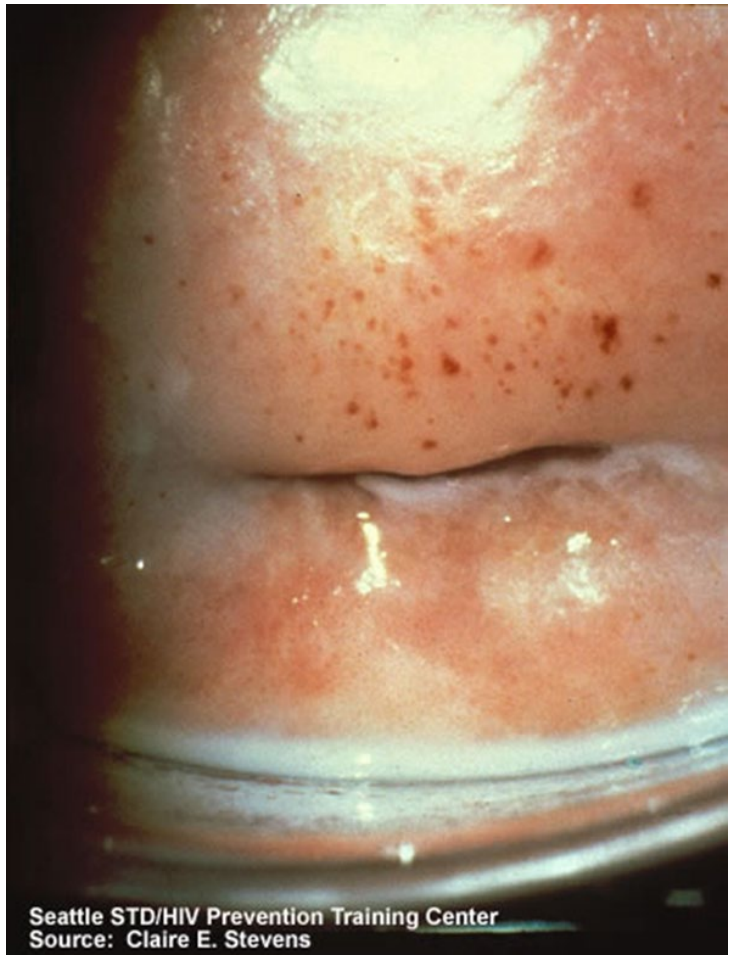
- BV may recur more often in women with HIV infection
- Women with HIV who have BV should receive the same treatment regimen as those who do not have HIV infection
- No follow-up necessary for women with or without HIV if symptoms resolve

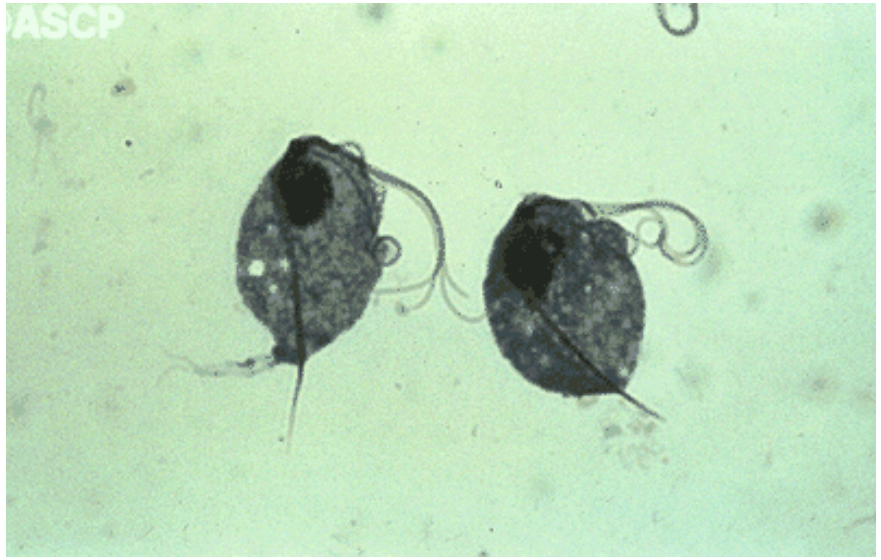
Trichomoniasis

Trichomoniasis

- Protozoan *Trichomonas vaginalis*
- Minimal or no symptoms
- Women
  - Diffuse, malodorous, yellow-green vaginal discharge with vulvar irritation
- Men
  - Urethritis, epididymitis, or prostatitis
- Associated with two- to threefold increased risk for acquiring HIV

Trichomonasis





Trichomonasis Diagnosis

- Wet prep
  - Most common
  - Only 51-65% sensitive in women
  - Even less sensitive in men
- NAAT
  - Very sensitive for women – 3-5x higher yield
- APTIMA *T. vaginalis* assay
  - Vaginal, endocervical, or urine specimens in women
  - Sensitivity 95.3%–100%, specificity 95.2%–100

Trichomonaisis Diagnosis

- Culture
  - Once considered gold standard
  - Vaginal 75-96% sensitive, specificity up to 100%, less sensitive for urine
  - Men urethral swab, urine sediment, or semen
- Cervical cytology
  - Not considered diagnostic
  - False negatives and false positives

Trichomonasis Treatment

Recommended Regimen

- **Metronidazole** 2 g orally in a single dose
  OR
- **Tinidazole** 2 g orally in a single dose
- *Alternative Regimen*
- **Metronidazole** 500 mg orally twice a day for 7 days

* Metronidazole gel not recommended

Follow-Up

- Retest in 3 months following initial treatment
- Testing by nucleic acid amplification can be conducted as soon as 2 weeks after treatment
- Insufficient data on retesting men

Trichomonasis and HIV

- 53% of women with HIV infection are infected with *T. vaginalis*
  - Associated with PID
  - Treatment decreases genital-tract HIV viral load and viral shedding
- Screening at entry to care and annually
- NAAT testing because of higher sensitivity

Trichomoniasis and HIV

Recommended Regimen for Women with HIV Infection

- **Metronidazole** 500 mg orally twice daily for 7 days

- Retest in 3 months following initial treatment

- Use NAAT testing

Thank you for your Attention!