Reproductive Health

Sexually Transmitted Diseases

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CDC Morbidity and Mortality Weekly Report (MMWR)
Sexually Transmitted Diseases Treatment Guidelines, 2010

“These recommendations should be regarded as a source of clinical guidance and not prescriptive standards; health care providers should always consider the clinical circumstances of each person in the context of local disease prevalence” (p1).

www.cdc.gov/std/treatment/2010/default.htm
The “5 P’s” In a Sexual History

1. Partners
   - “Do you have sex with men, women or both? In the past 12 months, how many partners have you had sex with? Is it possible that any of your sex partners had sex with someone else while they were still in a sexual relationship with you?”

2. Prevention of Pregnancy
   - “What are you doing to prevent pregnancy?”

3. Protection from STDs
   - “What do you do to protect yourself from STDs and HIV?”

4. Practices
   - “Do you use condoms never, sometimes or always? Have you had vaginal, anal or oral sex?”

5. Past hx of STDs
   

Pre - Exposure Vaccinations

- Vaccines to prevent cervical precancer & cancer:
  - Cervarix
  - Gardasil also prevents genital warts; for both females and males

- Hepatitis B vaccination recommended for all unvaccinated, uninfected persons being evaluated for an STD

- Hepatitis A and B recommended for:
  - men who have sex with men (MSM)
  - injection-drug users
  - HIV-infected persons uninfected with Hepatis A or B

- In the near future, a vaccine to prevent Herpes type 2?
### Gardasil 3 Dose Series in Females

- **Pre-exposure HPV4 vaccination recommended routinely for all girls starting age 11-12**
- **High efficacy for Gardasil**  
  - >98% efficacy for prevention of HPV 6, 11, 16, 18 related CIN 2/3 (cervical), adenocarcinoma in situ, VIN 2/3 (vulvar) and VaIN 2/3 (vaginal)
- **HPV4 is not a live vaccine but not recommended in pregnancy even though Category B**
- **2008-2009 National Immunization Survey-Teen data**  
  - 40.5% of girls 13-17 yo received >1 HPV dose and 53.3% of those girls completed the series.
  - Below target levels.
  - Provider recommendation is factor most strongly related to HPV vaccine initiation

### HPV Vaccine In Males CDC Recommendations

- **Routine use of HPV4 (Gardasil 3 dose series) in males ages 11 or 12 up to 26**
- **Vaccination at young age < 15**  
  - Higher antibody levels than > 16 year olds
- **HPV cancers in males**  
  - Anal, penile and oropharyngeal caused primarily by HPV 16 and some HPV 18
- **Non-oncogenic HPV 6 and 11 cause > 90% of condylomata and respiratory papillomatosis**
- **Homosexual males at greater risk than heterosexuals**
- **Low rate of adverse rxns from Gardasil**  
  - Injection site rxns, HA, fever
  - ACIP recommends observe x 15 min after injection
Chlamydia

• Most frequently reported infectious disease in US

• Potential sequelae if untreated: PID, ectopic pregnancy and infertility

• Usually asymptomatic or symptoms appear within 3 weeks after exposure

• Annual screening in all sexually active women < 25 yrs by urine testing or swab from endocervix or vagina

• Recommended regimens
  – Azithromycin 1 g po single dose or Doxycycline 100mg po bid x 7 days (not in pregnancy)

• Abstain from intercourse for 7 days after a single dose rx or until completion of 7 day regimen and until sex partner treated

Chlamydia

• Retesting 3 months after diagnosis and treatment of chlamydia is useful to detect repeat infections and can enhance population-based prevention CDC 2010 Guidelines

• Test of Cure
  – Only recommended in pregnancy

• Retesting in the 3rd trimester ~36 weeks
  – Recommended for women treated earlier in pregnancy or who have had multiple sex partners during the pregnancy

• Risks to infant from untreated chlamydia
  – Pneumonia or ophthalmia neonatorum a conjunctivitis that develops 5-12 days after birth and is not effectively treated with topical antibiotic
Gonococcal Infections

• Targeted screening in the US recommended annually
  – All sexually active women < 25 yrs
  – First prenatal visit regardless of age

• Men and women who are gonorrhea +
  – Should also be tested for chlamydia, syphilis and HIV

• Recommended regimen
  – Ceftriaxone 250mg IM single dose or Cefixime 400mg po single
dose (not as effective in treating pharynx infection) plus
  Azithromycin 1 g po single dose or Doxycyline 100mg po bid x 7days (not in pregnancy)

• Test of Cure not indicated
  – However retesting advised in 3 months due to high incidence of reinfection

CDC Guidelines 2010

Disseminated Gonococcal Infection

• Petechial or pustular skin lesions
• Asymmetrical arthralgia
• Tenosynovitis
• Septic arthritis
• Rx
  – Hospitalization for IV or IM
    Ceftriaxone 1g q 24hrs x 24-48 hrs
    after improvement
  – D/c on Cefixime 400mg po bid x 7d

Bacterial Vaginosis (BV)

• Polymicrobial with anaerobic bacteria
• Assoc. with multiple partners, having a new partner, douching, lack of condom use, lack of vaginal lactobacillus, low vitamin D levels
• No routine screening for BV in pregnancy but considered a risk factor for preterm labor, preterm rupture of membranes so treat if symptomatic
• Treatment of male partners not beneficial

Bacterial Vaginosis Treatment

• Recommended regimens
  – Metronidazole 500mg po bid x 7d or Metronidazole gel one applicator per vagina daily for 5d or Clindamycin cream one applicator per vagina daily for 7d
• Alternative regimens
  – Tinidazole 2g po qd x 2 d pr 1g po qd x 5d
  – Clindamycin 300mg po bid x 7d or ovules 100mg intravaginally once at bedtime x 3 d
• Intravaginal lactobacillus formulations being developed
• Multiple recurrences
  – Metronidazole gel twice weekly for 4-6 weeks after treatment with one of above regimens

CDC Treatment Guidelines 2010
Bacterial Vaginosis

• Vaginal pH > 4.5
• Homogeneous thin white discharge that smoothly coats vaginal walls
• Fishy odor before or after addition of KOH = +whiff test
• Clue cells under microscope
  — Clumping of epithelial cells with borders obscured with bacteria

Trichomoniasis “trich”

Women

• Fishy odor discharge is thin greenish-yellow, frothy
• Vulvar irritation
• “Strawberry” cervix may be friable
• Diagnosed via wet prep, pap, or culture

Men

• Harder to diagnose, may be asymptomatic or have urethral burning, itching
• Resolves spontaneously
• Pregnancy
  — May contribute to rupture of membranes, prematurity, low birth weight
Treatment of Trichomoniasis

• Metronidazole
  – 2 gram single oral dose
  – Safe in pregnancy
  – Avoid alcohol for 24 hrs after

• Tinidazole
  – 2 gram single oral dose
  – Effective against metronidazole-resistant infections
  – Safety in pregnancy unknown
  – Avoid alcohol for 72 hrs after

Treat both partners simultaneously

Genital HSV

• Most persons with HSV-2 have never been diagnosed

• Majority of HSV infections are transmitted by persons unaware that they shed the virus!

• Screening for HSV 1 and 2 in the general population is not indicated, but may be useful for those with
  – Multiple partners
  – +HIV
  – Recurrent lesions with neg HSV cultures
  – Desire to confirm a clinical diagnosis
  – History of a partner with genital herpes

• Type specific serologic tests

• HSV 1 and 2 antibodies persist indefinitely

• HSV-1 positive persons still at risk of acquiring HSV-2
Counseling Patients With Genital Herpes

• How to reduce risk of sexual transmission: abstain with uninfected partners when lesions or prodromal symptoms present; latex condoms helpful; Valacyclovir 500mg daily suppressive therapy
• Sexual transmission can occur even when asymptomatic
• Asymptomatic viral shedding is most frequent during 1st year after acquiring HSV
• Dispel misconception that HSV causes cancer
• Advise re suppressive and episodic therapy
• Type-specific serologic testing of asymptomatic partners useful to test if already HSV seropositive or if at risk for acquiring HSV
• When exposed to HIV, HSV-2 + persons are at increased risk of acquiring HIV (HSV suppressive therapy does’t reduce this risk)

HSV in Pregnancy

• Women with genital HSV should inform their OB provider and pediatrician who will care for neonate
• Explain risk of HSV transmission to newborn: 30-50% infection rate if initial HSV outbreak close to delivery but only 1% if recurrent HSV at term or if initial HSV in 1st half of pregnancy
• Offer late 3rd trimester suppressive therapy

www.skinpatientalliance.ca/herpes
### Genital Herpes Rx Regimens  
**CDC 2010 Guidelines**

<table>
<thead>
<tr>
<th>Drug Regimen</th>
<th>1st Episode*</th>
<th>Recurrent episodes</th>
<th>Suppressive Rx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acyclovir</td>
<td>400mg po tid x 7-10d OR 200mg po 5x/dx 7-10d</td>
<td>400mg po tid x 5d OR 800mg po bid x 5d OR 800mg po tid x 2d</td>
<td>400mg po bid</td>
</tr>
<tr>
<td>Famiciclovir</td>
<td>250mg po tid x 7-10d</td>
<td>125mg po bid x 5d OR 1g po bid x 1d OR 500mg x 1, then 250mg bid x 2d</td>
<td>Less effective</td>
</tr>
<tr>
<td>Valacyclovir</td>
<td>1g po bid x 7-10d</td>
<td>500mg po bid x 3d OR 1g po qd x 5d</td>
<td>500mg to 1g po qd</td>
</tr>
</tbody>
</table>

*All patients with 1st episodes of genital herpes should receive antiviral therapy
Topical antiviral medications are not effective/not recommended

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### Male Circumcision in Prevention of HIV/AIDS

- **WHO and United Nations HIV/AIDS program (UNAIDS)** recommend that male circumcision be “scaled up” as an effective intervention for the prevention of heterosexually acquired HIV infection

- Countries with hyper-endemic and generalized HIV epidemics and low prevalence of male circumcision should expand access to safe male circumcision

- These recommendations have not been made in the U.S.
**Partner Management**

- Varies by provider, public health agency and geographic area
- Always encourage patients with STDs to notify their sex partners and urge them to seek medical eval and treatment
  - Ask patients to bring partners with them for a return visit
  - Patient-delivered Partner Therapy (PDPT) is a form of Expedited Partner Therapy (EPT)
  - Partners of infected persons get treated without medical evaluation or prevention counseling
  - [www.cdc.gov/std/ept](http://www.cdc.gov/std/ept) (EPT prohibited in some states)
  - “Any medication or Rx provided for PDPT should be accompanied by treatment instructions, appropriate warnings about taking the medication (pregnancy or allergies), general health counseling and a statement advising that partners seek personal medical evaluation, particularly women with symptoms of STDs or PID” CDC 2010 Guidelines
- Internet notification of partners
- ACOG position statement

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**Case Study AG**

- 22 years old, unmarried female
- Vague complaints of pelvic pain, dyspareunia for several weeks
- Takes a combined birth control pill consistently
- No condom use
- Currently has 2 male sexual partners, history of 12 life partners
- Physical exam
  - NAD, vital signs normal, afebrile
- Pelvic exam findings
  - Cervical motion tenderness, uterine tenderness, adnexal tenderness
  - Normal leukorrhea
  - Wet prep + WBCs, +whiff, + clue cells
Case Study

- What are the differential diagnoses for AG?
- What is the treatment plan?

Pelvic Inflammatory Disease (PID) Organisms

- N. gonorrhoeae
- C. trachomatis
- G. vaginalis
- Haemophilus influenzae
- Enteric gram neg rods
- Streptococcus agalactiae
**PID Diagnosis**

- One or more of the following: cervical motion tenderness, uterine tenderness, adnexal tenderness
  PLUS
- Symptoms of lower genital tract inflammation: leukocytes on wet prep, cervical exudate, or cervical friability
- Other possible sx: fever
- Labs: elevated sedimentation rate, elevated C-reactive protein, + gonorrhea, + chlamydia

**PID Inpatient Treatment**

- Inpatient treatment for severe symptoms especially if high fever or suspected tubo-ovarian abscess; pregnant women should be hospitalized due to risk of preterm labor
  - IV Cefotetan 2g IV q 12 hours or 2g IV q 6 hours PLUS
  - Doxycycline 100mg PO or IV q 12 hours
  - Continue doxy for 14 days PO 100mg bid
- Discharge meds add
  - Metronidazole PO or Clindamycin PO
- Alternative regimen
  - Clindamycin 900mg IV q 8hrs plus
  - Gentamicin loading dose 2mg/kg IV/IM then 1.5mg/kg q 8hrs OR single 3-5mg/kg daily
  - Discharge on PO doxy (above) or Clinda 450mg po qid x 14 d
**PID Outpatient Treatment**

- Mild to moderate severity of symptoms
- Cetriaxone 250mg IM PLUS Doxycycline 100mg po bid x 14d With or Without Metronidazole 500mg po bid x 14d
  
  OR

- Cefoxitin 2g IM, Probenecid 1g po PLUS Doxycycline 100mg po bid x 14d With or Without Metronidazole as above
  
- Clinical improvement should occur within 72hrs
  - If not, consider inpatient treatment

- If diagnosed with GC or CT
  - Do repeat testing in 3-6 months

- Examine and treat male partners
## Table 1. Therapy for Vulvovaginal Infections (Drugs Listed Alphabetically)

<table>
<thead>
<tr>
<th>Indication</th>
<th>Drug</th>
<th>Formulation</th>
<th>Dosage</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncomplicated</td>
<td>Amoxicillin</td>
<td>250mg capsule</td>
<td>500 mg daily</td>
<td>3 days</td>
</tr>
<tr>
<td>Vulvovaginal candidiasis</td>
<td>Clindamycin</td>
<td>1% cream</td>
<td>5 g daily</td>
<td>7 days</td>
</tr>
<tr>
<td>Uncomplicated</td>
<td>Clindamycin</td>
<td>2% cream</td>
<td>5 g daily</td>
<td>3 days</td>
</tr>
<tr>
<td>Teicoplanin 125 mg per day</td>
<td>125 mg oral</td>
<td>5 g daily</td>
<td>1 day</td>
<td></td>
</tr>
<tr>
<td>Spectrally similar organisms</td>
<td>Metronidazole</td>
<td>5 g cream</td>
<td>5 g daily</td>
<td>4 days</td>
</tr>
<tr>
<td>Severe symptoms or findings</td>
<td>Metronidazole</td>
<td>500 mg oral</td>
<td>500 mg twice daily</td>
<td>5 days</td>
</tr>
<tr>
<td>Pregnancy</td>
<td>Metronidazole</td>
<td>500 mg oral</td>
<td>500 mg twice daily</td>
<td>5 days</td>
</tr>
</tbody>
</table>