# Sexually Transmitted Diseases (STD) Treatment Guidelines
## RECOMMENDED TREATMENT FOR STDs IN HIV-INFECTED ADULTS

This table reflects the 2002 CDC STD Treatment Guidelines (and subsequent revisions) and focus on STDs encountered among HIV-infected adults in an outpatient setting. For more complete information refer to http://www.cdc.gov/std or call the STD Program. Clinical and epidemiological services are available through your state or local STD Program. Staff is also available to assist providers with confidential notification of sexual partners of patients infected with STDs and HIV.

| DISEASE | DIAGNOSTIC TEST | RECOMMENDED TREATMENT | ALTERNATIVES |
|---|---|---|---|
| **SYPHILIS (see CDC guidelines for follow-up recommendations)** | | | |
| **PRIMARY, SECONDARY OR EARLY LATENT (< 1 YEAR)** | • Darkfield exam or direct fluorescent antibody test (DFA) of non-oral lesion material or exudates if available<br>• RPR (or VDRL) screening test with confirmatory test if positive (e.g. FTA-ABS or TP-PA) | • Benzathine penicillin G 2.4 million units IM<br>• **Some experts recommend 2.4 million units IM for 3 doses, given 1 week apart** (total 7.2 million units) | **(For penicillin allergic non-pregnant adult patients only)**<br>• Doxycycline 100 mg orally 2 times a day for 14 days ***OR*** ceftriaxone 1 g daily IV or IM for 8-10 days<br>• Azithromycin 2 g orally single dose should be avoided[1] |
| **LATE LATENT (> 1 YEAR) OR LATENT OF UNKNOWN DURATION** | • RPR (or VDRL) screening test with confirmatory test if positive (e.g. FTA-ABS or TP-PA) | • Perform lumbar puncture for CSF examination before treatment; if negative:<br>• Benzathine penicillin G 2.4 million units IM **for 3 does**, 1 week apart (total 7.2 million units) | • Doxycycline 100 mg orally 2 times a day for 28 days **for adults only** |
| **NEUROSYPHILIS** | • Lumbar Puncture | • Aqueous crystalline penicillin G 18 - 24 million units per day, administered as 3-4 million units IV every 4 hours or continuous infusion, for 10-14 days | • Procaine penicillin 2.4 million units IM once daily **plus** probenecid 500 mg orally 4 times a day, both for 10-14 days |
| **PREGNANCY** | • As above according to stage | **Penicillin is the only recommended treatment for syphilis during pregnancy. Women who are allergic should be desensitized and then treated with penicillin. Dosages are the same as in non-pregnant patients for each stage of syphilis.[2]** | |
| **GONOCOCCAL INFECTIONS[3]** | | | |
| **ADULTS**<br>**CERVIX, URETHRA, RECTUM PHARYNX** | • Cervix/urethra: Culture or Nucleic Acid Amplification Test (NAAT)<br>• Rectum/pharynx: Culture NAAT not FDA approved for these sites | **Recommended treatment for men who have sex with men[4] and persons whose GC was acquired in California, Hawaii, Pacific Islands, Asia and areas listed at http://www.cdc.gov/std/gisp:**<br>• Ceftriaxone 125 mg IM. Ceftriaxone is highly effective at all anatomical sites.<br>• Alternative single dose oral regimens include cefixime 400 mg PO (well-studied, not available in 2004; not recommended by CDC for pharyngeal GC) and cefpodoxime 400 mg (recommended in some states, large-scale efficacy studies underway).<br>**Recommended treatment for all others:**<br>• Ciprofloxacin 500 mg PO ***OR*** Ofloxacin 400 mg PO ***OR*** Levofloxacin 250 mg PO | **If allergy:**<br>• Spectinomycin 2 g IM once<br>The above regimen is **not effective to treat pharyngeal gonorrhea**.<br>• Azithromycin 2 gm orally once<br>Preferred alternative for the treatment of pharyngeal gonorrhea |
| **CONJUNCTIVA** | • Culture | • Ceftriaxone 1 g IM once plus lavage the infected eye with saline solution once | |
| **PREGNANCY** | • Culture or NAAT | • Ceftriaxone 125 mg IM once[5] | • Spectinomycin 2 g IM once |
| **CHLAMYDIAL INFECTIONS** | | | |
| **ADULT** | • Cervix/urethra: Culture or NAAT<br>• Rectum/Pharynx: Culture | • Azithromycin 1 g orally single dose ***OR***<br>• Doxycycline 100 mg orally 2 times a day for 7 days | • Erythromycin base 500 mg[6] orally 4 times a day for 7 days ***OR***<br>• Erythromycin ethylsuccinate 800 mg[6] orally 4 times a day for 7 days ***OR***<br>• Ofloxacin[5] 300 mg orally 2 times a day for 7 days ***OR***<br>• Levofloxacin[5] 500 mg orally once a day for 7 days |
| **LYMPHOGRANULOMA VENEREUM (LGV)** | • Complement fixation test for CT (≥ 1:64) or CT microimmuno-fluorescence serologic titer (≥ 1:128)[7] | • Doxycycline 100 mg orally 2 times a day for 21 days | • Erythromycin base 500 mg orally 4 times a day for 21 days |
| **PREGNANCY** | • As above | • Erythromycin base 500 mg orally 4 times a day for 7 days ***OR***<br>• Amoxicillin 500 mg orally 3 times a day for 7 days | • Erythromycin 250 mg orally 4 times a day for 14 days ***OR***<br>• Erythromycin ethylsuccinate 800 mg orally 4 times a day for 7 days (or 400 mg 4 times a day for 14 days) ***OR***<br>• Azithromycin 1 g orally single dose |
| **NONGONOCOCCAL URETHRITIS** | • Confirm urethritis and test for gonorrhea and chlamydia | • Azithromycin 1 g orally single dose ***OR***<br>• Doxycycline 100 mg orally 2 times a day x 7 days | • Erythromycin base 500 mg[6] orally 4 times a day for 7 days ***OR***<br>• Erythromycin ethylsuccinate 800 mg[6] orally 4 times a day for 7 days ***OR***<br>• Ofloxacin[5] 300 mg orally 2 times a day for 7 days ***OR***<br>• Levofloxacin[5] 500 mg orally once a day for 7 days |
| **EPIDIDYMITIS[8]** | • Test for gonorrhea and chlamydia | • Ceftriaxone 250 mg IM single dose **PLUS**<br>• Doxycycline 100 mg orally 2 times a day for 10 days | • Ofloxacin 300 mg orally twice daily for 10 days ***OR*** Levofloxacin 500 mg orally once a day for 10 days |
| **PELVIC INFLAMMATORY DISEASE[9]** (outpatient management)<br>**These regimens to be used with or without metronidazole 500 mg orally twice a day for 14 days** | • Test for gonorrhea and chlamydia | • Ceftriaxone 250 mg IM once ***OR***<br>Cefoxitin 2 g IM once plus probenicid 1 g orally once ***OR***<br>Other third generation cephalosporin<br>**PLUS**<br>• Doxycycline 100 mg orally 2 times a day for 14 days | • Ofloxacin[5,9] 400 mg orally 2 times a day for 14 days ***OR***<br>Levofloxacin[5,9] 500 mg orally once a day for 14 days |
| **PREGNANCY AND PID** | **As above** | **Patients should be hospitalized and treated with the appropriate recommended parenteral IV treatments (see CDC guidelines)** | |

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|---|---|---|---|
| **CHANCROID** | • Culture or PCR of lesion | • Azithromycin 1 g orally single dose ***OR***<br>• Ceftriaxone 250 mg IM single dose ***OR***<br>• Ciprofloxacin[5] 500 mg orally 2 times a day for 3 days ***OR***<br>• Erythromycin base 500 mg orally 3 times a day for 7 days (preferred by some experts if HIV infection) | |
| **HERPES SIMPLEX VIRUS (for non-pregnant adults).** | | See CDC 2002 guidelines for the management of herpes in pregnancy | |
| First clinical episode of genital HSV<br>(No clinical studies to differentiate therapeutic response between HIV infected and non-infected patients) | • Culture or DFA of lesion | • Acyclovir 400 mg orally 3 times a day for 7-10 days ***OR*** 200 mg orally 5 times a day for 7-10 days ***OR***<br>• Valacyclovir 1 g orally 2 times a day for 7-10 days ***OR***<br>• Famciclovir 250 mg orally 3 times a day for 7-10 days | ***For severe cases,*** Acyclovir 5-10 mg/kg IV every 8 hours until healed |
| Episodic Recurrent Infection | • Culture or DFA of lesions<br>• Serologic type-specific G-based assays may be useful with healing lesions or in confirming a clinical diagnosis | • Acyclovir 400 mg orally 3 times a day for 5-10 days ***OR*** 200 mg orally 5 times a day for 5-10 days ***OR***<br>• Famciclovir 500 mg orally 2 times a day for 5-10 days ***OR***<br>• Valacyclovir 1.0 g orally 2 times a day for 5-10 days | |
| Daily Suppressive therapy | • As above | • Acyclovir 400 – 800 mg orally 2 times a day / or 3 times a day ***OR***<br>• Valacyclovir 500 mg orally 2 times a day ***OR***<br>• Famciclovir 500 mg orally 2 times a day | |
| **PEDICULOSIS PUBIS** | • Clinical evidence of *Phthirus pubis* or their nits on visual or microscopic exam | • Permethrin 1% cream rinse applied to affected area and washed off after 10 minutes ***OR***<br>• Lindane[10] 1% shampoo applied for 4 minutes to the affected area then thoroughly washed off ***OR***<br>• Pyrethrins with piperonyl butoxide applied to affected area and washed off after 10 minutes | |
| **SCABIES** | • Clinical features (burrows) and/or demonstration of the sarcoptes mite or eggs on microscopic exam of skin scrapings | • Permethrin 5% cream applied to all areas of the body from the neck down and washed off after 8-14 hours | • Lindane[10] 1% 1 oz of lotion or 30 g of cream applied thinly to all areas of the body and thoroughly washed off after 8 hours ***OR***<br>• Ivermectin[10] 200ug/kg orally, repeated in 2 weeks |
| **BACTERIAL VAGINOSIS (BV)** | • Amsel's Criteria on Wet Prep exam of vaginal secretion<br>• Nugent's Gram Stain Criteria | • Metronidazole[11] 500 mg orally 2 times a day for 7 days ***OR***<br>• Clindamycin cream 2% intravag. at bedtime for 7 days ***OR***<br>• Metronidazole gel 0.75% intravag. once a day for 5 days | • Metronidazole[11] 2 g orally in a single dose ***OR***<br>• Clindamycin 300 mg orally 2 times a day for 7 days ***OR***<br>• Clindamycin ovules 100 g intravag. at bedtime for 3 days |
| **PREGNANCY AND BV[12]** | • As above | • Metronidazole[11] 250 mg orally 3 times a day for 7 days ***OR***<br>• Clindamycin 300 mg orally 2 times a day for 7 days | |
| **TRICHOMONIASIS** | • Vaginal fluid: Wet Prep Exam or Culture | • Metronidazole[11] 2 g orally single dose | • Metronidazole[11] 500 mg orally 2 times a day for 7 days |

| **HUMAN PAPILLOMAVIRUS (HPV) VISIBLE WARTS** | | | | |
|---|---|---|---|---|
| **External** | **Urethral Meatus** | **Vaginal** | **Anal** | **Oral** |
| • **PROVIDER-ADMINISTERED**<br>**Cryotherapy** with liquid nitrogen or cryoprobe. Repeat applications every 1-2 weeks if necessary ***OR***<br>**Trichloroacetic acid (TCA) or bichloroacetic acid (BCA)** 80% -90%. Apply small amount only to warts. Allow to dry. If excess amount applied, powder with talc, baking soda or liquid soap. Repeat weekly if necessary ***OR***<br>**Podophyllin resin 10%-25%[13]** in a compound tincture of benzoin. Allow to air dry. Limit application to < 10 $cm^2$ and to ≤ 0.5 ml. Wash off 1-4 hours after application. Repeat weekly if necessary ***OR***<br>**Surgical Removal**<br><br>• **PATIENT-APPLIED**<br>**Podofilox 0.5% solution or gel[13]**. Apply 2 times a day for 3 days, followed by 4 days of no therapy. This cycle can be repeated as necessary for up to 4 times. Total wart area should not exceed 10 $cm^2$ and total volume applied daily not to exceed 0.5 ml.<br>***OR***<br>**Imiquimod 5% cream[13]**. Apply once daily at bedtime 3 times a week for up to 16 weeks. Wash treatment area with soap and water 6-10 hours after application. | • **Cryotherapy** with liquid nitrogen<br>***OR***<br>• **Podophyllin 10%-25%[13]** in a compound tincture of benzoin. Treatment area must be dry before contact with normal mucosa. Repeat weekly if necessary. | • **Cryotherapy** with liquid nitrogen. Cryoprobe not recommended (risk of perforation and fistula formation)<br>***OR***<br>• **TCA or BCA 80%-90%**. Apply small amount only to warts. If excess amount applied, powder with talc, baking soda or liquid soap. Repeat weekly if necessary. | • **Cryotherapy** with liquid nitrogen<br>***OR***<br>• **TCA or BCA 80%-90%.** Apply small amount only to warts. If excess amount applied, powder with talc, baking soda or liquid soap. Repeat weekly if necessary. | • **Cryotherapy** with liquid nitrogen<br>***OR***<br>• **Surgical removal** |

[1] Treatment failures with azithromycin have been reported in 2003 and are being investigated (MMWR 2004;53:197-8). *T. pallidum* strains resistant to azithromycin have recently been documented (NEJM 2004;351:454-8.). Doxycycline is the preferred alternative. If neither penicillin nor doxycycline can be administered, and azithromycin is considered, providers should contact their state or local STD program and inform patients that cases of resistance have been found and that a close follow-up is essential to ensure successful treatment.
[2] Tetracycline/doxycycline contraindicated; erythromycin not recommended because it does not reliably cure an infected fetus; data insufficient to recommend azithromycin or ceftriaxone.
[3] Treat also for *Chlamydia trachomatis* if not ruled out by a sensitive test.
[4] Increases in fluoroquinolone-resistant *Neisseria gonorrhoeae* among men who have sex with men--United States, 2003, and revised recommendations for gonorrhea treatment, 2004. MMWR Morb Mortal Wkly Rep 2004; 53(16):335-338. .
[5] Quinolones are contraindicated in pregnant women.
[6] If this dose cannot be tolerated, than erythromycin base 250 mg orally or erythromycin ethylsuccinate 400 mg orally 4 times a day for 14 days can be used.
[7] Lymphogranuloma venereum among men who have sex with men- Netherlands, 2003-2004. MMWR 2004:53:985-988. Direct identification of *Chlamydia trachomatis* can be made by culture or other tests. For more information on lab diagnosis see http;://www.cdc.gov/std/lgv-labs.htm. Contact your STD program.
[8] The recommended regimen of ceftriaxone and doxycycline is for epididymitis most likely caused by gonococcal or chlamydial infection. In areas/populations where quinolone-resistant gonorrhea is prevalent (see gonococcal infections), the alternative regimen of ofloxacin or levofloxacin is recommended if epididymitis is most likely caused by enteric Gram-negative organisms.
[9] In areas where quinolone-resistant gonorrhea is prevalent, using a quinolone alone to initiate treatment of PID should be avoided. Whether the management of immunodeficient HIV-infected women with PID requires more intensive treatment has not been determined.
[10] Lindane not recommended for pregnant and lactating women. Ivermectin not recommended for pregnant and lactating women.
[11] Multiple studies and meta-analysis have not demonstrated a consistent association between metronidazole use during pregnancy and teratogenic or mutagenic effects in newborns.
[12] Screening for, and treatment of, BV in pregnant women at high risk for premature delivery is recommended by some experts and should occur at the first prenatal visit. Intravaginal treatment during pregnancy (at high or low risk for premature delivery) not recommended.
[13] Safety during pregnancy **not** established.