

New Gonorrhea Treatment Guidelines in Oregon

Prevalence of fluoroquinolone resistance among *Neisseria gonorrhoea* isolates is increasing in Oregon. * For this reason Oregon Health Services Office of HIV, STD, and TB is **recommending that clinicians no longer use fluoroquinolones as first line therapy for gonorrhea**. Revised treatment guidelines for gonorrhea and chlamydia in Oregon are outlined in the following table.

Oregon Gonorrhea and Chlamydia Treatment Recommendations, 2005^{*}

Disease	Recommended Regimens	Dose/Route	Alternative Regimens
Gonorrhea (Fluoroquinolones are no longer recommended for treatment of gonococcal infections in California because of increasing resistance to this class of drugs. If fluoroquinolones are the only drug available and must be used, test-of-cure after treatment is recommended.)			
Uncomplicated Genito-urinary or Rectal Infections in Adults and Adolescents	<ul style="list-style-type: none"> • Cefixime,^{†,‡} or • Ceftriaxone,[†] plus • A chlamydia recommended regimen listed below 	<ul style="list-style-type: none"> • 400 mg PO • 125 mg IM 	<ul style="list-style-type: none"> • Spectinomycin 2 g IM, or • Azithromycin 2 g PO[¶], or • Cefpodoxime[‡] 400 mg PO • (Additional alternative treatments are listed below.[§])
Pharyngeal Infections	<ul style="list-style-type: none"> • Ceftriaxone,[†] plus • A chlamydia recommended regimen listed above • Azithromycin 	<ul style="list-style-type: none"> • 125 mg IM • 2 g PO 	
Pregnant Women	<ul style="list-style-type: none"> • Ceftriaxone,[†] or • Cefixime,^{†,‡} plus • A chlamydia recommended regimen listed above 	<ul style="list-style-type: none"> • 125 mg IM • 400 mg PO 	<ul style="list-style-type: none"> • Spectinomycin 2 g IM

Chlamydia			
Uncomplicated Infections Adults/Adolescents	<ul style="list-style-type: none"> • Azithromycin, or • Doxycycline[§] 	<ul style="list-style-type: none"> • 1 g PO • 100 mg PO bid x 7 d 	<ul style="list-style-type: none"> • Erythromycin base 500 mg PO qid x 7 • Erythromycin ethylsuccinate 800 mg • Ofloxacin[§] 300 mg PO bid x 7 d, or • Levofloxacin[§] 500 mg PO qd x 7 d
Pregnant Women [¶]	<ul style="list-style-type: none"> • Azithromycin, or • Amoxicillin, or • Erythromycin base 	<ul style="list-style-type: none"> • 1 g PO • 500 mg PO tid x 7 d • 500 mg PO qid x 7 d 	<ul style="list-style-type: none"> • Erythromycin base 250 mg PO qid x 14 d or • Erythromycin ethylsuccinate 800 mg PO qid x 7 d, or • Erythromycin ethylsuccinate 400 mg PO qid x 14 d

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- * Adapted with permission from California DHS HIV/STD Prevention Training Center . Available at http://www.stdhivtraining.org/pdf/CA_TX_Guide_Jan_2005.pdf
- † Cefixime is available in the U.S. only in suspension form (100mg/5cc). It will likely be available again in 400 mg tablets in 2005 or 2006.
- ‡ For patients with significant anaphylaxis-type (IgE-mediated) allergies to penicillin, where the use of cephalosporins is a concern, or patients with allergies to cephalosporins: spectinomycin 2 g IM or azithromycin 2 g po.
- ¶ Recommended dose of 2g is twice that recommended for treatment of Chlamydia (1g), cost is 3–10 times other gonorrhea treatment options and has been associated with increased frequency of adverse gastrointestinal side effects.⁴
- £ Additional alternative antibiotic regimens for treatment of uncomplicated gonorrhea of the cervix, urethra, and rectum include: single-dose injectable cephalosporins (ceftizoxime 500 mg IM, cefoxitin 2 g IM with probenecid 1 g po, or cefotaxime 500 mg IM) or cefuroxime axetil 1 g po.
- § Contraindicated for pregnant and nursing women.
- ¥ Test-of-cure follow-up is recommended in pregnancy.

These recommendations are similar to those established by Washington Department of Health in 2003 and California Department of Health Services in 2002.^{1,2} During 2002 and 2003, Oregon's incidence of gonorrhea was 27 and 29 cases per 100,000 persons, the lowest rates since the 1960's. However, during 2004 incidence increased to 36, and 2005 incidence projects to 43 cases per 100,000 (based on 779 cases during January–June 2005). Since 2002, cases among men who have sex with men (MSM) account for more than half of all male cases.

Since 1993, Centers for Disease Control and Prevention (CDC) has recommended use of fluoroquinolone (i.e., ciprofloxacin, ofloxacin, or levofloxacin) for gonorrhea treatment. However, prevalence of fluoroquinolone-resistant gonorrhea has been increasing in the U.S. since 2001, primarily among MSM, and CDC recommended in 2003 that clinicians no longer use fluoroquinolones as a first-line treatment for gonorrhea in MSM.³ Although available current evidence* indicates that fluoroquinolone resistant gonorrhea is concentrated among MSM, two recent reports of clinical treatment failures in heterosexual men treated with ciprofloxacin and a single fluoroquinolone resistant isolate collected from a female patient during 2005 indicate that fluoroquinolone-resistant gonorrhea is present among heterosexual men and women in Oregon.

Pelvic Inflammatory Disease Treatment Recommendations

For the treatment of pelvic inflammatory disease (PID), CDC guidelines should be followed.⁵ However, if the gonorrhea test is positive in a patient receiving a fluoroquinolone regimen, a test-of-cure should be performed.

* During 2003 4 (3%) of 132 isolates submitted to the Gonococcal Isolates Surveillance Program (GISP) were positive. This increased to 36 (9%) of 382 isolates during 2004.

Test-of-Cure Indications

Obtaining a test-of-cure is important whenever fluoroquinolones are used or when treatment failure is suspected. If clinicians encounter a treatment failure after any of the gonorrhea treatment regimens listed above, in the absence of re-exposure, they need to take whatever steps are necessary to culture the organism. Gonococcal isolates should be sent to local or state public health laboratory for routing to a laboratory capable of testing for antimicrobial resistance in *Neisseria gonorrhoea*.

¹ Washington Department of Health. Available at <http://www.cdc.gov/std/GISP/WAhealthalert.pdf>. Accessed August 5, 2005.

² California Department of Health Services. Available at <http://www.dhs.ca.gov/ps/dcdc/STD/docs/2003%20CA%20GC%20Rx%20guides.pdf>. Accessed August 5, 2005

³Centers for Disease Control and Prevention. Increases in Fluoroquinolone-Resistant *Neisseria gonorrhoeae* Among Men Who Have Sex with Men --- United States, 2003, and Revised Recommendations for Gonorrhea Treatment, 2004. MMWR. 2004;53(16):335–38.

⁴ Centers for Disease Control and Prevention. Oral Alternatives to Cefixime for the Treatment of Uncomplicated *Neisseria gonorrhoeae* Urogenital Infections. Available at <http://www.cdc.gov/std/treatment/cefixime.htm>. Accessed August 8, 2005.

⁵ Centers for Disease Control and Prevention. Sexually transmitted disease treatment guidelines. 2002. MMWR(RR-6);51(48–51)

Table. Estimated Cure Rates and Costs for Gonorrhea Therapy*

Efficacy

Drug	Dose	Urogenital Infection	Pharyngeal Infection	* Cost (Per dose)	Limitations
		Cure Rate (%) 95% CI	Cure Rate (%) 95% CI		
Cefuroxime axetil (Ceftin)	1 g	96.2 (94.8-97.5)	56.9 43.3-70.5	\$15	Cure rate for pharyngeal GC is unacceptably low.
Cefpodoxime proxetil (Vantin)	200 mg	96.5 (94.3-98.5)	78.9 54.4-94.0	\$5	Clinical trials on pharyngeal GC included 19 males.
Cefpodoxime proxetil (Vantin)	400 mg	100.0 (69.1-100)	no published data	\$10	Clinical trial on urogenital GC included 10 patients.
Ceftibuten (Cedax)	400 mg	98.2 (93.6-99.8)	no published data	\$10	Clinical trial on urogenital GC included men only.
Cefdinir (Omnicef)	300-600 mg	no published data	no published data	\$5-10	in vitro data only.
Azithromycin (Zithromax)	2 g	99.2 (97.2-99.9)	100 (82.3-100)	\$50	High frequency of gastrointestinal side effects.

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