

GONOCOCCAL AND CHLAMYDIAL INFECTIONS

I. INTRODUCTION

Neisseria gonorrhoeae and *Chlamydia trachomatis* are the principal bacterial pathogens associated with sexually transmitted pharyngitis, urethritis, cervicitis, proctitis, epididymitis, and pelvic inflammatory disease.

Gonorrhea and chlamydia are common in the United States, and there are a number of reports documenting high prevalence and incidence of infection in the HIV-infected population. Several studies have shown that infection with *N gonorrhoeae* and/or *C trachomatis* may increase both the risk of transmission and acquisition of HIV.¹⁻³

II. SCREENING PATIENTS FOR GONOCOCCAL AND CHLAMYDIAL INFECTIONS

RECOMMENDATIONS:

Clinicians should screen sexually active HIV-infected women under the age of 25 for gonorrhea and chlamydia at baseline and at least annually. Clinicians should screen all sites of possible exposure, including the cervix, rectum, and pharynx. Culture or nucleic acid amplification tests (NAT) should be used to screen for gonorrhea. Immunofluorescence or DNA amplification should be used for chlamydia.

Clinicians should screen women 25 years of age or older for gonorrhea and chlamydia at baseline and at least annually if they have or have had a recent sexually transmitted infection, have multiple sexual partners, have had a new sexual partner, or have a sexual partner with symptoms of an STI.

Clinicians should screen all HIV-infected men with ongoing high-risk sexual behaviors for gonorrhea and chlamydia at baseline and at least annually. Clinicians should screen all sites of possible exposure, including the urethra, rectum, and pharynx.

All sites of possible exposure should be screened.⁴ Presently, nucleic acid amplification tests (NATs) are not approved for use on pharyngeal or rectal specimens, although NATs are more sensitive than culture. When available, culture is preferred because it is effective for all potential sites of infection and permits testing for drug susceptibility. More frequent screening for gonorrhea and chlamydia may be indicated for patients with continued high-risk sexual behavior. Table 1 provides information regarding annual screening of patients for gonococcal and chlamydial infection.

TABLE 1 ANNUAL GONORRHEA AND CHLAMYDIA SCREENING OF ASYMPTOMATIC PATIENTS	
Men who have sex with men	<ul style="list-style-type: none"> • Urine for GC/CT NAT <i>and</i> • Rectal swab for GC culture <i>and</i> • Pharyngeal swab for GC culture
Women	<ul style="list-style-type: none"> • Endocervical swab for GC/CT NAT <i>or</i> • Urine for GC/CT NAT* <i>and</i> • If history of rectal and/or pharyngeal exposure: <ul style="list-style-type: none"> – Rectal swab for GC culture <i>and</i> – Pharyngeal swab for GC culture

CT, *C trachomatis*; GC, gonococcal.

* For women with previous hysterectomy, screening with urine NAT, rather than urethral swab, may be indicated.

III. DIAGNOSIS AND TREATMENT

RECOMMENDATIONS:

Clinicians managing HIV-infected patients with gonococcal and/or chlamydial infections should follow the same diagnosis and treatment recommendations as those for non-HIV-infected patients.

Clinicians should *not* use fluoroquinolones to treat proven or suspected gonococcal infections.

Chlamydial infections should be treated with azithromycin 1 g single dose or doxycycline 100 mg BID for 7 days. Ceftriaxone 250 mg IM is the preferred treatment for uncomplicated gonococcal infections of the cervix, urethra, rectum, and pharynx.

Clinicians should report all cases or suspected cases of resistance to state and local public health authorities.

The incidence of concomitant gonorrhea and chlamydia is high among HIV-infected patients who have a confirmed diagnosis of either infection. However, with the exception of studies of women hospitalized with pelvic inflammatory disease, there have been no formal studies evaluating differences in clinical presentation, diagnosis, or response to treatment of gonococcal or chlamydial infection in HIV-infected patients. In addition, there have been no reports of atypical presentations or failure of standard therapy in HIV-infected patients. Diagnostic tests (see Table 2) and treatment recommendations are identical to those in non-HIV-infected patients.⁵

TABLE 2 DIAGNOSTIC TESTS FOR SYMPTOMATIC PATIENTS	
Men	<ul style="list-style-type: none"> • Urethral gram stain^a <i>and</i> • Urine <i>or</i> urethral swab for GC/CT NAT <i>and</i> • If history of rectal and/or pharyngeal exposure: <ul style="list-style-type: none"> – Rectal swab for GC culture <i>and</i> – Pharyngeal swab for GC culture
Women	<ul style="list-style-type: none"> • Endocervical swab for GC/CT NAT <i>or</i> • Urine for GC/CT NAT <i>and</i> • If history of rectal and/or pharyngeal exposure: <ul style="list-style-type: none"> – Rectal swab for GC culture <i>and</i> – Pharyngeal swab for GC culture
Persistent symptoms	<p><u>Men</u></p> <ul style="list-style-type: none"> • Urethral, rectal, and pharyngeal swabs for GC culture and susceptibility testing <p><u>Women</u></p> <ul style="list-style-type: none"> • Endocervical, rectal, and pharyngeal swabs for GC culture and susceptibility testing
Follow-up after completion of treatment	<p><u>Men with proven CT</u></p> <ul style="list-style-type: none"> • Retest (urine NAT) at 3 months to assess for reinfection <p><u>Men or women with uncomplicated GC</u></p> <ul style="list-style-type: none"> • Test of cure at 2-4 weeks^b for evidence of resistance <i>and</i> • Retest at 3 months (urine NAT for men and endocervical swab for women) to assess for reinfection
Partners	Should be referred for treatment ^c

CT, *C trachomatis*; GC, gonococcal.

^aWBC ≥ 5 per oil immersion field with evidence of gram-negative intracellular diplococci is considered diagnostic for gonococcal urethritis in symptomatic men.

^b Clinicians should perform a follow-up physical examination and a test of cure from gonococcal-infected sites at 2 weeks post-treatment if using culture or at 4 weeks post-treatment if using NAT, regardless of whether or not symptoms have resolved. If the post-treatment NAT is positive, a culture should be performed to assess for resistance.

^c Considerations of HIV exposure in the partner need to be thoroughly examined before clinicians consider prescribing expedited partner therapy. For information regarding expedited partner therapy, see <http://cdc.gov/std/ept>

Chlamydial infections should be treated with azithromycin 1 g single dose or doxycycline 100 mg BID for 7 days. Ceftriaxone 250 mg IM is the preferred treatment for uncomplicated gonococcal infections of the cervix, urethra, rectum, and pharynx.

Fluoroquinolones should no longer be used to treat proven or suspected gonococcal infections because of the significant increases in quinolone-resistant *N gonorrhoeae* (QRNG) in the United States.⁶ For example, New York City Department of Health and Mental Hygiene STI clinics have reported high incidences of QRNG (10% in 2005 vs. 17% in 2006). Clinicians should report all cases or suspected cases of resistance to state and local public health authorities, so that the New York State Department of Health (NYSDOH) and Centers for Disease Control and Prevention (CDC) can closely monitor and appropriately respond to any emerging resistance. More information regarding communicable disease reporting requirements is available at: www.health.ny.gov/professionals/diseases/reporting/communicable

Diagnosis and Treatment of Patients With Penicillin Allergy

RECOMMENDATION:

Clinicians should treat patients with uncomplicated gonococcal infection who have penicillin allergy, and for whom penicillin desensitization is not possible, with 2 g of azithromycin.

For patients with a history of severe penicillin allergy, in whom cephalosporins would also be contraindicated, there is no consensus on management. Therefore, the recommendations in this section are based on expert opinion.

Penicillin desensitization is the ideal approach for patients with severe penicillin allergy. However, this is not practical in many settings, including emergency rooms. Alternative practices include treatment with 2 g of azithromycin for uncomplicated gonococcal infection in patients with a penicillin allergy; however, increasing resistance is of concern if use is widespread. In patients with penicillin allergy, culture for *N gonorrhoeae*, instead of NAT testing, at the patient's initial visit may be preferred because sensitivity testing could then be performed. If results show that the patient's isolate is resistant to azithromycin, then the patient should be asked to return for a change in treatment.

Sensitivity testing can be used to determine whether a gonococcal isolate is sensitive to fluoroquinolones. A fluoroquinolone is an alternative for initial treatment, as long as:

- Culture and sensitivity testing are performed *and*
- Patient contact information is available for follow-up *and*
- Empiric treatment of chlamydia is given as standard of care

Spectinomycin is a theoretical treatment option for these patients. Although spectinomycin is not currently manufactured or sold in the United States, the CDC and the Food and Drug Administration have reported efforts to resume its availability.⁷ Spectinomycin is not considered adequate for the treatment of pharyngeal gonococcal infections.⁶

IV. TREATMENT FOLLOW-UP

RECOMMENDATIONS:

Patients treated for confirmed gonorrhea should receive a follow-up physical examination and a test of cure from gonococcal-infected sites at 2 weeks post-treatment if using culture or at 4 weeks post-treatment if using NAT, regardless of whether or not symptoms have resolved. If the post-treatment NAT is positive, a culture should be performed to assess for resistance.

Clinicians should retest patients treated for confirmed gonorrhea or chlamydial infection at least 3 months after treatment completion for evidence of reinfection.

The NYSDOH recommends that after the completion of treatment for uncomplicated gonorrhea, patients should receive a follow-up physical examination and a test of cure (TOC) from gonococcal-infected sites as described above. In addition, patients treated for gonorrhea should be retested at 3 months for evidence of reinfection. Isolates from treatment failures should be tested for antibiotic resistance. For additional information, see the NYSDOH Bureau of Sexually Transmitted Disease Control Health Alert: Treatment for Fluoroquinolone-resistant (QRNG) Gonorrhea.⁵

The CDC guidelines do not recommend a TOC for patients who have been treated with recommended or alternative regimens for uncomplicated gonorrhea. For additional information, see the CDC's Sexually Transmitted Diseases Treatment Guidelines.⁸

Of note, treatment failures may occur for a variety of reasons:

- 1) Reinfection rates are high: a patient may be reinfected by a new partner or an untreated current partner.
- 2) The treatment of the patient and partner may not have overlapped, thereby allowing the infection to pass back and forth between partners.
- 3) Treatment may fail to eradicate organisms from the rectum or pharynx of the patient or his/her partner. For patients with persistent gonococcal symptoms, additional testing should include *C trachomatis* culture when possible and examination for *Trichomonas vaginalis*.

Key Point:

The majority of infections identified after treatment with one of the recommended regimens result from reinfection rather than treatment failure, demonstrating the importance of retesting for new infection at 3 months after completion.

V. MANAGEMENT OF PARTNERS

RECOMMENDATION:

Clinicians should consider both the HIV exposure and the STI exposure to partners when HIV-infected patients present with a new STI. Clinicians should also assess for the presence of other STIs.

A. Management of HIV Exposure in Partners

RECOMMENDATIONS:

When HIV-infected patients present with a new STI, clinicians should encourage their partner(s) to undergo HIV testing at baseline, 1, 3, and 6 months. In New York State, HIV diagnoses must be confirmed by a Western blot assay.

Clinicians should educate patients to be vigilant for any post-exposure acute HIV symptoms in their partners, such as febrile illness accompanied by rash, lymphadenopathy, myalgias, and/or sore throat. If the partner presents with signs or symptoms of acute HIV seroconversion, a quantitative RNA PCR should be obtained, and consultation with an HIV Specialist should be sought. Positive RNA tests should be confirmed with HIV antibody testing performed within 6 weeks of the RNA test (see [Diagnosis and Management of Acute HIV Infection](#) for more information).

Clinicians should offer assistance with partner notification if needed, or refer patient to other sources for partner notification assistance (CNAP, PNAP).

Presentation of a new STI in HIV-infected patients suggests exposure of HIV to their partners. In this case, offering HIV nPEP to partners is usually not an option because the period prior to STI symptom onset is usually longer than the 36-hour window for initiating HIV nPEP. Therefore, sequential HIV testing of partners for early identification of potential HIV acquisition should be performed. However, if a patient with an HIV exposure does present within 36 hours, evaluation for nPEP should occur (see [HIV Prophylaxis Following Non-Occupational Exposure Including Sexual Assault](#)).

B. Management of Gonococcal and/or Chlamydial Exposure

RECOMMENDATION:

Sex partners of patients with gonococcal and/or chlamydial infections should be treated or referred for treatment if the partner was exposed within 60 days prior to symptom onset.

To prevent serial reinfection and curtail further transmission, sex partners of patients with gonococcal and/or chlamydial infections should be treated or referred for treatment if the partner was exposed within 60 days prior to symptom onset. No data are available regarding the optimal contact interval.

Considerations of HIV exposure in the partner need to be thoroughly examined before clinicians consider prescribing expedited partner therapy. For information regarding expedited partner therapy, see <http://cdc.gov/std/ept>

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