THE CITY OF NEW YORK

DEPARTMENT OF HEALTH AND MENTAL HYGIENE

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2004 ALERT #8 : Fluoroquinolone-resistant gonorrhea, NYC

- **Fluoroquinolone-resistant *Neisseria gonorrhoeae* (QRNG) infections have been identified among patients at NYC Department of Health and Mental Hygiene (NYC DOHMH) Bureau of Sexually Transmitted Disease (BSTD) clinics**
- **Among patients presenting to NYC BSTD clinics, the prevalence of QRNG is highest among men who have sex with men**
- **Fluoroquinolones (ciprofloxacin, ofloxacin, and levofloxacin) should not be used to treat gonorrhea (GC) in men who have sex with men (MSM), or GC acquired in areas of high QRNG prevalence**
- **Providers should avoid using fluoroquinolones when treating other men**
- **Providers should use caution when using fluoroquinolones to treat women for GC**
- **If the use of fluoroquinolones is unavoidable, do not delay treatment; perform culture with antimicrobial susceptibility testing before treatment, OR a test-of-cure after treatment**

Please distribute to colleagues in Adolescent Medicine, Emergency Medicine, Family Practice, Infectious Disease, Internal Medicine, Laboratory Medicine, Obstetrics/Gynecology, Pediatrics, and Urology

April 30, 2004

Dear Colleagues,

In New York City (NYC) in 2003 there were more than 13,000 cases of *Neisseria gonorrhoeae* infection reported to the New York City Department of Health and Mental Hygiene. GC and other sexually transmitted diseases (STD) increase the risk for HIV transmission (1). Both local NYC data and national data indicate increases in the prevalence of fluoroquinolone-resistant *Neisseria gonorrhoeae* (QRNG) (2). Fluoroquinolone antibiotics include ciprofloxacin, ofloxacin, levofloxacin, gatifloxacin, norfloxacin, and lomefloxacin. Data from the US Centers for Disease Control and Prevention (CDC) Gonococcal Isolate Surveillance Project demonstrate a national increase in QRNG, from 0.7% in 2001, to 2.2% in 2002, to 4.2% during the first eight months of 2003. A QRNG prevalence approaching 5% is considered high enough to warrant recommendations for treating GC with non-fluoroquinolone regimens (2). QRNG has been prevalent in other parts of the world for several years.

Detection of QRNG among DOHMH BSTD clinic patients
Nucleic acid amplification tests (NAAT) are used for endocervical and urethral testing in the BSTD clinics. Because GC NAAT have not been FDA-approved for testing pharyngeal and anorectal specimens, culture is routinely performed on pharyngeal and anorectal swab specimens from persons reporting oral or anal sex. Ceftriaxone has been used in the NYC BSTD clinics as first line treatment for GC infection since the 1980s.

The majority of QRNG cases seen in BSTD clinics are among men who have sex with men
Across all ten NYC BSTD clinics, we noted an increasing prevalence of QRNG isolates among culture-confirmed GC infections, from 0.1% in 2001 to 3.0% in 2003[1]. The majority of QRNG infections were among men who have sex with men (MSM).

To gather more information on individuals and their risk behaviors, medical records were abstracted for persons with culture-documented GC at six of the ten BSTD clinics for a seven-month interval (January 1 to July 31, 2003). Among 369 patients with culture-documented GC during that interval, eighteen (5%) were diagnosed with QRNG. Among the 18 QRNG patients, 17 (94%) were male; of these, 76% (13/17) reported sexual contact with another male (MSM). During the 7-month interval, the prevalence of QRNG was 12.5% (14/112) among MSM with culture-documented GC, compared to 1.6% (3/183) among other males and 2.4% (1/42) among women. Because culture is used mainly for pharyngeal and rectal specimens, MSM are probably over represented among men with culture-confirmed GC in BSTD clinics.

Since this analysis, we have begun routine endocervical culture (in women) in addition to routine urethral culture (in men) for GC at one clinic to monitor antimicrobial resistance .

When treating for GC, providers should perform a thorough sexual history, including a travel history to inform clinical management decisions
Before treating a patient for GC or any other STD, providers should take a sexual history to ascertain both the number, and sex, of sex partners over the last year. Providers should also take a travel history to determine whether a patient or his/her sex partners may have acquired GC in areas of the world with high QRNG prevalence. Areas with increased QRNG prevalence include Asia, the Pacific Islands (including Hawaii), California, and other areas, such as England and Wales. A CDC website (http://www.cdc.gov/std/gisp/) will maintain an updated list of places that should be included in a relevant travel history when treating for gonorrhea.

Monitoring antimicrobial resistance among gonococci in New York City
Because of the widespread use of non-culture methods to diagnose *N. gonorrhoeae*, culture and antimicrobial susceptibility data are decreasingly available for GC infections diagnosed among NYC residents. As a result, the number of gonococcal infections which are quinolone-resistant are likely underestimated in most clinical settings. The prevalence of QRNG among patients attending BSTD clinics may not be representative of that among patients seen in other clinical settings in NYC, and MSM may be over represented among culture-confirmed GC cases due to BSTD culturing practices.

Gonorrhea Treatment Recommendations

1. **Directly observed treatment of STDs using an appropriate single dose regimen is the most effective and reliable treatment practice.**

2. **Concerning use of fluoroquinolones to treat GC:**

[1] A single person could contribute multiple isolates

a. **For men who report sex with men (MSM):** *Do not use* fluoroquinolones to treat proven or suspected gonococcal infections in MSM in the absence of test results confirming fluoroquinolone susceptibility, or test-of-cure following treatment.
b. **For infections which may have been acquired in areas of the world with high prevalence of QRNG:** *Do not use* fluoroquinolones to treat gonorrhea that might have been acquired in Asia, the Pacific Islands (including Hawaii), California, England, or Wales, or other areas with increased QRNG prevalence in the absence of test results confirming fluoroquinolone susceptibility, or test-of-cure following treatment.
c. **For other men:** *Avoid using* fluoroquinolone regimens when treating GC in other men in NYC, as a patient's sexual behavior may not be fully known to providers. If treating with a fluoroquinolone, providers should perform a culture with antimicrobial susceptibility testing before treatment, or perform a test-of-cure following treatment.
d. **For women:** *Use caution* when using fluoroquinolones to treat GC in women in NYC. Spread of QRNG to groups beyond MSM is a concern. Test-of-cure is especially important among women; persistent infection may not be recognized because asymptomatic infection is common in women. Untreated GC infection places women at risk for serious sequelae, including pelvic inflammatory disease, ectopic pregnancy, and infertility.

3. Non-fluoroquinolone options for treating GC infections:

a. For uncomplicated infections of the cervix, urethra, and rectum (3):

Ceftriaxone (Rocephin), 125 mg intramuscularly (IM) in a single dose,
OR
Cefixime[1], 400 mg orally in a single dose

Alternative antibiotic regimens for the treatment of uncomplicated gonococcal infections of the cervix, urethra, and rectum include:

Spectinomycin 2 g intramuscularly IM in a single dose,
OR
Azithromycin, 2 g orally in a single dose

The azithromycin regimen is recognized by CDC as option for treating gonorrhea infections but is not recommended because of gastrointestinal distress and cost.

b. For gonococcal infections of the pharynx:

Ceftriaxone (Rocephin), 125 mg intramuscularly (IM) in a single dose,
OR
Cefixime[1], 400 mg orally in a single dose

An alternative antibiotic regimen for treatment of pharyngeal gonococcal is:

Azithromycin, 2 g orally in a single dose

[1] Cefixime 400 mg tablets are not currently available in the United States, however the suspension (100 mg/5cc) is available from Lupin Ltd, (Baltimore, Maryland).

The azithromycin regimen is recognized by CDC as option for treating gonorrhea infections but is not recommended because of gastrointestinal distress and cost.

Spectinomycin has poor penetration of the pharynx and is *not* sufficiently effective to treat pharyngeal gonorrhea

4. If using fluoroquinolones to treat gonococcal infection

A culture with antimicrobial susceptibility testing should be performed before treatment, (but should not delay presumptive treatment) OR a test-of-cure should be performed following treatment. Culture for test-of-cure should be collected 7–10 days after treatment. If test-of-cure by a non-culture test is performed it should be done at least 21 days after treatment.

Patients with symptoms suggesting persistent gonococcal infection following treatment with a fluoroquinolone should have GC culture and susceptibility testing performed to document treatment failure due to resistance, versus reinfection with a fluoroquinolone-sensitive strain by an untreated partner, or partners.

Fluoroquinolone regimens for uncomplicated GC infections of the cervix, urethra, and rectum include: ciprofloxacin 500mg in a single oral dose, or ofloxacin 400mg in a single oral dose, or levofloxacin 250 mg in a single oral dose. Neither ofloxacin nor levofloxacin is appropriate for pharyngeal infections.

5. Co-treatment for Chlamydial Infection

Patients with GC infection are often co-infected with *Chlamydia trachomatis* (CT). When treating for GC infection, patients should also be treated for CT infection if CT infection has not been ruled out by diagnostic testing.

Recommended treatment for chlamydial infections include:

Azithromycin 1 g orally in a single dose;
OR
Doxycycline 100 mg orally twice daily for 7 days.

Directly observed treatment of STD using an appropriate single dose regimen is the most effective and reliable treatment practice.

Reporting QRNG Cases

Although NYC health code mandates reporting of GC cases, antimicrobial susceptibility patterns are not currently required when reporting GC. Therefore, whenever a QRNG isolate is identified, please notify the NYC DOHMH by submitting a Universal Report (URF) form and writing “QRNG” in the area where GC is reported. (URFs can be obtained by calling the NYC DOHMH Provider Access Line at 1-866-NYC-DOH1.) Also, the URF requests that the provider indicate the sexual behavior of the reported case-patient (‘sex of sex partners in past year’). In aggregate, this information can be used to help identify groups with increased risk for disease.

QRNG cases can also be reported by calling the Bureau of STD Control of the NYC DOHMH at 212-788-4423.

Your cooperation in identifying and documenting any cases of quinolone-resistant *Neisseria gonorrhoeae* is greatly appreciated.

Sincerely,

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References

(1) Fleming DT. Wasserheit JN. From epidemiological synergy to public health policy and practice: the contribution of other sexually transmitted diseases to sexual transmission of HIV infection. Sexually Transmitted Infections. 1999. 75(1):3-17.

(2) Centers 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. 53:335-338.

For up-to-date information on QRNG throughout the US, visit http://www.cdc.gov/std/gisp/

(3) Centers for Disease Control and Prevention. Sexually Transmitted Diseases treatment guidelines. 2002. MMWR 220;51 (No. RR-6): 32-34.