



NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Thomas Farley, M.D., M.P.H.
Commissioner

2012 Alert # 1

***Neisseria gonorrhoeae* isolates with reduced susceptibility to cephalosporins**

- 1. *Neisseria gonorrhoeae* (GC) with elevated minimum inhibitory concentrations of oral and injectable cephalosporins have been isolated from New York City residents.**
- 2. Laboratories performing GC culture are urged to perform antibiotic susceptibility testing using ceftriaxone and cefixime.**
- 3. Results of GC antibiotic susceptibility testing must be reported to the Department of Health and Mental Hygiene (DOHMH).**
- 4. GC isolates with reduced susceptibility to cephalosporins must be submitted to the DOHMH Public Health Laboratory.**

Please distribute to all Laboratory Directors, Microbiology, Infectious Disease and Infection Control Personnel.

February 13, 2012

Dear Colleagues,

Neisseria gonorrhoeae (GC) with elevated minimum inhibitory concentrations (MICs) of cephalosporins have been isolated from New York City (NYC) residents. During 2010-2011, there were 29 isolates with elevated MICs of cephalosporins. Cephalosporins are the only class of antibiotics recommended for treating GC.

Cephalosporin treatment failures have not yet been reported in the US, but have been reported in Asia and Europe (1, 2). The Clinical Laboratory Standards Institute (CLSI) specifies MIC breakpoints for cephalosporin susceptibility; MICs corresponding to cephalosporin-intermediate or -resistant GC, however, have not been established, because the relationship between MICs and clinical treatment failure is not defined.

To monitor the emergence of cephalosporin-resistant GC in NYC, laboratories are encouraged to perform antibiotic susceptibility testing on GC isolates using ceftriaxone and cefixime. Ideally, susceptibility testing against cephalosporins should be performed using an E-test, because Kirby-Bauer susceptibility results below the CLSI break points for reduced susceptibility cannot be easily interpreted. Assays for molecular determinants of antibiotic resistance among GC should be interpreted with caution, as the clinical and microbiologic significance of specific mutations has not been established. Laboratories should encourage providers to use specimen collection and transport media which optimize isolation of GC, if present.

Laboratories should continue to test against tetracyclines, because doxycycline may be used in the future as part of a multi-drug regimen to treat GC, and should test against one fluoroquinolone. Laboratories may discontinue testing for beta-lactamase and testing against penicillins and spectinomycin, as these antibiotics are no longer used to treat GC.

Laboratories performing antibiotic susceptibility testing on GC isolates or DNA are required to report all results to the DOHMH (3), and must submit any isolates with reduced susceptibility to cephalosporins to the DOHMH Public Health Laboratory (4). In addition, we request laboratories submit GC isolates with MICs of cefixime of ≥ 0.250 ug/mL or of ceftriaxone of ≥ 0.125 ug/mL to the PHL so that further testing can be performed.

GC case rates are increasing in NYC, especially among black non-Hispanic teens (male and female) and black non-Hispanic young adult men. In monitoring GC susceptibility, fluoroquinolone resistance in NYC emerged first among men who have sex with men; cephalosporin resistance may also emerge first in that population. Pharyngeal and anorectal infections are common among men who have sex with men with GC (5), and for that reason, laboratories should provide access to GC testing for extra-genital specimens. Laboratories not providing extra-genital GC testing should consider adopting culture so as to facilitate diagnosis of GC at extra-genital sites, or should undertake the validation studies needed to perform extra-genital nucleic acid amplification testing for GC.

In summary, laboratories are reminded of the following reporting and submission requirements:

REPORT the following to the DOHMH

- All GC antibiotic susceptibility results via the Electronic Clinical Laboratory Reporting System (ECLRS). For each isolate, report each drug tested, with method of testing, quantitative result, and units of measurement.
- Any unusual isolates, or suspected cases of treatment failure (contact Dr. Julia Schillinger at (347) 396-7296, or email jschilli@health.nyc.gov)

For technical assistance with reporting antibiotic susceptibility test results, please contact your laboratory's electronic reporting coordinator, or email: nycECLRS@health.nyc.gov

SUBMIT to the NYC DOHMH PHL all GC isolates with:

- Minimum inhibitory concentration (MIC) of cefixime of ≥ 0.25 ug/mL or
- Minimum inhibitory concentration (MIC) of ceftriaxone of ≥ 0.125 ug/mL

To alert the DOHMH Public Health laboratory of a submitted isolate, please contact Lillian Lee, MS in the Microbiology Section (212-447-6783).

For guidance on performing validation studies on extra-genital GC nucleic acid amplification testing:

Please refer to the New York State Clinical Laboratory Evaluation Program requirements for test validation: <http://www.wadsworth.org/labcert/TestApproval/index.htm>

Sincerely,

Julia A. Schillinger

Julia A. Schillinger, MD, MSc

Director of Epidemiology, Research and Surveillance

Bureau of Sexually Transmitted Disease Control and Prevention

Susan Blank

Susan Blank, MD, MPH

Assistant Commissioner

Bureau of Sexually Transmitted Disease Control and Prevention

Jennifer L. Rakeman

Jennifer L. Rakeman, Ph.D.

Associate Director

Public Health Laboratory, Microbiology Section

References

1. Unemo M, Golparian D, Syversen G, et al. Two cases of verified clinical failures using internationally recommended first-line cefixime for gonorrhoeae treatment, Norway, 2010. *Eurosurveillance* 2010;15:19721--3.
2. Ohnishi M, Saika T, Hoshina S, et al. Ceftriaxone-resistant *Neisseria gonorrhoeae*, Japan. *Emerg Infect Dis* 2011;17:148--9.
3. New York City Health Code, codified at 24 RCNY Section 13.O3 and 11.O3
4. New York State Department of Health and New York City Department of Health and Mental Hygiene 2010 Laboratory Reporting and Specimen Submission Requirements for Communicable Diseases.
(<http://www.wadsworth.org/labcert/regaffairs/clinical/commdiseaseguide.pdf>)
5. Kent C, Chaw J, Wong W, et al. Prevalence of rectal, urethral, and pharyngeal chlamydia and gonorrhea detected in 2 clinical settings among men who have sex with men: San Francisco, California, 2003. *Clin Infect Dis*. 2005;41(1):67-74.