New guidelines for management of *N. gonorrhoeae* in the context of evolving susceptibility patterns

Over the past 30 years we have observed the successive loss of penicillin, tetracycline, and fluoroquinolone antibiotics to reliably treat *Neisseria gonorrhoeae* due to drug resistance.[1] Data from BC and elsewhere globally now warn against further impending gonococcal resistance to first-line treatments of cefixime and ceftriaxone.[2-4] Notably, rising minimum inhibitory concentrations (MIC)—the laboratory measure used to determine the likely effectiveness of an antimicrobial agent to clear infection—for cefixime and ceftriaxone have, to date, been more commonly observed among gay men and other men who have sex with men (MSM).[3] In 2009 the first high-level ceftriaxone-resistant (MIC 2μg/mL) and cefixime-resistant (MIC 8μg/mL) gonococcal isolate was identified in Japan.[4] Although no cases of cephalosporin resistance have been documented in BC as of January 2012, we have an opportunity to stave off its emergence with timely adjustments to treatment regimens. In this context, the Public Health Agency of Canada is recommending immediate changes to treatment and testing protocols for *N. gonorrhoeae* as outlined below.

Fundamental to the revised guidelines are two principles: higher doses and co-treatment with another antibiotic class.

- First-line treatment for all gonorrhea infections in MSM and for pharyngeal infection in all patients regardless of gender or sexual orientation is now ceftriaxone 250 mg IM (single dose). Cefixime 800 mg PO is an alternative treatment for patients who do not want an injection.
- For all other uncomplicated gonorrhea cases, or suspected cases, first-line treatment remains cefixime PO; however, the recommended (single) dose is doubled from 400 mg to 800 mg.
- Given both the high rate of chlamydial coinfection and the risk of multidrug resistance as highlighted above, co-treatment with azithromycin 1 g PO (single dose) is recommended for all gonorrhea infections treated with a cephalosporin. Doxycycline is no longer preferred for co-treatment of gonorrhea due to established tetracycline resistance in BC.[2]

In order to aid the management of individual gonococcal cases and inform public health surveillance of drug resistance, *N. gonorrhoeae* cultures and susceptibility testing should be used in the following circumstances:

- Among MSM, cultures are recommended in symptomatic patients *prior* to treatment. Nucleic acid amplification testing should continue to be used to screen asymptomatic individuals.
- Test of cure at 7 to 30 days post-treatment with appropriate sample for gonococcal culture is recommended for all cases with pharyngeal infection, with persistent symptoms, receiving a regimen other than the preferred treatment, or linked to a case of resistance/treatment failure and treated with that same antibiotic.

Of these changes in guidance, the most likely to cause concern is the recommended use of IM treatment for MSM and pharyngeal infections. The BC Centre for Disease Control has consulted with numerous practitioners working in the STI field, and in particular with clinicians seeing a high volume of MSM patients, to determine the clinical implications of these recommendations. While some challenges are anticipated, all stakeholders are concerned foremost with ensuring the best possible care and treatment.

Updates to the *Canadian Guidelines on Sexually Transmitted Infections* (www.phac-aspc.gc.ca/std-mts/sti-its/index-eng.php) and College of Registered Nurses of BC decision support tools (www.crnbc.ca/standards/certifiedpractice/pages/stis.aspx) are underway and will be posted shortly. The BCCDC, in partnership with the BC Public Health Microbiology & Reference Laboratory, will continue to monitor trends in antimicrobial susceptibility of *N. gonorrhoeae*. For questions or further information, contact Clinical Prevention Services at BCCDC: 604 707-5603 (nurse line), or 604 707-5606 (clinic physician). The threat of diminishing treatment options for *N. gonorrhoeae* underscores the need for comprehensive prevention and control measures; this shift in treatment practice is thus also a reminder of the importance of supporting notification of all partners of patients diagnosed with gonorrhea to ensure prompt testing and treatment.

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