

Emerging Threat of Antibiotic-Resistant Gonorrhea Demands Response

The problem of antibiotic-resistant infections has garnered increasing attention in recent years, and in the reproductive health arena, that threat has taken the form of antibiotic-resistant strains of gonorrhea. To meet that threat, it is crucial to step up research into the development of new treatment and testing options as well as better prevention technologies. In the meantime, the promotion of correct and consistent condom use is key.

With an estimated 820,000 cases annually, gonorrhea is one of the most common STIs in the United States.¹ Gonorrhea infections disproportionately affect marginalized populations in the United States—for instance, the gonorrhea rate for female African-American teenagers is 15 times the rate of their white peers.² When left untreated, gonorrhea infections can cause serious health problems, such as reproductive tract inflammation that can cause pain and infertility in both women and men, infections in newborns that can cause blindness, systemic illness and increased likelihood of HIV infection.

In recent years, both the Centers for Disease Control and Prevention (CDC) and the World Health Organization (WHO) have released reports on antibiotic resistance.^{3,4} Both publications single out gonorrhea as a critical threat to public health due to the waning number of antibiotics that can effectively treat it. Since the 1940s, when sulfonamides and penicillin were first used to treat gonorrheal infections, the

bacteria has reliably developed resistance to all antibiotics used against it, including those two original drugs and several more recently developed ones (fluoroquinolones, tetracycline and oral cephalosporins). Improper and excessive use of antibiotics and the ability of gonorrhea to adapt to treatment have led to the rise of antibiotic resistance. The CDC estimates that 30% of gonorrhea infections in the United States demonstrate some type of antibiotic resistance.³

Currently, the CDC recommends only ceftriaxone, an injectable drug, in conjunction with azithromycin or doxycycline as a first-line treatment for gonorrhea in the United States. In July 2013, findings were released showing that two antibiotic regimens using gentamicin and azithromycin were effective at treating gonorrhea; however, these regimens have not yet been incorporated into treatment guidelines.⁵ While these regimens may stave off the threat of untreatable gonorrhea for a time, it is likely that gonorrhea will develop resistance to these drugs as well.

In order to ensure that gonorrhea does not become an untreatable infection, the CDC notes that development of new antibiotics and new diagnostic tests is critical. Currently, few promising antibiotics are in the pipeline for development at a time when antibiotic resistance is increasing globally, a situation that must be rectified.⁴ Moreover, most gonorrhea in the United States is diagnosed via the use

of nucleic acid amplification tests. These tests are practical in many settings, but do not provide same-visit results and cannot test gonorrhea strains for antibiotic resistance. New rapid diagnostic tests for gonorrhea could improve treatment provision and possibly develop a mechanism for testing for antibiotic resistance.

Additionally, new prevention technologies are another avenue to prevent the spread of antibiotic-resistant gonorrhea, as fewer infections decrease the need for and use of antibiotics. Investments in technologies such as microbicides could potentially have a significant public health impact by reducing gonorrhea infections and associated antibiotic treatment.

Moreover, the CDC affirms condom use as key to fighting antibiotic-resistant gonorrhea, because it is an existing technology highly effective at preventing the acquisition of STIs and is widely available. The vast majority of gonorrhea infections in the United States occur in the 15–24 age-group, a cohort also at risk for a number of other STIs as well as unintended pregnancy. Sex education programs and health providers should ensure that consistent and correct condom use is emphasized for this age-group. Insurance coverage for condoms could also help facilitate their use (see “Beyond Contraception: The Overlooked Reproductive Health Benefits of Health Reform’s Preventive Services Requirement,” Fall 2012).
—*Andrea Rowan*

REFERENCES

1. Centers for Disease Control and Prevention (CDC), Gonorrhea—CDC fact sheet (detailed version), 2014, <<http://www.cdc.gov/std/gonorrhea/STDFact-gonorrhea-detailed.htm>>, accessed May 23, 2014.
2. Division of STD Prevention, *Sexually Transmitted Disease Surveillance 2012*, Atlanta: CDC, 2014, <<http://www.cdc.gov/std/stats12/Surv2012.pdf>>, accessed May 23, 2014.
3. CDC, *Antibiotic Resistance Threats in the United States, 2013*, Atlanta: CDC, 2013, <<http://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf>>, accessed May 23, 2014.
4. World Health Organization (WHO), *Antimicrobial Resistance: Global Report on Surveillance, 2014*, Geneva: WHO, 2014, <http://apps.who.int/iris/bitstream/10665/112642/1/9789241564748_eng.pdf>, accessed May 23, 2014.
5. CDC, Two new promising treatment regimens for gonorrhea, news release, Jul. 15, 2013, <<http://www.cdc.gov/nchhstp/newsroom/2013/gonorrhea-treatment-trial-pressrelease.html>>, accessed May 23, 2014.