



## Changing trends in gonococcal infections-shift to MSM: Emerging resistances

### Editorial

Gonococcal infections are a major part of sexually transmitted infections among MSM. The rising trend of gonococcal infections in male is alarming and screening of antibiotic resistance is important to treat them. The objective is to isolate gonococci and detect the resistance of gonococci by phenotypic methods from patients attending venereology department. All the patients with cervical discharge or urethral discharge attending venereology department were screened by grams stain and culture was done on Thayer Martin medium. Antibiotic resistance was detected by disc diffusion method as per CLSI guidelines.

A total of 50 gonococcal isolate were identified from males with urethral discharge. None were isolated from females. Out of 50 isolates 60% (30) were B-lactamase producers and resistance to penicillin and 34% (17) to tetracycline. 64% (32) of isolates had developed chromosomal resistance to Ciprofloxacin and 12% (6) were resistance to Azithromycin. 4% (2) of the isolate was resistant to Cephalosporins. One isolate was resistant to four drugs.

The isolation of gonococci from male has been increasing along with resistance to penicillins, fluoroquinolone and tetracycline. Resistances to Cephalosporins are beginning to appear. Emergence of multidrug resistance makes treatment of gonococcal infections a challenge. Hence it is mandatory to screen for resistance and treat the infections so as to prevent spread of infections especially in male with multiple sex partners all of whose identity may not be known to treat the partner as well.

Gonorrhea treatment has been complicated by antimicrobial resistance in *Neisseria gonorrhoeae*. Gonococcal fluoroquinolone resistance emerged more rapidly among men who have sex with men (MSM) than among men who have sex exclusively with women (MSW).

Primary outcomes included percentage of isolates exhibiting resistance or elevated MICs, and adjusted odds ratios for resistance or elevated MICs among isolates from MSM compared to isolates from MSW. Sentinel surveillance might not be representative of all patients with gonorrhea. HIV status, travel history, and antimicrobial

use data were missing for some patients. MSM are vulnerable to the emerging threat of multidrug-resistant *N. gonorrhoeae*. Because antimicrobial susceptibility testing is not routinely performed in clinical practice, clinicians should monitor for treatment failures among MSM diagnosed with gonorrhea. Strengthened prevention strategies for MSM and new antimicrobial treatment options are needed.

We used data from the Gonococcal Isolate Surveillance Project (GISP), a national sentinel surveillance system that includes participating sexually transmitted disease (STD) clinics in US cities, reference laboratories, and the CDC. GISP was established in 1986 to monitor national trends in gonococcal antimicrobial susceptibilities. During 2005–2010, clinics in 30 cities participated in GISP (Figure). Each month, *N. gonorrhoeae* urethral isolates were collected from the first 25 men with symptomatic gonococcal urethritis attending participating STD clinics in each city and the isolates were submitted to reference laboratories for antimicrobial susceptibility testing. Specified epidemiological data elements (see Statistical Analysis section below) were abstracted from STD clinic notes. Data collection methods varied according to local clinic practices. As a disease control and surveillance activity, GISP was determined to be a non-research public health activity by CDC. Gonorrhea is a notifiable infection and health departments have authority to collect and transmit to CDC de-identified epidemiological data on patients with gonorrhea to assist with disease control. Antimicrobial and epidemiologic data from GISP are de-identified prior to transmission to CDC. Partner identification and notification are conducted as per local STD public health program policies. At the clinic laboratories, the isolates were sub-cultured on supplemented chocolate medium and frozen in trypticase soy broth with 20% glycerol. Isolates were shipped monthly to a participating reference laboratory where they were tested for  $\beta$ -lactamase production and susceptibility by MICs to azithromycin, penicillin, tetracycline, ciprofloxacin, spectinomycin, cefixime, and ceftriaxone using the agar-dilution technique. Standardized bacterial suspensions were inoculated on Difco GC base medium supplemented with 1% IsoVitalax (Becton-Dickinson, Sparks, Maryland). Cefixime susceptibility testing was halted in 2007 due to lack of availability of cefixime in the United States and restarted in 2009. Control *N. gonorrhoeae* strains with known MICs of a variety of antimicrobials were included with each susceptibility run to ensure accuracy of the data. Twice yearly, CDC provided a panel of unidentified strains to each reference laboratory for testing; results were compared to assure inter-laboratory consistency.