

LETTER

High prevalence of quinolone resistance in *Neisseria gonorrhoeae* in coastal Kenya

Untreated or inadequately treated gonorrhoea is associated with significant morbidity and may act as a co-factor in HIV transmission. The WHO currently recommends treatment of gonorrhoea with quinolone, oral cefixime, intramuscular ceftriaxone or spectinomycin. In Kenya, syndromic treatment of male dysuria or discharge includes presumptive treatment for gonorrhoea with quinolone and *Chlamydia trachomatis* with doxycycline. Gonorrhoea is highly prevalent among high-risk men who have sex with men (MSM) in coastal Kenya, and many cases are asymptomatic.¹ High-risk MSM report male and female partners and most of them participate in transactional sex.

We assessed the prevalence of antimicrobial resistance in *Neisseria gonorrhoeae* isolated from high-risk men and women who are enrolled in a cohort study. Consecutive samples were collected for culture from participants presenting with clinical features of urethritis, proctitis or cervicitis over a 4-month period. Of 26 participants, 17 (16 men and 1 woman) had one sample each which was culture positive for *N gonorrhoeae*. Eight participants (47%) reported transactional sex and six (35%) were HIV infected. Twelve men (75%) reported sex with both men and women.

The minimum inhibitory concentration for ciprofloxacin was measured using an E-test strip. The prevalence of resistance to ciprofloxacin was 71% (12/17) (95% CI 44% to 90%). Using a disc diffusion technique, the prevalence of resistance to penicillin,

tetracycline and ceftriaxone was found to be 82% (14/17) (95% CI 56% to 96%), 100% (17/17) and 0% (0/17) respectively.

Six participants (35%) had a second symptomatic episode of culture-positive *N gonorrhoeae* at a median of 23.5 days (95% CI 18.8 to 82.3) after directly observed treatment with cefixime, which we suspect may be due to re-infection resulting from a low rate of partner treatment.

We report a remarkably high prevalence of quinolone resistance in gonorrhoea isolates from symptomatic high-risk men and women in coastal Kenya, suggesting the need to review local syndromic treatment algorithms. Potential limitations of this study include selection bias, small sample size and the possibility that isolates may have been obtained from an isolated sexual network.

However, our data support that from western Kenya,² coastal Kenya (Scott McClelland, personal communication) and Nairobi (Joshua Kimani, personal communication) reporting quinolone resistance levels above the 5% threshold considered acceptable by WHO. The emergence of quinolone resistance in gonococcal isolates surveyed by four separate research programmes highlights the importance of antimicrobial surveillance and suggests the need for revision of national guidelines in Kenya.

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Competing interests None.

Patient consent Obtained.

Ethics approval This study was conducted with the approval of the National Ethical Review Committee of the Kenya Medical Research Institute.

Contributors SD and EJS were primary investigators of this study, and wrote the first draft of the report. SMw, BM and SM established *N gonorrhoeae* isolation. ANT, MM, LW and ADS contributed to study design. SMG helped write and edit the letter. All authors contributed to the final version of the letter.

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