

Conclusion From these epidemiological data there is no evidence that MSM with HIV are at greater risk of DS/AMR NG compared to those without HIV. Whole genome sequencing will assist further investigations to explore relatedness of isolates and understand whether distinct populations of NG are spread more efficiently within sexual networks of HIV-positive MSM.

012.4 PREVALENCE OF *MYCOPLASMA GENITALIUM* AND MACROLIDE RESISTANCE IN ASYMPTOMATIC MEN WHO HAVE SEX WITH MEN (MSM) ATTENDING A SEXUAL HEALTH CENTRE

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Introduction There are limited data on the prevalence of *M. genitalium* and macrolide resistance in asymptomatic MSM. Due to limited availability, testing for *M. genitalium* has generally been for symptomatic patients, such as men with non-gonococcal urethritis (NGU) and proctitis. Recent data from Melbourne Sexual Health Centre (MSHC) show MSM are over-represented among men with *M. genitalium* urethritis and that macrolide resistant *M. genitalium* is almost twice as common among MSM, as among heterosexual men (76% vs 39%). In order to inform practice guidelines we undertook a screening study in asymptomatic MSM, to obtain accurate prevalence and resistance estimates.

Methods One thousand consecutive consenting MSM attending MSHC without symptoms of NGU or proctitis, not known to be contacts of MG, are tested and given a short questionnaire on behavioural risk factors and recent antimicrobial therapy. First pass urine and an anorectal swab are tested by polymerase chain reaction (ResistancePlus MG test, SpeeDx, Australia) for the presence of *M. genitalium* and for macrolide resistance mutations (MRM).

Results From 23 August to 15 December 2016, 401/1000 (40%) MSM have been recruited. *M. genitalium* was detected in 30 of 401 MSM [prevalence 7.5% (95% confidence interval (CI): 5.1%, 10.5%); 20 rectal [rectal prevalence 5.0% (95%CI: 3.1%, 7.6%)] and ten urethral infections [urethral prevalence 2.5% (95%CI: 1.2%, 4.5%)]. MRM were detected in 25 of 30 infections [83.3% (95%CI: 65.3%, 94.4%)]. MRM were detected in 18/20 rectal [90% (95%CI: 68.3%, 98.8%)] and 7/10 urethral [70% (95%CI: 34.8%, 93.3%)] infections. Estimates will be updated in June 2017.

Conclusion MSM without urethral and rectal symptoms attending a sexual health centre in Melbourne have a high prevalence of *M. genitalium*, and over 80% have macrolide resistance mutations. Rectal infections are twice as common as urethral. To our knowledge this study will provide the largest urethral and rectal estimates of *M. genitalium* infection and macrolide resistance in MSM and will inform future screening guidelines.

012.5 FACTORS ASSOCIATED WITH ANTIMICROBIAL RESISTANT GONORRHOEA INFECTIONS IN MEN WHO HAVE SEX WITH MEN: CASE-CONTROL STUDY

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Introduction Strategies to identify antimicrobial resistance (AMR) and improve antibiotic stewardship to control the spread of AMR in *Neisseria gonorrhoeae* (NG) are urgently needed. As part of a project to develop a point-of-care (POC) test for AMR in NG, we investigated factors that could help identify infections due to antibiotic resistant NG.

Methods We enrolled men who have sex with men (MSM) at sexual health centres in Zurich and Bern, Switzerland, from May 2015 to June 2016. All had samples taken for NG detection from urethra, rectum and pharynx. In culture positive specimens we obtained minimum inhibitory concentrations (MICs) using Etest for ciprofloxacin, ceftriaxone, cefixime and spectinomycin (EUCAST AMR breakpoints) and azithromycin (EuroGASP, >2 mg/L). We collected clinical data and patients completed an online questionnaire. We compared cases (positive NG culture and AMR) with controls (NG and no AMR) with odds ratios (OR) and 95% confidence intervals (CI). We used multivariable logistic regression in MSM with complete data for all included variables.

Results Of 230 MSM enrolled, 117 had a positive NG culture. There were 46 (39%) cases with resistant NG (ciprofloxacin, n=45, azithromycin, n=1) and 71 controls. Clinical findings did not differ between cases and controls. Cases were more likely than controls to have had sex outside Switzerland in the previous 3 months (OR 2.2, 95% CI 1.0–4.7, p=0.05), to have received oral sex (OR 5.6, 95% CI 0.7–46.8, p=0.08) and to have concurrent partnerships (OR 2.2, 95% CI 0.8–6.5, p=0.11). In multivariable analysis (39 cases, 54 controls), the association with sex abroad remained (OR 2.0, 95% CI 0.9–4.8, p=0.10), controlling for concurrency.

Conclusion In this population of MSM in Switzerland, AMR in NG might be more common in MSM who have sex abroad and who receive oral sex, possibly from asymptomatic pharyngeal NG. No clinical factors distinguished AMR from non-AMR NG infections in MSM. Strategies such as development of POC tests that detect AMR are needed to conserve last-line antibiotic treatment for NG.

012.6 QUALITY ASSESSMENT OF THE ENHANCED GONOCOCCAL ANTIMICROBIAL SURVEILLANCE PROGRAM IN THAILAND, 2015–2016

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Introduction Antimicrobial resistant *Neisseria gonorrhoea* (NG) is important to monitor as a potential global public health threat. The Thailand Enhanced Gonococcal Antimicrobial Surveillance Programme (EGASP) was started in November 2015 as a collaboration between the Thailand Ministry of Public Health, the US Centres for Disease Control and Prevention and the World Health Organisation. As a part of this surveillance activity, Thailand conducted an internal quality assessment (QA) of clinical and laboratory data in order to improve surveillance data quality.

Methods EGASP Thailand occurs in 2 sentinel sites: Bangrak Hospital and Silom Community Clinic at Tropical Medicine. Men with symptoms had demographic and clinical data collected as well as a urethral specimen collected for NG culture. A random selection of 10% of EGASP IDs were sampled from November 2015 to June 2016. We assessed clinical and laboratory findings using a standardised review tool that compared the EGASP database to source documents. We describe key findings from the review activities.

Results Overall, 699 specimens were collected for EGASP and 70 (10%) EGASP IDs were randomly sampled by SQL command for review. Results from the quality review included: differences in laboratory findings (6%), differences in interpretation of the clinical abstraction tool between sentinel sites (10%), missing data in the EGASP database after chart abstraction and laboratory testing (14%), differences in the recording of clinical data (19%), and differences in the recording and tracking of laboratory variables (47%). As a result of this evaluation, staff updated missing data on records sampled, conducted an overall refresher training for staff and established a new laboratory tracking process.

Conclusion EGASP Thailand is the first coordinated global project to conduct comprehensive surveillance for NG resistance from symptomatic men. An internal QA helped direct efforts to improve surveillance. Ongoing NG surveillance and periodic quality assessments help ensure high quality surveillance data.

Oral Presentation Session 13

Biomedical and Systems Biology

013.1 SURVEY OF ANTIMICROBIAL RESISTANCE IN CLINICAL *NEISSERIA GONORRHOEAE* ISOLATED OVER FOUR YEARS IN NAIROBI – KENYA

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Introduction Systematic antimicrobial resistance (AMR) surveillance of *N. gonorrhoea* (GC) from local to global level are being intensified to inform and design a monitoring system for its control. High-level resistance to previously recommended quinolones is widespread and decreased susceptibility to the extended-spectrum (third-generation) cephalosporin has

been report. The Gonococcus antimicrobial surveillance program (GASP) in Kenya and the region carried out a study to determine the frequency and diversity of antimicrobial resistance of GC isolates from a Sex Workers Outreach Program (SWOP) Clinic in Nairobi over a period of 4 years.

Methods The study tested 238 GC isolates from participants presenting with cervical/vaginal discharge. Samples collected were inoculated directly on modified Thayer martin media (MTM), transported to GASP Laboratories at KAVI-Institute of Clinical Research for processing by standard bacteriological procedures. Antibiotic susceptibility testing was performed using diffusion gradient method. The strains were defined as susceptible, intermediate and resistant using E-test as guided by WHO, all the findings were validated at WHO Collaborating Centre for Gonorrhoea and other STIs, Örebro University Hospital in Sweden.

Results GC isolates, 41 in 2012, 119 in 2013, 24 in 2014 and 54 in 2015 showed 100% susceptibility to cefixime, ceftriaxone and spectinomycin in four years with a mean susceptibility of 82%, 37.7%, 19.5%, 1.6% and 0% for azithromycin, erythromycin, ciprofloxacin, penicillin and tetracycline respectively. Over the period ciprofloxacin showed a rise in resistance from 56% in 2012, 58.8% in 2013, 66.7% in 2014 to 68.5% in 2015.

Conclusion Spectinomycin, cefixime, ceftriaxone, azithromycin are useful drugs, while Ciprofloxacin the most prescribed antibiotic is no longer reliable for treatment of GC in the region. Continued surveillance will enable the public health managers to modify the national treatment guidelines. Worsening GC drug resistance will compromise effective treatment and decrease disease control efforts.

013.2 MOLECULAR EPIDEMIOLOGY IN RELATION TO AZITHROMYCIN RESISTANCE IN *NEISSERIA GONORRHOEAE* ISOLATES FROM AMSTERDAM, THE NETHERLANDS, BETWEEN 2008 AND 2015 – A CASE-CONTROL STUDY

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Neisseria gonorrhoeae resistance to ceftriaxone and azithromycin increases, which threatens the recommended dual therapy based on these antimicrobials. We used molecular epidemiology to identify *N. gonorrhoeae* clusters, and associations with azithromycin resistance in Amsterdam, the Netherlands. *N. gonorrhoeae* isolates were selected from patients visiting the Amsterdam Sexually Transmitted Infections Clinic, from January 2008 through September 2015. We included all azithromycin resistant isolates (minimum inhibitory concentration [MIC] ≥ 2.0 mg/L), and frequency matched susceptible controls (MIC ≤ 0.25 mg/L). All isolates were tested using 23S rRNA sequencing, *N. gonorrhoeae* multiantigen sequence typing (NG-MAST), and multilocus variable-number of tandem repeat analysis (NG-MLVA). A hierarchical cluster analysis of NG-MLVA

Correction: *Quality assessment of the enhanced gonococcal antimicrobial surveillance program in Thailand, 2015–2016*

Weston E, Lertpruek S, Tongtoyai J. Quality assessment of the enhanced gonococcal antimicrobial surveillance program in Thailand, 2015–2016. *Sex Transm Infect* 2017;93:A28–9. doi: 10.1136/sextrans-2017-053264.71. The authors have requested a correction to the author list and affiliations for their abstract. While E Weston did indeed present this at ISSTD in Rio last year, she did so in place of her Thai colleagues who were unable to be there. They noticed an error in the published book of the author list and the correct author list should be as follows: Siritrapanan M^{1,2}, Lertpruek S³, Tongtoyai J³, Cherdtrakulkiat T³, Buasakul P^{1,2}, Sukwicha W³, Chonwattana W³, Weston E⁴, Dunne EF^{3,5}, Sirivongrangsarn P²

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