

### 235. Macrolide Resistance in *Mycoplasma genitalium* in Singapore

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**Session:** 46. Clinical: Sexually Transmitted Infections

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**Background.** *Mycoplasma genitalium* was first reported as a cause of non-gonococcal urethritis in 1980. It has progressed from being an 'emerging' sexually transmitted infection (STI) to an accepted STI. Prevalence of infection has been reported as the Netherlands 4.5%, Sweden 6.3%, UK 1.2% and France 4%. *M. genitalium* has the smallest known bacterial genome and was the second bacterial genome fully sequenced. It has minimal requirements and is said to approach the minimum possible for a living cell. It is extremely fastidious; only a few strains have been cultured worldwide. Diagnosis relies on direct detection. It does not have a cell wall so it is not susceptible to antibiotics such as penicillins and cephalosporins. Therapy depends on fluoroquinolones and macrolides but resistance to macrolides has been widely reported: 13% France, 18% Sweden, 40% UK, Australia and Denmark, 100% Greenland, 30% Japan.

**Methods.** Ethics approval was granted. DNA extracts left over after routine clinical diagnostics at the Department of STI Control (DSC) Clinic, Kelantan Lane, Singapore were harvested. DNA had been extracted on a Cobas 4800 instrument (Roche) from urine and urethral swabs collected for testing for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG). A 2-plex real-time PCR assay targeting the *phdD* and *mgpB* genes was used to screen for *M. genitalium*. Samples were deemed positive if both targets were detected. If only one target was detected, the sample was retested; if reactive in either target upon retest, the sample was considered positive for *M. genitalium*. Positive DNA preps were then screened for macrolide resistance mutations after Sanger sequencing of the 23S rRNA gene.

**Results.** 368 anonymised DNA elutes from 254 urines and 114 urethral swabs were collected between May and July 2016. One hundred eighty-four were CT/NG positive and 184 were CT/NG negative. Sixteen (4.3%) were positive for *M. genitalium*. Four (25%) of these 16 samples contained macrolide resistance associated mutations; A2058T (x2), A2058G (x1), and A2059G (x1).

**Conclusion.** *M. genitalium* was detected in 4.3% of samples. Macrolide resistance mutations were detected in 25%, similar to international rates. Some guidelines recommend testing for resistance to guide therapy and to perform a test of cure.

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### 236. Optimizing Screening for Sexually Transmitted Infections in Men Using Self-Collected Swabs — A Systematic Review

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**Background.** Sexually transmitted infection (STI) rates are increasing in the US while funding for prevention and treatment programs has declined. Self-collection testing for STI detection in men may provide an acceptable, easy, rapid, and potentially cost-effective method for increasing diagnosis and treatment of STIs. The purpose of this study was to systematically review articles assessing self-collection of anal, oral, or genital tests among adult men for STI detection and/or human papillomavirus (HPV)-related dysplasia.

**Methods.** We searched for English-language articles involving self-collection tests for STI detection among men aged  $\geq 18$  years using the following databases: MEDLINE, EMBASE, CINAHL, and the Cochrane Central Register of Controlled Trials. Three coders used a screening and data abstraction form to record each study's design, participant demographics, intervention, and primary outcome. The self-collection devices, targeted micro-organisms, and self-collection acceptability measures were also recorded. All studies were double-coded to determine final inclusion in the review.

**Results.** Self-collection methods were highly sensitive and comparable to clinician-collection for detection of multiple STI pathogens but were of less adequate quality for anorectal cytology. Self-collection was highly acceptable.

**Conclusion.** Limitations of this systematic review include the fact that studies were small, heterogeneous, and used designs providing lower levels of evidence. Nevertheless, self-collection methods were shown to be a viable option for STI testing in adult men based on their high feasibility, acceptability, and validity. Implementation of self-collection procedures in STI testing venues should be performed to expand opportunities for STI detection and treatment.

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### 237. Comparative *In Vitro* Activity of Ciprofloxacin and Sitafoxacin Against *Neisseria gonorrhoeae*

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**Background.** Most of *Neisseria gonorrhoeae* strains isolated from Thai patients are resistant to ciprofloxacin and ciprofloxacin is no longer recommended for therapy of gonococcal infection in Thailand. Sitafoxacin is a new generation of fluoroquinolones that contains *in vitro* activities against many bacteria that are resistant to ciprofloxacin. Sitafoxacin has a high concentration in urine. The objective of the study was to determine *in vitro* activity of sitafloxacin against ciprofloxacin-resistant *N. gonorrhoeae*.

**Methods.** Antimicrobial susceptibility tests for 52 strains of *Neisseria gonorrhoeae* isolated from patients attended Bangrak Hospital in Bangkok were performed. The tested antibiotics were ceftriaxone, cefixime, ciprofloxacin, and sitafloxacin. The minimum inhibitory concentrations (MICs) and inhibition zone diameters were determined by standard agar dilution and disk diffusion method, respectively, according to the Clinical and Laboratory Standards Institute (CLSI) 2013.

**Results.** All 52 *N. gonorrhoeae* isolates were susceptible to ceftriaxone (MIC < 0.025 mg/l, zone diameter > 35mm) and cefixime (MIC < 0.025 mg/l, zone diameter > 31mm). All *N. gonorrhoeae* isolates were resistant to ciprofloxacin (MIC > 1 mg/l, zone diameter < 27 mm). The inhibition zone diameters of sitafloxacin (5 microgram disk) against 52 isolates of *N. gonorrhoeae* were > 41 mm in 35 isolates (67%) and between 28 and 40 mm in 17 isolates (33%). If the cut-off value of inhibition zone diameter of resistance to ciprofloxacin (<27 mm) is applied, no isolates of *N. gonorrhoeae* is considered to be resistant to sitafloxacin.

**Conclusion.** Sitafoxacin seems to be active against ciprofloxacin-resistant *N. gonorrhoeae*. A clinical study on therapy of gonococcal urethritis due to ciprofloxacin-resistant *N. gonorrhoeae* should be considered.

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### 238. Alcohol Misuse and Associated Risk Factors Across a Shipboard Deployment Among Active Duty US Navy and Marine Corps Personnel

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**Background.** Alcohol misuse rates are elevated in the US military. Relevant longitudinal data are rare in deployed shipboard personnel. We examined the prevalence of hazardous and dependent alcohol misuse at 3 months prior to (T1), during (T2), and 3 months following (T3) deployment among shipboard US Navy and Marine Corps personnel.

**Methods.** Data were collected from 11 local ships. Participants voluntarily completed anonymous surveys, including demographics, Alcohol Use Disorders Identification Test-Consumption (AUDIT-C), drug use, sexually transmitted infection (STI), and sexual risk behavior at T1, T2, and T3. Participants reporting age, gender, and  $\geq 1$  AUDIT-C response were included in the analysis. AUDIT-C scoring criteria were  $\geq 3$  for women and  $\geq 4$  for men (hazardous) and  $\geq 8$  (dependent). Data were analyzed using SAS software version 9.3. Proportions of alcohol misuse by time point were reported. Generalized regression model analyses assessed effects of main exposures after adjusting for demographic characteristics (statistical significance of  $P < 0.05$ ). Generalized estimating equations were used when longitudinal data were included. Models included the longitudinal data's interaction with time.

**Results.** Participants in the analyses were: T1 ( $n = 2,593$ ), T2 ( $n = 2,010$ ), and T3 ( $n = 1,556$ ). For T1, T2, and T3, respectively, 38.9, 39.4, and 42.4% screened positive for hazardous and 14.6, 12, and 10.8% for dependent alcohol misuse. Among those aged <21 years, 43.9, 49.3, and 35.4% screened positive for alcohol misuse at T1, T2, and T3, respectively. Longitudinal analysis showed those who screened positive for alcohol misuse were more likely to report an STI diagnosis (OR 2.4; 95% CI 1.44–4.01), exchange or receive money or goods for sex (OR 3.2; 95% CI 2.01–4.94), and use prescription or non-prescription drugs before sex (OR 2.1; 95% CI 1.64–2.61) than those who did not screen positive, after adjusting for other variables.

**Conclusion.** Alcohol misuse was associated with STIs and sexual risk behaviors across deployment. Improved screening and intervention for individuals who misuse alcohol are needed among deploying shipboard personnel, which may result in a reduction of sexual risk-taking.

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### 239. Extragenital Gonorrhea and Chlamydia Testing Among Women Reporting Extragenital Exposure at an Urban STD Clinic: Is It Worth the Cost?

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