P3.282 MULTI-ANTIGEN SEQUENCE TYPES (NG-MAST) AND ANTIMICROBIAL SUSCEPTIBILITIES ON *NEISSERIA GONORRHOEAE* ISOLATED IN CANADA, 2010–2011

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Background *Neisseria gonorrhoeae* have acquired resistance to many antibiotics and have developed decreasing susceptibilities to 3rd generation cephalosporins.

Method NG-MAST sequence types and minimum inhibitory concentration (MICs) by agar dilution were determined for each *N. gonorrhoeae* isolate collected by Canadian provincial public health laboratories and submitted to the National Microbiology Laboratory between 2010–2011 (N = 2391). Isolates are submitted to the NML only when the provincial laboratories identify resistance to at least one antibiotic or if the provincial laboratories do not conduct any antimicrobial susceptibility testing. MIC interpretations were based on the criteria of the Clinical Laboratory Standards Institute (CLSI) and the World Health Organization (WHO) criteria for decreased susceptibility to cephalosporins.

Results Among all the isolates tested in Canada during 2010–2011, 23.5% (1489/6330) were resistant to penicillin, 31.8% (2014/6330) to tetracycline, 28.9% (1828/6330) to erythromycin, 32.4% (2051/6330) to ciprofloxacin and 0.8% (50/6330) to azithromycin. Based on the WHO guidelines for decreased susceptibility to cefixime MIC ≥ 0.25 mg/L and decreased susceptibility to ceftriaxone MIC ≥ 0.125 mg/L, 3.3% (98/2970) of isolates had decreased susceptibility to cefixime in 2010. This number rose to 4.2% (140/3360) in 2011. Ceftriaxone MICs decreased slightly from 7.2% (218/2970) of isolates with decreased susceptibility in 2010 to 6.2% (208/3360) isolates with decreased susceptibility in 2011. In 2010, 249 STs were identified: the most common STs were ST1407, ST3150 and ST3158 at 13.3%, 11.3% and 9.0% respectively. In 2011, 238 STs were identified: the most common STs were ST1407, ST3307 and ST3550 at 15.3%, 9.3% and 5.9% respectively.

Conclusions Detecting changing antibiotic susceptibilities of *N. gonorrhoeae* isolates in Canada has resulted in the modification of treatment guidelines. Canada's most prevalent NG-MAST type, ST1407 is internationally reported and is of particular interest as it is responsible for cefixime and ceftriaxone treatment failures.

P3.283 TRENDS AND ASSOCIATIONS OF NEISSERIA GONORRHOEAE INFECTION IN MEN AND WOMEN WITH GENITAL DISCHARGE SYNDROMES IN JOHANNESBURG, SOUTH AFRICA

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Background Annual STI aetiological surveys undertaken at a primary healthcare facility in Johannesburg, South Africa, each year have determined the prevalence of gonorrhoea amongst men with male urethral discharge syndrome (MUDS) and women with vaginal discharge syndrome (VDS). We investigated associations between *Neisseria gonorrhoeae* infection and the demographic, clinical, microbiological and behavioural characteristics of these patients.

Methods During six annual surveys (2007–2012), 1,218 MUDS and 1,232 VDS cases were consecutively recruited. Aetiology was determined using nucleic acid amplification assays (*N. gonorrhoeae*, *Chlamydia trachomatis, Trichomonas vaginalis*, *Mycoplasma genitalium*), microscopy of vaginal smears (bacterial vaginosis, *Candida*) and serology (syphilis, HSV-2, HIV). Chi-squared tests and logistic regression analyses were used to identify predictors of *N. gonorrhoeae* infection.

Results There were no significant trends in the prevalence of gonorrhoea among MUDS and VDS patients. Overall, 908 (74.6%) men and 156 (12.7%) women were *N. gonorrhoeae* positive, with the highest prevalence observed in men aged 30–34 years (79.1%) and women aged 18–19 years (19.2%). *N. gonorrhoeae* was detected more often in MUDS patients co-infected with HIV (aOR 2.25, 95% CI, 1.59–3.17) but less often among men with co-existent *C. trachomatis* (aOR 0.36, 95% CI 0.26–0.49), *T. vaginalis* (aOR 0.29, 95% CI 0.17–0.50) and *M. genitalium* infection (aOR 0.15. 95% CI 0.10 – 0.22). In contrast, the presence of *N. gonorrhoeae* infection in women with VDS was higher in younger women (aOR 0.72, 95% CI 0.63–0.83) and women co-infected with *C. trachomatis* (aOR 2.23, 95% CI 1.50–3.31).

Conclusion We have demonstrated an important association between gonococcal urethral discharge and HIV co-infection in men, which emphasises the importance of early diagnosis, treatment and prevention of gonorrhoea as a strategy to reduce HIV transmission to serodiscordant partners. Our data also emphasise the fact that VDS patients with gonorrhoea are also at high risk of having co-existent chlamydial infection.

P3.284 FACTORS ASSOCIATED WITH VARIATIONS IN CULTURE CONFIRMATION FOR NEISSERIA GONORRHOEA: A STUDY OF PATIENTS ATTENDING FIVE GENITOURINARY MEDICINE CLINICS IN ENGLAND

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Background Screening for gonorrhoea at genitourinary medicine (GUM) clinics in England is routinely performed using Nucleic Acid Amplification Tests (NAATs), but confirmation of NAAT-positive specimens by culture is required to monitor trends in antimicrobial resistance for Neisseria gonorrhoeae. We determined the proportion of patients whose gonorrhoea diagnoses were confirmed by culture and investigated whether they differed from those that were only screened by NAATs.

Methods All NAAT-positive attendees reported to the GUM Clinic Activity Dataset (GUMCAD, a mandatory STI surveillance system among GUM clinics in England) from 5 clinics included in the Gonococcal Resistance to Antimicrobial Surveillance Programme (GRASP) from July-September 2011 were included in this analysis. Data from both datasets were linked by patient episode; all NAAT-positive attendees that were matched to a record in GRASP were considered culture-confirmed. Patient characteristics that were significant on Pearson's chi-square were included in an age- and clinic-adjusted logistic regression model to determine adjusted odds ratios (aORs) for being culture-confirmed.

Results Among all 844 NAAT-positive attendees, 54% were culture-confirmed. Most attendees were between the ages of 15–34 years (70%), white (55%), and 52% of those who gave information on sexual orientation were men who had sex with men (MSM); 72% of symptomatic attendees were culture-confirmed ($p < 0.001$). Females and MSM were less likely than heterosexual males to be culture-confirmed [aOR(95% CI): 0.51(0.31–0.85), p = 0.010; and