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 0.25 mg/L and decreased susceptibility to ceftriaxone MIC ≥ 0.125 mg/L, 7.2% (218/2970) in 2010–2011. Isolates in Canada has resulted in the modification of treatment guidelines. Canada’s most prevalent NG-MAST type, ST1407, ST3150 and ST3158 at 13.3%, 11.3% and 9.0% respectively.

In 2011, 238 STIs were identified: the most common STIs were ST1407, ST3150 and ST3158 at 13.3%, 11.3% and 9.0% respectively. In 2010, 249 STIs were identified: the most common STIs were ST1407, ST3150 and ST3158 at 13.3%, 11.3% and 9.0% respectively. In 2011, 238 STIs were identified: the most common STIs were ST1407, ST3150 and ST3158 at 13.3%, 11.3% and 9.0% 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.

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.
0.49(0.30–0.80), p = 0.004, respectively], while those with a concurrent STI [1.69(1.15–2.49), p = 0.007], and those presenting with multiple infection sites [2.54(1.62–4.00), p < 0.001] were more likely to be culture-confirmed.

Conclusion Not all NAAT-positive attendees were culture-confirmed, but this may be because culture was either unsuccessful or not routinely performed among asymptomatic attendees. All NAAT-positive patients should be cultured before treatment, as routine culture confirmation is essential to ensure representative monitoring of trends in antimicrobial resistance to inform decisions regarding treatment guidelines for gonorrhoea.

**P3.285 DIAGNOSTIC AND TREATMENT UNCERTAINTIES: EPIDEMIOLOGICAL RISK FACTORS FOR NAAT POSITIVE BUT CULTURE NEGATIVE GONORRHOEA CASES IN STOCKHOLM, SWEDEN**


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Background The advent of gene amplification testing methods for Neisseria gonorrhoea has lead to a higher prevalence of gonorrhea testing in the population. Various methods for Nucleic Acid Amplification Tests (NAAT) are used, often with high specificity. The sensitivity of culture is substantially lower than NAAT. Before treatment is initiated, antibiotic sensitivity of the isolate should be determined using culture-based methods. A considerable proportion of cases positive with NAAT cannot be verified by culture and hence it is not possible to verify the diagnosis or determine antibiotic sensitivity. Uncertainty in diagnostics and treatment of NAAT positive, culture negative gonorrhoea may lead to psycho-social and physical complications and continued transmission. To improve diagnostic and treatment accuracy for gonorrhoea, the objective of this study was to examine epidemiological risk-factors for NAAT positive but culture negative cases.

Methods The study included all men and women in Stockholm having at least one positive gonorrhoea NAAT test with follow-up cultures taken during the period January 1, 2011-June 30, 2012. The total number of eligible cases during this period was 938. Data on sex, age, mode of transmission, symptoms, Chlamydia trachomatis coinfections and NAAT lab method were collected. Outcome was defined as positive but culture negative cases.

Results In total, 19% of NAAT positive cases had no positive cultures (N = 174). Diagnostic certainty was greater among men than women. Ten-percent of men and 37% of women with positive NAAT had negative cultures. Three laboratory NAAT methods were used with differences in subsequent negative culture proportions found among these methods.

Conclusion Women have an increased risk for incorrect diagnosis and/or treatment of gonorrhoea. Improved gonorrhoea testing practices are necessary to avoid systematic misdiagnoses and inappropriate treatments.

**P3.286 WITHDRAWN BY AUTHOR**

**P3.287 COMPARISON OF ANTIMICROBIAL SUSCEPTIBILITY OF NEISSERIA GONORRHOEAE ISOLATES OBTAINED FROM THE PHARYNX, RECTUM AND URETHRA IN MEN WHO HAVE SEX WITH MEN**


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Background Gonorrhea is the most prevalent bacterial sexually transmitted infection globally. It is of grave concern that Neisseria gonorrhoeae has developed resistance to mainly all antimicrobials introduced for treatment. China is located in the WHO Western Pacific Region (WPR), where most gonococcal antimicrobial resistance (AMR) has originated. However, the information regarding AMR and particularly molecular epidemiology of N. gonorrhoeae strains in China is highly limited. This study investigated the AMR and molecular epidemiologic clusters of N. gonorrhoeae in 2007 and 2012 in Nanjing, China.

Methods A total of 204 and 82 N. gonorrhoeae isolates were collected in 2007 and 2012, respectively, in Nanjing, China. The