Methods A total of 33 blood specimens collected from 16 patients presenting with a syphilitic ulcer were analysed. The specimens were tested employing: Rapid Plasma Reagin; *Treponema Pallidum* Particle Agglutination (TPPA); recomLine Treponema IgM (Mikrogen Diagnostik); recomWell Treponema IgM (Mikrogen Diagnostik); Anti-*Treponema pallidum* ELISA -IgM (Euroimmun). Ulcer specimens were tested by qPCR. A specimen was considered positive for anti-Tp IgM when both TPPA and IgM, obtained with any of the assays, were positive.

Specimens containing antibodies against Epstein Barr Virus, Leptospira sp, Borrelia sp, Plasmodium sp, Herpes Simplex Virus 1 and 2 and specimens from pregnant women were tested with the three IgM assays to determine cross reactivity.

Results Anti-Tp IgM was found in 22/33 specimens. The recomLine assay detected 17/22 (77%), the recomWell 15/22 (68%) and the Euroimmun 14/22 (64%) positive specimens. None of the three assays provided false positive results. Borderline results were obtained with the recomLine (N = 6) and the recomWell (N = 2) assay. Considering the borderline results as positive increased the detection rate to 95% for the recomLine and to 72% for the recomWell. However, two and one false positive result was then obtained with the recomLine and recomWell assay, respectively. Tp DNA was detected in 13/16 (81%) ulcer specimens. The Euroimmun assay cross reacted with malaria antibodies in one sample.

Conclusions None of the three assays showed to be highly sensitive. Surprisingly, the highest sensitivity was obtained with the recomLine assay. The sensitivity improved by defining the borderline results as positive but decreased the specificity.

Disclosure of interest The IgM assays were kindly provided by the two companies, Euroimmun and Mikrogen Diagnostik. No other funding was received for this work.

P05.04 ANTIMICROBIAL SUSCEPTIBILITIES OF PERSONS WITH GONORRHOEA AT MULTIPLE SITES ARE ACCURATELY REFLECTED BY UROGENITAL SPECIMENS

P Dixon*, B Van Der Pol, J Swerdlow, S Cammarata, E Sun, EW Hook. *University of Alabama at Birmingham, Birmingham AL and Melinta Therapeutics New Haven, CT, USA*

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Background Surveillance for gonococcal (GC) antimicrobial resistance is focused on susceptibilities of urogenital GC isolates. The ability of surveillance programs utilising only urogenital specimens to detect resistance in communitites could theoretically be compromised if extragenital (i.e. pharyngeal or rectal) GC infectons were more often resistant. We evaluated how GC antimicrobial susceptibilities at extragenital sites varied when compared to contemporaneously isolated urogenital infections.

Methods We determined GC agar dilution MICs for ceftriaxone, cefixime, ciprofloxacin and azithromycin in isolates from 57 participants with multisite infections in a recent multicenter GC treatment trial.

Results Extragenital infections were more common among men with male partners (MSM – 23 [19%] of 118) and women (21 [18%] of 118), than men with female partners (MSW- 13 [8%] of 169) In this study all extragenital infections in MSWwere pharyngeal while pharyngeal isolates comprised about half of extragenital infections from MSM (12\[52%] of 23) and women (14[67%] of 21, respectively).

MICs were meaningfully different (2 or more dilutions) between urogenital and extragenital sites in 9 (16%) of 57 persons (14[6%] of 228 comparisons) with multiple site infections. Ceftriaxone or cefixime MICs varied between urogenital and extragenital sites in just 2 participants while MICs for ciprofloxacin and azithromycin varied in 3 and 7 participants, respectively. Only urogenital isolates from women and MSM had significantly elevated MICs to azithromycin when patients with infections at multiple sites were compared to those with only urogenital infection. There was no consistent pattern to these differences; in 5 urogenital MICs were greater than extragenital sites while in the remaining 4 participants, extragenital MICs were greater than for urogenital sites.

Conclusions MICs for urogenital sites of infection most often reflect MICs of extragenital isolates in persons with multiple simultaneous sites of infection and are suitable for surveillance for antimicrobial resistance.

Disclosure of interest Funding for this study was provided by Melinta Therapeutics.

P05.05 *NEISSERIA GONORRHOEAE* IN INDONESIA: PREVALENCE AND ANTIMICROBIAL SUSCEPTIBILITY AMONG STI CLINICS PATIENTS IN JAKARTA, YOGYAKARTA AND DENPASAR

[1,2,3]IPY Hananta*, [3]AP van Dam, [3]SM Bruisten, [2,3]MF Schim van der Loeff, [1]H Soebono, [2,3]HJC de Vries. *[1]Department of Dermatology and Venereology Faculty of Medicine Universitas Gadjah Mada, Yogyakarta, Indonesia; [2]Academic Medical Center Universiteit Van Amsterdam, The Netherlands; [3]Public Health Service (GGD) of Amsterdam, The Netherlands*

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Introduction In Indonesia, syndromic management is used for diagnosis and treatment of sexually transmitted infections (STIs), but this approach does not provide accurate data to assess the epidemiology of gonorrhoea and antimicrobial susceptibility of circulating *Neisseria gonorrhoeae* strains. We studied gonorrhoea prevalence and antimicrobial resistance of *N. gonorrhoeae* among patients of STI clinics in 3 large cities in Indonesia.

Methods In 2014, urogenital swabs were obtained from sexually active adults, mainly female sex workers, men who have sex with men, and male-to-female transgenders attending STI clinics in Jakarta, Yogyakarta, and Denpasar. In some patients additional rectal and pharyngeal swabs were taken. Diagnosis of *N. gonorrhoeae* infection was established by real time PCR targeting Opa genes. Culture isolates of *N. gonorrhoeae* were tested for antimicrobial susceptibility against doxycyclin, ciprofloxacin, azithromycin, ceftriaxone and cefixime by E-test™ using EUCAST breakpoints.

Results We included 764 participants: 346 (45.3%) males, 321 (42.0%) females and 97 (12.7%) transgenders (median ages 27, 30, and 38 years). In total, 800 samples were collected: 443 urethral, 321 cervical, 23 rectal, and 13 pharyngeal swabs. In 215 (28.1%) participants *N. gonorrhoeae* infection was detected by PCR. Prevalence varied significantly by gender (26.0% in males, 32.1% in females, and 22.7% in transgenders, p = 0.04); and varied significantly by city: 14.5% in Denpasar, 31.5% in Jakarta and 27.5% in Yogyakarta (p = 0.015).

Of 77 isolates tested for antimicrobial susceptibility, all were sensitive to azithromycin, ceftriaxone, and cefixime. In contrast, resistance to doxycyclin (98.7%) and ciprofloxacin (100%) was very common.

Conclusion This is the first study since 2004 describing the epidemiology of gonorrhoea and antimicrobial resistant strains in Indonesia. Prevalence of gonorrhoea is very high among STI

clinic visitors. In view of the extensive resistance against doxycyclin and ciprofloxacin, these antibiotics are not appropriate treatment options for gonorrhoea; instead, extended spectrum cephalosporins are advised.

Disclosure of interest statement The study is funded by Indonesian government through Beasiswa Unggulan (The Excellence Scholarship Program), Ministry of Education and Culture Republic of Indonesia and Public Health Service (GGD) of Amsterdam, The Netherlands. The authors declare that there is no conflict of interest.

P05.06 PROLONGED INFECTION OF PHARYNGEAL GONORRHOEA AFTER TREATMENT WITH CEFTRIAXONE

[1,2,3]IPY Hananta*, [2,3]MF Schim van der Loeff, [3]AP van Dam, [1]H Soebono, [2,3]HJC de Vries. *[1]Department of Dermatology and Venereology Faculty of Medicine Universitas Gadjah Mada, Yogyakarta, Indonesia; [2]Academic Medical Center, Universiteit Van Amsterdam, The Netherlands; [3]Public Health Service (GGD) of Amsterdam, The Netherlands*

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Introduction Previous studies reported that in a considerable proportion of pharyngeal gonorrhoea cases treated with extended-spectrum cephalosporins, the infection remains detectable after several weeks. We examined the occurrence of prolonged pharyngeal gonorrhoea infections after treatment with ceftriaxone at a sexually transmitted infection (STI) outpatient clinic in Amsterdam.

Methods A retrospective cohort study was conducted based on routine electronic medical records at the STI clinic of the Public Health Service (GGD) of Amsterdam. Eligible for inclusion were: adults diagnosed with pharyngeal gonorrhoea between January 2012 and July 2013, who were treated with ceftriaxone (500 mg IM), and who returned for a test of cure (TOC) between 7 and 21 days after treatment.

Definitive diagnosis of gonorrhoea was based on Gen-Probe Aptima-Combo 2 Assay™ using Tigris DTS™ system. Some patients also received additional antibiotics with ceftriaxone.

Information on patients' characteristics and clinical history were available, but data on sexual re-exposure after treatment were not.

Results In the study period, 880 pharyngeal gonorrhoea cases were diagnosed; 290 cases (32.9%) returned for a TOC visit and were eligible (255 males and 35 females, median age 34 and 25 years, respectively). In 17 cases (5.9%) *N. gonorrhoeae* infection was detected again. Prolonged infection was not associated with gender ($p = 0.49$) or age ($p = 0.87$), but appeared to be associated with sex work (OR = 3.24 [95% CI 0.83–12.45], $p = 0.07$). Prolonged infection was significantly more common among those who were treated with ceftriaxone only vs a combined-regimen (OR = 4.07, [95% CI 0.90–18.39]; $p = 0.048$).

Conclusion Prolonged pharyngeal gonorrhoea infection after appropriate treatment was not uncommon, and was more often observed in those who were treated with ceftriaxone only. This could be the result of re-infection after treatment or of treatment failure possibly due to poor tissue penetration. Treatment failure due to antimicrobial resistance seems unlikely.

Disclosure of interest The study is fully funded by Public Health Service (GGD) of Amsterdam, The Netherlands. The authors declare that there is no conflict of interest.

P05.07 *NEISSERIA GONORRHOEAE* MULTIANTIGEN SEQUENCE TYPING (NG-MAST) OF ISOLATES COLLECTED FROM STD PATIENTS IN DELHI, INDIA

[1]S Sood, [1]N Mahajan*, [1]R Singh, [1]A Kapil, [1]BK Das, [2]V Sreenivas, [3]HK Kar, [4]VK Sharma. *[1]Department of Microbiology, All India Institute of Medical Sciences, New Delhi; [2]Department of Biostatistics, All India Institute of Medical Sciences, New Delhi; [3]Department of Dermatology, STDs and Leprosy, P. G. I. M. E. R & Dr Ram Manohar Lohia Hospital, New Delhi; [4]Department of Dermatology & Venereology, All India Institute of Medical Sciences, New Delhi*

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Background *Neisseria gonorrhoeae* multiantigen sequence typing (NG-MAST) is a highly discriminatory technique for assessing the genetic diversity of *N. gonorrhoeae* and has also been put forward as a tool for predicting specific antimicrobial resistance (AMR) phenotypes. Therefore, the present study was undertaken to investigate the molecular epidemiology of *N. gonorrhoeae* isolates using NG-MAST in Delhi and to examine if it can be used as a means for predicting AMR. This is the first such research performed in this country.

Methods 100 consecutive gonococcal isolates between April 2010 to October 2013 were investigated. Antimicrobial susceptibility testing was done using disc diffusion method and E test and the results interpreted using the breakpoint criteria of CDS technique. NG-MAST was performed as described previously. WHO *N. gonorrhoeae* reference strains F, G, K-P were used as controls. Association between NG-MAST sequence type (ST) and antimicrobial susceptibility was probed using chi-square and fisher's exact tests.

Results Rates of resistance to classical antibiotics were high. Decreased susceptibility to ceftriaxone (MIC 0.032–0.25 μg/ml) was demonstrated in 5% while azithromycin resistance (MIC ≥1 μg/ml) was seen in 4% isolates. *N. gonorrhoeae* isolates were assigned into 60 different STs and 43 (71.6%) have not been reported previously to the international database. The most common ST was 6058 (21%), followed by ST 9774 (4%), ST9875 (4%), ST9783 (4%) and ST2990 (3%). The majority of the STs (76.6%) were represented by a single isolate. There was significant association between ST6058 and resistance to penicillin ($p = 0.00$) and tetracycline ($p = 0.002$). In all the other antibiotics, no association was found.

Conclusion Our work reflects a highly diversified gonococcal population in Delhi. Further, NG-MAST has a limited applicability as a tool for predicting AMR in our region. A detailed investigation on a large number of representative isolates may provide insight into sexual networks in the city.

Disclosure of interest statement None.

P05.08 BETA-LACTAM ANTIBIOTICS INDUCE PROTEIN EXPRESSION CHANGES IN *NEISSERIA GONORRHOEAE* REVEALED BY A PROTEOMIC APPROACH

[1]S Nabu*, [1]C Isarankura-Na-Ayudhya, [1,2]R Lawung, [3]P Isarankura-Na-Ayudhya, [1]V Prachayasittikul. *[1]Department of Clinical Microbiology and Applied Technology, Faculty of Medical Technology, Mahidol University, Bangkok, Thailand; [2]Center of Medical Laboratory Service, Faculty of Medical Technology, Mahidol University, Bangkok, Thailand; [3]Department of Medical Technology, Faculty of Allied Health Science, Thammasat University, Pathumthani, Thailand*

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