Results Of the 156 specimens, 83 *N. gonorrhoeae* strains were tested for antimicrobial susceptibilities to 18 agents. The prevalence of β-lactamase producing strains and chromosomally-mediated resistant strains were 7.2% and 16.5%, respectively. Against cepharosporins, one strain was resistant to cefixime with MIC 0.5 μg/ml. There was not resistant strain to ceftriaxone, but the 7 strains (8.4%) had MIC 0.125 μg/ml. The MIC of fluoroquinolones to all strains showed a bimodal distribution. The values of MIC90 of ciprofloxacin and levofloxacin were 16 and 8 μg/ml, respectively. Sitafloxacin, one of fluoroquinolones had strong activity to N. gonorrhoeae strains and the value of MIC90 was 0.25 μg/ml. The MIC of azithromycin in 2 strains was 2 μg/ml, but no high-level resistance to macrolides was detected.

Conclusion The first national surveillance for antimicrobial susceptibilities of *N. gonorrhoeae* was performed. Fluoroquinolone-resistance *N. gonorrhoeae* strains were spread in Japan. The resistant rate of azithromycin resistant was 2.4%.

P2.082 POST-TREATMENT DETECTION OF AZITHROMYCIN IN HIGH-VAGINAL SWABS USING LIQUID CHROMATOGRAPHY AND TANDEM MASS SPECTROMETRY (LC-MS/MS)

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Introduction Recent data have raised questions over the efficacy of azithromycin 1g for the treatment of chlamydia infection. In order to measure effective absorption, we developed a protocol to quantify the concentration of azithromycin using liquid chromatography and tandem mass spectrometry (LC-MS/MS) in self-collected high-vaginal swabs.

Methods Ten healthy women were asked to self-collect a high-vaginal swab (baseline) prior to taking a 1g dose of azithromycin. A blood sample was collected four hours later to determine plasma concentrations of azithromycin. Participants then self-collected a high vaginal swab each day for a further 9 days. All swabs were preserved in 1ml of 100% Methanol and stored at –80°C prior to analysis. One ml of chloroform containing 10mg/ml of Leucine enkephalin as an internal standard was added to extract azithromycin. Azithromycin concentrations were calculated using a validated LC-MS/MS method. Data were normalised to the internal standard and to membrane lipid concentrations, measured in the same samples using LC-MS/MS.

Results Azithromycin was detected at varying concentrations in all 10 women in all post-treatment samples. The highest average normalised azithromycin concentration of 953ng/ml (range = 267–2200ng/ml, standard error of mean (sem) = 181ng/ml) was detected on day 2 post-treatment. The lowest average azithromycin concentration was 164ng/ml (range = 51–387ng/ml, sem = 42ng/ml), 9 days post-treatment. The average concentration of azithromycin detected in blood samples was 339ng/ml (range = 107–628ng/ml, sem = 57ng/ml). In 9/10 women azithromycin concentrations remained above 64ng/ml, the hypothesised mean inhibitory concentration (MIC) of azithromycin for chlamydia, for the entire 9 days.

Conclusion We have validated a method for detecting the azithromycin concentration in self-collected high-vaginal samples using LC-MS/MS. Azithromycin concentrations remained above the reported MIC of 64ng/ml for up to 9 days post-treatment in high-vaginal swabs from 10 healthy women.

P2.083 A COMPARATIVE EFFICACY OF NIFURATEL AND METRONIDAZOLE IN THERAPY OF BACTERIAL VAGINOSIS ASSOCIATED WITH *ATOPOBIUM VAGINAE*

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Purpose To evaluate the efficacy of nifuratel plus nystatin combination in the treatment of patients with bacterial vaginosis (BV) associated with *A. vaginae*.

Methods A prospective comparative study on the clinical efficacy, safety and tolerability of nifuratel plus nystatin combination was performed in patients with *A. vaginae*-associated BV. A total of 197 women meeting the inclusion/exclusion criteria and 20 healthy women (the control group) were examined. BV was diagnosed in 148 out of 197 women with vaginal discharge (according to Amsel criteria). The diagnosis of BV was not confirmed in 49 patients and they were excluded from the study. Patients were randomised to receive intravaginal treatment with suppositories containing a combination of nifuratel (500 mg) and nystatin (200,000 IU) at night for 8 days (group 1) or standard treatment with suppositories containing metronidazole (500 mg) twice daily (in the morning and at night) for 10 consecutive days (group 2). Treatment results in both groups were compared one week after the end of therapy. Control test of cure with respect to *A. vaginae* was carried out by PCR one month after the end of therapy.

Results PCR assay detected *A. vaginae* in 83 (56%) out of 148 BV cases and in none from the control group ($p < 0.01$). In patients with *A. vaginae*-associated BV efficacy of the nifuratel plus nystatin combination was 90.3%, while standard metronidazole therapy was ineffective (cure in only 10% of cases).

Conclusion *A. vaginae* may be an additional marker of BV. Combination of nifuratel with nystatin was much more effective than standard intravaginal administration of metronidazole in the treatment of *A. vaginae*-associated BV.

P2.084 A CASE OF RAPID CLEARANCE OF PENILE BOWENOID PAPULOSIS WITH IMIQUIMOD CREAM

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Introduction Bowenoid papulosis is a form of penile intraepithelial neoplasia associated with the oncogenic human papilloma virus (HPV) strains 16, 18, 31 and 33. It occurs in young sexually active patients and has a low risk of progressing to invasive squamous cell carcinoma.

Case report The patient was a 31 year old chinese male who presented with a 3 month pruritic rash over his glans penis. Previous treatment with hydrocortisone cream had caused more lesions to appear and was stopped.

On examination, there were multiple erythematous discrete papules over the glans penis and a cluster of papules at the inner prepuce. A skin biopsy was consistent with bowenoid papulosis showing a thickened epidermis with full thickness atypical keratinocytes with loss of normal polarity. A band like infiltrate of lymphocytes, plasma cells and eosinophils was present within the dermis. The rest of his sexually transmitted infection screen including syphilis serology and human immunodeficiency virus tests were negative.

He was started on topical imiquimod three applications per week and noted complete clearance of the prepuce lesions after two

weeks, with flattening of the lesions on the glans. All lesions were noted by the patient to have cleared after four weeks of imiquimod use, and only post inflammatory hyperpigmentation was noted at his review after six weeks. Minimal side effects were noted by the patient except for transient itch.

Discussion We report our first case of penile bowenoid papulosis responding to imiquimod monotherapy, and is the 5th reported case to date. Our case demonstrates one of the most rapid clinical clearance within six weeks, after only four weeks of imiquimod application. Other treatment modalities like electrocurrettage, 5-fluorouracil or topical interferon have all been associated with recurrence. Immunomodulatory treatment for this condition appears safe and efficacious, with the added convenience of being patient administered.

P2.085 THE CURRENT ANTIMICROBIAL SUSCEPTIBILITY IN CHLAMYDIA TRACHOMATIS IN JAPAN FROM THE NATIONWIDE SURVEILLANCE

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Chlamydia trachomatis is one of the principal pathogens for non-gonococcal urethritis. There have been a few studies about novel resistant strains isolated from the patients with genital chlamydial infection. However, the current common concept indicates that those were temporary and unstable strains with decreased antimicrobial susceptibility. Three societies, the Japanese Society of Chemotherapy, Japanese Association of Infectious Diseases and Japanese Society of Clinical Microbiology, performed the first national surveillance for *C. trachomatis* between April 2009 and October 2010. Based on the data obtained, the current situation of antimicrobial susceptibility in *C. trachomatis* and the results of the previous research on antimicrobial susceptibility in *M. genitalium* are discussed.

In 51 medical facilities in 8 prefectures of Japan, urethral discharge or urethral swab specimens were collected from male patients with urethritis. The specimens were sent to the Kitazato University Research Center for Anti-infectious Drugs via BD Universal Viral Transport. There, measurement of antimicrobial susceptibilities was performed according to the standard method of the Japan Society of Chemotherapy. The drugs used for antimicrobial susceptibility testing are shown below.

From 28 facilities, 207 specimens were collected and 48 specimens were positive for *C. trachomatis* by culture. Using these specimens, antimicrobial susceptibility testing could be performed for 19 strains. The MIC50, MIC90 and range (μg/ml) were as follows. EM: 0.06, 0.25, and 0.03~0.25: CAM: 0.008, 0.016, and 0.004~0.03; AZM: 0.125, 0.5, and 0.06~0.5; MINO: 0.5, 1, and 0.125~2; DOXY: 0.125, 0.25, and 0.03~0.5 μg/ml; CPFX: 2, 4, and 1~4; LVFX: 0.25, 0.25, and 0.125~0.5; TFLX: 0.125, 0.25, and 0.06~0.5; STFX: 0.06, 0.125, and 0.03~0.25.

Fortunately, there were no resistant strains of *C. trachomatis* in this surveillance. However, the current and future situation of antimicrobial susceptibility in the pathogens of non-gonococcal urethritis will be surveyed regularly.

P2.086 ORIGINS OF REPEAT INFECTIONS WITH CHLAMYDIA TRACHOMATIS (CT) AMONG HETEROSEXUAL MEN IN TWO SOUTHERN CITIES IN THE UNITED STATES

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Background Recent clinical trials have reported high repeat infection rates (12%–14%) following 1 g azithromycin. These data suggest that single-dose azithromycin may be inadequate, but high repeat infections rates could also be explained by exposure to an original or new partner or retesting before DNA clearance. The purpose of this study was to examine the origins of repeat CT infections among men.

Methods Men diagnosed with Ct by Gen-Probe Aptima Combo 2 at STD clinics in New Orleans, and Jackson, Mississippi were re-tested an average of 6 weeks after treatment with single-dose azithromycin. Detailed sexual behaviour histories were collected at baseline and follow-up via computer-assisted/self-administered interview and MLST genotyping was performed.

Results Of 367 men with Ct, 222 returned for a f/u visit [mean of 45 days post-baseline (s.d. 13)] and 14/217 (6.5%) were positive. Of the 14, 36% reported sexual re-exposure to a baseline partner, 14% reported sexual exposure to a new partner, 7% reported sexual exposure to both, and 43% denied sexual re-exposure. Thus far MLST genotyping completed for 3 baseline-f/up positive pairs. Two pairs with the same genotype (E/39) reported sexual re-exposure to a baseline partner and the pair with a new genotype reported sexual exposure to a new partner (D/19 to C/15).

Conclusion Early repeat infection rate among men with Ct in this study was lower than recently reported and about half could be explained by sexual re-exposure. Rates in the other two studies may have been inflated by high re-exposure rates or premature testing using NAAT since many of the participants were tested before 3 weeks. Studies that examine repeat infections should consider re-exposure/new exposure and retest when DNA clearance is assured. Our data does not support high treatment failure rates for 1 g azithromycin treatment of Ct.

P2.087 *IN VITRO* ANTIMICROBIAL SYNERGY TESTING, USING ETEST METHODOLOGY, OF *NEISSERIA GONORRHOEAE* FOR EVALUATION OF SUSCEPTIBILITY WHEN USING DUAL ANTIMICROBIAL THERAPY?

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Background Antimicrobial resistance in *Neisseria gonorrhoeae* is a major public health problem worldwide. Recently, the first gonococcal isolates with high-level resistance to extended-spectrum cephalosporins, including ceftriaxone, were reported and gonorrhoea may become untreatable in certain circumstances. As a response, dual antimicrobial therapy (mainly ceftriaxone+azithromycin) has been introduced in the USA and Europe. The aim of this study was to apply a method for *in vitro* synergy testing, using Etest methodology, of various combinations of antimicrobials, i.e. currently used or of potential interest for future dual antimicrobial therapy.

Methods The eight WHO 2008 *N. gonorrhoeae* reference strains and 51 clinical *N. gonorrhoeae* isolates were investigated by synergy testing using Etest of in total 15 combinations of ceftriaxone, cefixime, azithromycin, moxifloxacin, spectinomycin, and gentamicin.

Results Highest levels of synergistic and/or additive effects, without any observed antagonistic effects, were observed for the combinations cefixime+gentamicin (in total 80% of isolates), azithromycin+gentamicin (65%), and cefixime+azithromycin (63%). The combination of ceftriaxone+azithromycin, currently recommended in the dual antimicrobial therapy, also showed