azithromycin resistance it is highly recommended to determine the resistance pattern of the respective gonococcal strain by culture performance.

## P2.097 PCR FOR DIRECT DETECTION OF THE MOSAIC *NEISSERIA GONORRHOEAE PENA* GENE IN URINES AND CERVICAL, RECTAL AND TONSILLAR SWABS

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**Introduction** The mosaic *penA* gene, partly derived from commensal *Neisseria* strains, is strongly associated with diminished susceptibility of *Neisseria gonorrhoeae* (Ng) against cephalosporins. We developed a direct PCR test for Ng-positive clinical specimens to detect the mosaic *penA* gene.

**Methods** Swabs and urines from patients with gonorrhoea were in medium for NAAT testing (Aptima Combo 2). Corresponding Ng strains were obtained by culture on selective GC agar plates and stored at –80°C. Presence of a mosaic *penA* gene in these strains was demonstrated by PCR.

**Results** Using one conserved forward primer and two reverse primers, specific for mosaic- and wild type *PenA* genes, and SYBR green as a fluorescing agent, two real-time PCRs were developed. Testing diluted DNA samples showed that the mosaic *penA* gene PCR was 10–100 fold more sensitive than the wild type gene PCR. Both PCRs were negative with strains belonging to *N.meningitidis* (n = 3), *N.lactamica* (n = 4), *N.subflava* (n = 2), *N.cinerea* (n = 1) and *N.elongata* (n = 1). Ten urine (U), 10 cervical (C), 10 rectal (R) and 10 tonsillar (T) samples, all negative in the NAAT for Ng, were negative in both PCRs. Testing paired samples from patients, who had a positive culture and NAAT (10 R, 9 U, 8 C, 9 T) showed concordant results in 35/36 samples: 4 pairs tested positive in the mosaic PCR and 31 in the wild type PCR. From one patient a wild type strain had been cultured from the throat, but both *PenA* PCRs on the swab were negative, possibly due to a low amount of DNA.

**Conclusion** We successfully developed discriminating PCRs with which the Ng mosaic *penA* gene can be detected without culture of Ng. This test can be used to estimate the prevalence of diminished susceptibility of Ng against cephalosporins in regions where culture is no longer performed.

## P2.098 SPECIATION AND ANTIFUNGAL SUSCEPTIBILITY TESTING OF CANDIDA SPECIES CAUSING ORAL THRUSH IN HIV PATIENTS

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**Purpose** Oral thrush by Candida species is a common ailment of individuals suffering from HIV infection. These species show a high resistance to antifungal drugs used for the treatment. Hence our study was conducted to determine the aetiology and antifungal susceptibility patterns of Candida isolates causing oral thrush in HIV patients.

Materials and Methods: Isolation of Candida species was attempted from 60 cases of oral thrush in HIV infected patients at the Department of Microbiology, Kasturba Medical College, Mangalore. Isolates were identified to species level based on chlamydospore formation; ability to form germ tube; assimilation/fermentation of carbohydrates; production of urease enzyme; formation of pellicle/surface film on Sabouraud's dextrose broth; growth on Sabouraud's Dextrose Agar (SDA) with cycloheximide and growth on SDA at 370C and 450C. Antifungal drug susceptibility testing was done by macro broth dilution test using azole group such as fluconazole, itraconazole and ketoconazole.

**Results** 56 Candida species were isolated of which C.albicans was the predominant isolate (84%), followed by C.tropicalis (8%), C.glabrata (3.5%), C.parapsilosis and C.kefyr (1.8% each). Most isolates (53) showed significantly higher resistance to fluconazole than the standard pathogenic control strain C.albicans NCPF 3153A. 31 isolates (66%) of C.albicans had Minimum Inhibitory Concentration (MIC) values 8 times that of control for ketoconazole. 23 isolates had MIC for itraconazole of 0.5 μg/ml which was only twice as high as that of control (0.125 μg/ml), all others having comparatively equivalent MIC to itraconazole.

**Conclusion** Our study indicates that although C.albicans is the predominant species, there are other species prevalent and causing infection in our HIV infected population. MIC's of our Candida isolates to commonly used antifungals such as fluconazole, ketoconazole and itraconazole were significantly higher than the control strain used in the study. Our study indicated that itraconazole was the most effective among the azole group of drugs.

## P2.099 VEHICLE ALTERATIONS IN PODOPHYLOTOXINE TREATMENT: A PARTIAL DISAPPOINTMENT

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**Background** Podophylotoxine o, o5% gel is a routinely used for condylolma accuminatum treatment as home used procedure. However, irritations, sometimes severe are common. This may be due partially to leakage of the preparation to the surrounding non-infected tissue. It is difficult to expect the preparation to remain dry and only on affected areas in non-circumcised males and females.

**Methods** :We used compounded podophylotoxin o, 15% in adhesive creamy base. The team work with pharmaceutical technologist helped to create an adhesive creamy paste, with greater stability and uniformly distribution on individual lesions. The melting of the preparations was minimised by tailored compounding.

**Results** The vast majority of patients preferred cream to gel, both to far less irritations and excellent tolerability. Unfortunately, the overall success with cream formulation was disappointing. Therapeutic results seemed to be better, at the very beginning of the treatment, dye to the constant and prolonged delivery on the treated lesions. However, recurrences are far more frequent and tend to develop earlier than with gel podophylotoxin formulation.

**Conclusion** Probably, the cream formulation does have a therapeutic advantage in perianal region, because of the better adherence of the vehicle, and, when in out of office settings, of less irritation to surrounding tissue in the presence of over-applying the medicine, which frequently is the case.

## P2.100 CLINICAL EFFICACY OF SITAFLOXACIN 100MG TWICE DAILY FOR 7 DAYS FOR PATIENTS WITH NON-GONOCOCCAL URETHRITIS

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To date, the standard treatment for the patients with chlamydial non-gonococcal urethritis (NGU) remains effective; however, conventional quinolone antibiotics have less activity against Mycoplasma

genitalium-positive NGU. The purpose of this study was to establish the treatment efficacy of sitafloxacin (STFX), one of the new generation of quinolones, for patients with NGU.

Male patients with NGU were included in this study. Chlamydia trachomatis was detected by TMA assay and M. genitalium and Ureaplasma urealyticum were detected by real-time PCR. The patients received STFX 100mg twice daily for 7 days orally. The primary outcome was microbiological eradication at 2 to 4 weeks after completion of treatment.

A total of 208 patients were initially included in this study; however, 18 who were Neisseria gonorrhoeae-positive, 36 who failed to visit again, 34 who visited within 2 weeks after completion of treatment, 1 who had sexual intercourse with his female partner, and 1 whose data was lost were excluded from further analysis. In the 118 patients who could be analysed, the microbiological eradication rates were 95.7% (45/47) for C. trachomatis, 93.8% (15/16) for M. genitalium, and 100% (17/17) for U. urealyticum.

The results of this study clearly show that STFX has strong activity against C. trachomatis, M. genitalium and U. urealyticum, which are common pathogens of NGU. The regimen with STFX for patients with NGU should be recommended as a standard one.

## P2.101 HIV STATUS AND OTHER PREDICTORS OF SUCCESSFUL SYPHILIS TREATMENT

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**Background** Data addressing the question of whether HIV-positive patients respond as well to the recommended treatment for syphilis as HIV-negative patients are sparse. We examined data from reported early syphilis cases in San Francisco to identify factors related to serologic response to treatment.

**Methods** San Francisco early syphilis cases diagnosed between 2006 and 2012 were analysed in terms of serologic response to treatment. Cases were excluded if the patient had any prior syphilis diagnosis reported, and only cases with an initial reactive serologic test for syphilis (STS) titer of 1:4 or higher were included. A successful serologic response to treatment was defined by a record of a non-reactive STS or a four-fold titer decrease within 12 months from treatment. Survival analysis and proportional hazards models were used to examine the relationship between demographic and risk factor data, including HIV status, and number of days until successful serologic response was documented.

**Results** A total of 1664 first-time cases were examined. HIV-positive patients were significantly more likely to have a follow-up STS than other patients ($p < 0.0001$). Of the 1557 cases with any follow-up STS, 9.3 percent did not show evidence of successful serologic response. HIV-negative patients were not found to be less likely to show response to treatment (median of 111 days for HIV-positives versus 124.5 for HIV-negatives, $p < 0.0001$). Stage of disease was also associated with evidence of serologic response (median of 121.0 days for primary, 109.0 days for secondary, and 130.0 for early latent), but race, gender, genders of partners, and treatment provided were not.

**Conclusion** Analysis of routine interview data found no evidence that HIV-positive patients failed to respond to standard syphilis treatments. However, the limits of surveillance data suggest the need for further research examining the relationship between immune status and response to treatment among HIV-positive patients.

## P2.102 THE INFLUENCE OF ANTI RETROVIRAL TREATMENT (ART) ON THE TREATMENT OF TRICHOMONAS VAGINALIS AMONG HIV-INFECTED WOMEN IN THREE SOUTHERN CITIES THE U.S.

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**Background** Trichomonas vaginalis (TV) is the most common non-viral STI and has been linked to premature membrane rupture, preterm birth, and low birth weight in pregnant women. TV has also been shown to increase vaginal shedding of HIV and, thus, may influence HIV sexual and perinatal transmission. Repeat infection rates among HIV+ women are high. We have shown that bacterial vaginosis (BV) is associated with single dose metronidazole (MTZ) treatment failure in HIV+ women. A recent study in Africa has found that nevirapine is also associated with a higher rate of repeat infections. The purpose of this study is to determine if other ART interferes with single dose MTZ treatment of TV.

**Methods** A secondary data analysis was performed on a cohort of HIV+/TV+ women who had been randomised to single (2gm) dose or 7 day (500mg BID) dose MTZ. Follow-up visit, including culture, occurred 6–12 days after treatment completion. Data on sexual exposure was collected. Repeat TV infection rates were compared for women on ART at baseline versus not on ART, controlling for BV and treatment arm.

**Results** Of the 230 women included, 65% were receiving ART: NRTI (95%), NNRTI (31%), PI (58%) and other ART (2%). Those on ART had higher repeat infections than women not on ART [25/150 (16.7%) vs. 6/80 (6.3%), p-value = 0.03]. Controlling for BV status and stratifying by treatment arm, the association was found only in the single-dose arm (p-value = 0.05) and not in the multi-dose arm (p-value = 0.39). Only 5% of the women were sexually re-exposed during follow-up.

**Conclusions** ART in general is associated with a higher TV repeat infection rate following single dose MTZ treatment but not for multi-dose. These data further support the recommendation that single dose MTZ not be used in HIV+ women.

## P2.103 DIFFERENTIAL EFFECT OF STANDARD THERAPIES FOR NON-GONOCOCCAL URETHRITIS AGAINST UREAPLASMA SPECIES

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**Background** *U. urealyticum* (UU) but not *U. parvum* (UP) is associated with non-gonococcal urethritis (NGU), while UP may be associated with adverse pregnancy outcomes. Treatment failure may differ by species; therefore, we examined the efficacy of CDC-recommended therapies for NGU against UU and UP separately.

**Methods** From May 2007 to July 2011, men aged ≥ 16 years attending an STD clinic in Seattle, Washington with NGU (urethral discharge or urethral symptoms plus ≥ 5 PMNs/HPF) were enrolled in a randomised treatment trial. Participants received active azithromycin (1g) and placebo doxycycline or active doxycycline (100 mg bid × 7d) and placebo azithromycin. *Ureaplasma* species were detected in broth urine culture followed by species-specific PCR. Microbiologic failure (detected by PCR) was determined at 3, 6, and 9 weeks. At 3 weeks, men who failed initial treatment received the alternate therapy (active doxycycline if they first received active azithromycin and vice versa). Persistent failures received moxifloxacin at 6 weeks.

**Results** Of 479 enrolled men, 107 (22.3%) and 59 (12.3%) were infected with UU and UP, respectively, and returned at 3 weeks. Among men who received azithromycin, microbiologic failure at 3 weeks occurred in 46.7% (14/30) of UP-infected men and 25.0%