**P2.094** THE CONTRIBUTION OF MACROLIDE RESISTANCE MUTATIONS TO FAILURE OF AZITHROMYCIN TREATMENT IN MYCOPLASMA GENITALIUM INFECTION


1M Bissessor, 1C K Fairley, 1MY Y Chen, 1S N Tabrizi, 1U Hocking, 1,2C S Bradshaw, 1Melbourne Sexual Health Centre, Melbourne, Australia; 1Melbourne School of Population Health, University of Melbourne, Melbourne, Australia; 1Department of Microbiology Royal Women’s Hospital, Melbourne, Australia; 2Centre for Women’s Health, Gender and Society, University of Melbourne, Melbourne, Australia; 3Department of Epidemiology and Preventive Medicine, Monash University, Melbourne, Australia

Background Current recommended treatment for Mycoplasma genitalium (Mg) is azithromycin. Macrolide resistance mutations (MRM), predominantly on the 23S rRNA gene of Mg, have been found to be associated with failure of azithromycin. We aimed to determine the efficacy of 1g-azithromycin in a prospective cohort of Mg-infected STI clinic attendees, and to determine the contribution of MRM to treatment failure.

Method We commenced an observational study in July 2012 in which symptomatic patients diagnosed with Mg by PCR at Melbourne Sexual Health Centre are retested for Mg 14 and 28 days following treatment with 1g-azithromycin. Testing for Mg using high-resolution melt analysis (HRM) is conducted on day 0 and on positive samples at days 14 and 28. Participants are managed on the basis of clinical symptoms and not detection of MRM. Study will complete, May 2013.

Results 105 participants have been recruited; 89 have completed all study requirements. 48/89 (54%; 95% CIs 44–64%) participants were Mg PCR negative at day 28. 41/89 (46%; 95% CIs 36–56%) did not respond to 1g azithromycin: 11/41 (27%) had a persistently positive Mg PCR on day 28 without reported risk of re-exposure (presumptive failures) and 30 of 41 (73%) had persistent symptoms of Mg prior to day 28 and required interim treatment with moxifloxacin (probable failures). Of the 41 failures, 40 (98%) had MRM detected: 30 (75%) at baseline and 10 (25%) at day 14 only. Of the 48 azithromycin-responders 4(8%) had MRM detected at baseline.

Conclusion The azithromycin cure rate for Mg in this clinic cohort was only 54%. MRM were detected in virtually all cases of azithromycin-failure, and were uncommon in azithromycin-responders.

The majority of Mg were detected prior to treatment. These findings have implications for the use of macrolides as current recommended treatment for Mg genitalium, and highlight the need for evaluation of alternative treatment approaches.

**P2.095** ORIGINS OF REPEAT INFECTIONS WITH MYCOPLASMA GENITALIUM (MG) AMONG HETEROSEXUAL MEN IN TWO SOUTHERN U.S. CITIES


1P Kissinger, 1S White, 1N Schmidt, 1S Naylor, 1L Menne, 1R Lillis, 1S A Some, K Defayettet, 1D H Martin. 1Tulane University SPHTM, New Orleans, LA, United States; 1Louisiana State University Health Sciences Center, New Orleans, LA, United States; 1University of Mississippi – Department of Medicine, Jackson, MS, United States

Background The purpose of this study was to examine the origins of repeat infections with Mg among men. High repeat infection rates have been consistently reported and treatment failure secondary to macrolide resistance is thought to be the primary cause. This study adds to the growing literature by describing the possible origins of repeat Mg infections in among men, primarily African American, attending two public STD clinics in southern cities in the U.S.

Methods Men diagnosed with NGU at an STD clinic in New Orleans, Louisiana, and Jackson, Mississippi, were tested for Mg using the GenProbe research-use-only assay Mg+ men underwent a 4–10 week test of cure visit (TOC) following treatment with 1 g azithromycin. Detailed sexual behaviour data were collected at baseline and follow-up via ACASI and genotyping was performed.

Results Of 205 men with Mg, 135 returned for TOC visit and of those, 34.3% were positive. Of the 46 who were positive at TOC, 19.6% reported sexual re-exposure to a baseline partner, 6.5% reported sexual exposure to a new partner, 6.5% reported sexual exposure to both, and 67.4% denied sexual re-exposure. Men who re-tested positive for Mg at TOC (n = 46) were no more likely that those who tested negative (n = 88) to have had sexual exposure to a baseline partner (31.8% vs. 26.1%, P = 0.55) or exposure to a new partner (21.4% vs. 11.3%, P = 0.22). Genotyping on baseline/TOC positive pairs is being performed and will be used in conjunction with behavioural data to more precisely estimate the treatment failure rate.

Conclusion The TOC repeat infection rate among men with Mg is high. Our data are consistent with the published literature corroborating that repeat infections in men treated with azithromycin is usually due to treatment failure rather than re-infection. Research is needed to optimize treatment of Mg infections in men.
azithromycin resistance it is highly recommended to determine the resistance pattern of the respective gonococcal strain by culture performance.

**Introduction**

The mosaic penA gene, partly derived from commensal Neisseria strains, is strongly associated with diminished susceptibility of Neisseria gonorrhoeae (Ng) against cephaplorins. 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.cinnere (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 resulted in 35/36 samples: 4 pairs tested positive in the mosaic PCR.

**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.