006.1 THE EFFICACY OF PRISTINAMYCIN FOR MYCOPLASMA GENITALIUM – AN INCREASING MULTIDRUG RESISTANT PATHOGEN

1,2,3CS Bradshaw*, 4,5 Ji Twin, 1,3M Bisessor, 1,2TRH Read, 6Ji Jensen, 1,CK Fairley, 4,5SM Garland, 1,2MY Chen, K Worthington, 1M Grant, 1,2,3SN Tabrizi. 1Melbourne Sexual Health Centre, Alfred Health, Melbourne, Australia; 2Central Clinical School, Monash University, Melbourne, Australia; 3School of Population and Global Health, University of Melbourne, Melbourne, Australia; 4Department of Microbiology and Infectious Diseases, Royal Women’s Hospital, Melbourne, Australia; 5Munich Children’s Research Institute, Munich, Germany; 6Statens Serum Institute, Copenhagen, Denmark

Introduction To determine the efficacy of pristinamycin-based regimens for M. genitalium-infections failing prior regimens and to examine the presence of 23S rRNA and ribosomal protein gene mutations and their association with treatment failure.

Methods In 2013 M. genitalium-infected men and women attending Melbourne Sexual Health Centre who failed azithromycin and moxifloxacin were treated with pristinamycin 1g qid for 10 days with a test-of-cure (TOC) 3–4 weeks post-pristinamycin. From December 2014 pristinamycin was prescribed 1g bid for 10 days second-line following azithromycin failure. Pre- and post-treatment samples were stored and sequenced to detect 23S rRNA and ribosomal protein gene mutations, as potential markers of pristinamycin resistance.

Results By March 2015 37 M. genitalium-infected patients had received pristinamycin: 32 males (10 rectal; 22 urine samples) and 5 females (1 rectal; 3 urine; 1 cervical). TOC data are available on 25 patients at abstract submission: 20 were cured (80%; 95% CI 61–92%) and 5 (20%; 8–39%) failed pristinamycin. Failure rates in the 16 patients treated with 1g qid 10 days were 12% (n = 2), and 33% (n = 3) in the 9 treated with 1g bd 10 days, p = 0.23. Of the 5 pristinamycin failures; 2 were cured with moxifloxacin, 3 failed moxifloxacin and are awaiting TOCs following solithromycin or combined doxycycline/pristinamycin.

Conclusion Increasing reports of azithromycin and moxifloxacin failure for M. genitalium-infections necessitates evaluation of new agents. We present some of the earliest data on the use of pristinamycin for M. genitalium. Treatment failure occurred when delivered as monotherapy following failure of prior regimens. Current data on use of combined pristinamycin and doxycycline as a second line regimen after azithromycin failure will be available for presentation. Resistance mutations in the 23S rRNA and ribosomal protein genes are associated with pristinamycin failure.

Disclosure of interest statement No pharmaceutical grants were received in the development of this study.
and ciprofloxacin were determined using Etest or agar dilution method.

**Results** For AZD0914, the MIC range, modal MIC, MIC\textsubscript{50} and MIC\textsubscript{90} was \(0.002–0.25\) mg/L, \(0.125\) mg/L, \(0.064\) mg/L and \(0.125\) mg/L, respectively. The MIC values were substantially lower than those of the fluoroquinolone ciprofloxacin and most other antimicrobials examined. No cross-resistance with any other examined antimicrobial was observed.

**Conclusion** The *in vitro* susceptibility to the novel spiropyrimidine- netrione AZD0914 among 873 contemporary isolates from 21 European countries was high and no cross-resistance to antimicrobials currently or previously used for gonorrhoea treatment was indicated. Additional studies investigating the *in vitro* and *in vivo* induction and mechanisms of AZD0914 resistance in gonococci, pharmacokinetics/pharmacodynamics in modelling/simulations and in humans, and performance in randomised controlled gonorrhoea treatment trials, are essential.

**Disclosure of interest statement** This work was funded by the Orebro County Council Research Committee and the Foundation for Medical Research at Orebro University Hospital, Sweden. We are grateful to Michael Huband and John Mueller, AstraZeneca for providing the AZD0914 compound and to ECDC, particularly Gianfranco Spiteri and Andrew Amato-Gauci, for funding and coordinating the European Gonococcal Antimicrobial Surveillance Programme (Euro-GASP).

---

**006.3 HOST-DIRECTED THERAPEUTICS AS ADJUNCTIVE THERAPY FOR ANTIBiotic-RESISTANT NEISSERIA GONORRHOEAE**

I Ledac*, A Ijene. Uniformed Services University of the Health Sciences, Bethesda, MD, 20814, USA

10.1136/sextrans-2015-052270.111

**Background** Due to the emergence of antibiotic resistance, novel therapies such as host-directed therapeutics (HDT) are being explored as adjunctive therapies against *Neisseria gonorrhoeae* (Gc). Inhibitors of histone deacetylases (HDACi) are HDTs that restore the balance between host histone acetylases and HDAC, the latter of which are induced by pathogens to enhance infection. We recently reported that sulforaphane (SFN), a natural HDACi, induced effectors with anti-Gc activity in tissue culture cells and reduced colonisation of female mice. Here we tested SFN against the multidrug-resistant strain HO41 and its potential to increase the susceptibility of this strain to antibiotics.

**Methods** ME180 cervical epithelial cells were treated with 40 or 80 \(\mu\)M SFN or no SFN for 24 h. Cell culture supernatants were then incubated with HO41; in some experiments, sub-lethal concentrations of ciprofloxacin (CIP) or cefixime (CFX) were added to the supernatants. The number of viable Gc recovered after a 4-hour incubation was determined by quantitative culture.

**Results** Supernatants from cervical cells treated with 40 or 80 \(\mu\)M SFN reduced the survival of strain HO41 to 53% and 20%, respectively, relative to recovery from supernatants from untreated cells. Addition of sub-inhibitory concentrations of CIP or CFX to supernatants from SFN-treated (40 \(\mu\)M) cells resulted in a dose-dependent reduction in survival, with 4 \(\mu\)g/mL CIP resulting in 27% survival. Two and 4 \(\mu\)g/mL doses of CFX resulted in 13% and 7% survival, respectively. Addition of 1, 2 and 4 \(\mu\)g/mL of CFX to supernatants from cells treated with 80 \(\mu\)M SFN reduced survival to 15%, 8% and 1%, respectively.

**Conclusion** The susceptibility of strain HO41 to CIP or CFX is enhanced when tested in tissue culture media containing SFN-induced host effectors. These findings suggest that a combination of HDACi and antibiotics may be an effective adjunct therapy against antibiotic-resistant Gc.

**Disclosure of interest statement** This project was funded by grant RO1 AI43053 from the US NIH. No pharmaceutical grants were received in the development of this study.

---

**006.4 AZITHROMYCIN VERSUS DOXYCYCLINE FOR UROGENITAL CHLAMYDIA: A RANDOMISED CLINICAL TRIAL IN FEMALES AND MALES IN YOUTH CORRECTIONAL FACILITIES**

1WM Gelder*, 2A Uniyal, 3Y Lee, 5Y Lensing, 5S Johnson, 6CW Peny, 7CM Kadnika, 8PR Kendal. University of Alabama at Birmingham; 2University of Southern California; 3University of Arkansas for Medical Sciences; 4FH 360; 5Los Angeles County Department of Health Services, Juvenile Court Health Services

10.1136/sextrans-2015-052270.112

**Background** Urogenital *Chlamydia trachomatis* infection (*chlamydia*) remains highly prevalent and causes significant reproductive morbidity. Earlier randomised chlamydia treatment trials comparing azithromycin 1g versus a 7-day regimen of doxycycline 100mg twice daily reported high cure rates, but used less sensitive diagnostics and results may have been confounded by chlamydia re-exposure or doxycycline nonadherence. Recent studies have raised concern about azithromycin efficacy for chlamydia.

**Methods** We conducted a randomised trial comparing azithromycin versus doxycycline for chlamydia in males and females in youth correctional facilities (YCFs) to evaluate for noninferiority of azithromycin compared to doxycycline. Treatment was directly observed and participants had no furloughs from the YCF throughout the study. The primary endpoint was treatment failure at 28 days after treatment initiation, determined by nucleic acid amplification test results, sexual history, and *C. trachomatis* OmpA genotyping.

**Results** Of 567 participants enrolled, 284 were randomised to azithromycin and 283 to doxycycline. There were 155 participants in each treatment arm comprising the per protocol population: 63% male and 35% female. No treatment failures occurred in the doxycycline arm. In the azithromycin arm, five treatment failures occurred (3.2%; 95% CI: 0.4–7.4%): four were males (3.9%; 95% CI: 1.1–9.7%) and one female (1.9%; 95% CI: 0.0–10.1%). The observed failure rate difference in the treated arms was 3.2%, with a 90% upper CI of 5.9%, exceeding the predetermined 5% cutoff for establishing azithromycin noninferiority.

**Conclusion** Doxycycline had a 100% cure rate for chlamydia. Noninferiority of azithromycin to doxycycline was not established in this study, although azithromycin treatment failures occurred infrequently and the high azithromycin cure rate was consistent with earlier chlamydia treatment trials. Because of possible chlamydia treatment failures when azithromycin is used, further surveillance is needed and doxycycline might be considered for persons with suspected chlamydia treatment failure following azithromycin treatment.

**Disclosure of interest statement** Nothing to Declare.