O06.2 *IN VITRO* COMBINATION TESTING AND SELECTION OF RESISTANCE TO ZOLIFLODACIN COMBINED WITH SIX ANTIMICROBIALS FOR *N. GONORRHOEAE*

[1]Sunniva Foerster, [2]George Drusano, [3]Daniel Golparian, [4]Michael Neely, [5]Laura Piddock, [5]Emilie Alirol, [6]Magnus Unemo*. *[1]WHO Collaborating Centre for Gonorrhoea and other STIs, Örebro, Sweden; [2]University of Florida, Orlando, USA; [3]Örebro University, WHO Collaborating Centre for Gonorrhoea and Other STIs, Örebro, Sweden; [4]University of Southern California, Los Angeles, USA; [5]Global Antibiotic Research and Development Partnership (GARDP), Geneva, Switzerland; [6]World Health Organization Collaborating Centre for Gonorrhoea and Other STIs, Faculty of Medicine of Health, Örebro University, Department of Laboratory Medicine, Microbiology, Örebro, Sweden*

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Background Resistance in *Neisseria gonorrhoeae* to all therapeutic antimicrobials for gonorrhoea has emerged. Novel antimicrobials for treatment are imperative and the first-in-class spiropyrimidinetrione zoliflodacin appears promising. Zoliflodacin could be introduced in dual antimicrobial therapies to prevent the emergence and/or spread of resistance. We investigated the *in vitro* activity and induction/selection of resistance to zoliflodacin alone and in combination with six novel, currently or previously used therapeutic antimicrobials against *N. gonorrhoeae*.

Methods The international gonococcal reference strains examined were WHO F (wild-type), and WHO O, WHO V, and WHO X (strains with different AMR profiles). Zoliflodacin was evaluated alone or in combination with ceftriaxone, spectinomycin, gentamicin, tetracycline, cethromycin, and sitafloxacin in checkerboard assays, time-kill curve analysis, and induction/selection of resistance studies.

Results Zoliflodacin alone or in combination with all six antimicrobials showed rapid rates of *in vitro* bacterial killing against all examined strains in time-kill studies. Tetracycline or cethromycin combined with zoliflodacin decreased the rate of zoliflodacin growth inhibition, while ceftriaxone or gentamicin increased the rate of cell killing. The frequency of induced/selected zoliflodacin resistance mutations was low for zoliflodacin and further reduced for all antimicrobial combinations. All resistant mutants contained the GyrB mutations D429N, K450T or K450N, resulting in zoliflodacin MICs of 0.5–4 mg/L consistent with previous results.

Conclusion Zoliflodacin, alone or in combination with STI therapeutic antimicrobials has a rapid and high *in vitro* efficacy against gonococci with low resistance emergence. Zoliflodacin remains a promising novel oral therapeutic for gonorrhoea monotherapy and as part of dual antimicrobial therapy with low resistance emergence potential. A phase III clinical trial evaluating efficacy and safety of zoliflodacin for uncomplicated gonorrhoea treatment is planned in 2019.

Disclosure No significant relationships.

O06.3 EFFICACY OF RESISTANCE GUIDED THERAPY FOR *MYCOPLASMA GENITALIUM* USING DOXYCYCLINE FOLLOWED BY AZITHROMYCIN OR MOXIFLOXACIN

[1]Duygu Durukan*, [1]Tim Read, [1]Christopher Fairley, [2]Gerald Murray, [1]Michelle Doyle, [1]Eric Chow, [1]Lenka Vodstrcil, [3]Elisa Mokany, [3]Litty Tan, [1]Marcus Chen, [1]Catriona Bradshaw. *[1]Alfred Health, Melbourne Sexual Health Centre, Carlton, Australia; [2]The Royal Women's Hospital, Centre for Women's Infectious Disease Research, Parkville, Australia; [3]SpeeDx Pty Ltd., Sydney, Australia*

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Background Macrolide-resistance in *Mycoplasma genitalium* (MG) exceeds 50% in many nations and increasing quinolone-resistance is reported. Recent data showed resistance-guided therapy (RGT) using doxycycline then sitafloxacin for macrolide-resistant MG cured 92% of infections and doxycycline-azithromycin for macrolide-susceptible MG cured 95%. As sitafloxacin is not widely available, we undertook a study of RGT to evaluate the efficacy of moxifloxacin in RGT to provide data that is relevant to international guidelines and to assess the efficacy of this alternative approach in a population with 15–20% quinolone-resistance (ParC mutations).

Methods Patients attending Melbourne Sexual Health Centre between April 2017-June 2018 with urethritis, cervicitis or proctitis were treated with doxycycline (7 days)and recalled if positive for MG. Macrolide-susceptible cases received azithromycin (1g, then 500 mg daily 3 days)and resistant-cases received moxifloxacin (400 mg daily, 7 days). Patients attended for test of cure (TOC) following treatment. Adherence and side effects were recorded. Patients were included in the efficacy analysis if they were treated in accordance with RGT protocol, were not at high risk of reinfection and had a 14–90 day TOC.

Results 382 participants (80 female/106 heterosexual male/196 MSM) were included: 109 (28.5%) had macrolide-susceptible MG and 273(71.5%) macrolide-resistant MG. Doxycycline-azithromycin cure was 95.4% (95%CI 89.7–98%) and doxycycline-moxifloxacin cure was 91.9% (95%CI 88.1–94.6%). Median time to TOC was 27 days (IQR=22–35). Doxycycline-azithromycin data was combined with our prior RGT study and the pooled estimate of cure (n=186) was 95.2% (95%CI 91.1–97.4%). Analysis of selected macrolide resistance is underway but will not exceed 4.3% (95%CI 2.2–8.6%).

Conclusion Despite 15–20% quinolone resistance in Melbourne the sequential strategy of doxycycline-moxifloxacin achieved unexpectedly high cure (92%), and did not differ to doxycycline-sitafloxacin, a more effective quinolone, suggesting preceding doxycycline may improve cure through reducing pre-treatment load. Doxycycline followed by azithromycin for susceptible infections consistently achieves 95% cure and low levels of selected resistance (<5%).

Disclosure No significant relationships.

O06.4 EFFICACY AND COST-EFFECTIVENESS OF QHPV VACCINE WITH IMIQUIMOD OR PODOPHYLLOTOXIN FOR PATIENTS WITH ANOGENITAL WARTS (HIPVAC)

[1]Richard Gilson*, [2]Kate Bennett, [3]Frank Sandmann, [2]Macey Murray, [2]Caroline Doré, [1]Lewis Haddow, [1]Diarmuid Nugent, [4]Charles Lacey, [3]Mark Jit, [5]Kate Soldan, [2]Emilia Caverly, [6]Mayura Nathan, [1]Andrew Copas. *[1]University College London, Institute for Global Health, London, UK; [2]University College London, Institute of Clinical Trials and Methodology, London, UK; [3]London School of Hygiene and Tropical Medicine, Department of Infectious Disease Epidemiology, London, UK; [4]University of York, Centre for Immunology and Infection, York, UK; [5]Public Health England, HIV/STI, London, UK; [6]Homerton University Hospital NHS Foundation Trust, London, UK*

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Background The comparative efficacy, and cost-effectiveness, of imiquimod (IMIQ) or podophyllotoxin (PDX) cream, either alone or in combination with the quadrivalent HPV vaccine (Gardasil®, Merck) in the treatment and prevention of recurrence of anogenital warts is unknown.

Methods A randomised, controlled, multi-centre, partially-blinded factorial trial with an economic evaluation. Participants had new or recurrent warts; not treated within 3 months; no qHPV-vaccination. Randomisation, stratified by gender,