caused by masturbation from 3.9% (95%CI 2.0 to 6.8) to 7.8% (95%CI 4.3 to 15.6) which was primarily due to solo masturbation (estimates of 3.5% (95%CI 1.7 to 6.1) to 7.1% (95%CI 4.0 to 13.1)) with little contribution from partnered masturbation (estimates of 0.3% (95%CI 0.0 to 1.5) to 0.7% (95%CI 0.1 to 4.0)).

Conclusions Our model suggests that saliva use as a lubricant for solo/partnered masturbation plays a negligible role in chlamydia transmission in MSM.

STI treatment

011.1 TOLERABILITY OF TOPICAL IMIQUIMOD AGAINST HIGH-RISK HUMAN PAPILLOMAVIRUS INFECTION IN MEN-WHO-HAVE-SEX-WITH-MEN LIVING WITH HIV

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Background Men-who-have-sex-with-men (MSM) living with HIV have a high prevalence of high-risk human papillomavirus (hrHPV) in the anus, and a high incidence of anal cancer. We conducted an open-label, single-arm pilot study to assess the utility of imiquimod cream against hrHPV among MSM living with HIV.[ACTRN12617001355369]

Methods The study was conducted at Melbourne Sexual Health Centre between April 2018 and June 2020. MSM aged ≥18 years, living with HIV, who tested positive for any anal hrHPV on clinician-collected swabs were eligible. We instructed men to apply 5% imiquimod cream (6.25 mg) intra-anally and peri-anally 3 doses per-week for 16-weeks (Phase 1), followed by a maintenance period of 1 dose per-week for 48-weeks (Phase 2). We collected adverse events (AE) using text messages and questionnaires.

Results Thirty MSM were enrolled to phase 1 and 27 completed the week 16 follow-up (median age 50). Twenty-four MSM (86%) applied at least 50% of imiquimod doses. All men reported AE, with 39.5% reporting grade 1, 39.5% grade 2, and 21% grade 3 AEs. Eighteen MSM (67%) required treatment interruption. The reasons for interruption were haemorrhoids (n=3), herpes genitalis reactivation (n=2), and grade 2–3 AEs (n=11) such as irritation, itching and tenderness. 60% of MSM with grade 2 (n=6) and 33% with grade 3 AEs (n=2) opted to continue to phase 2. Eighteen MSM were enrolled to phase 2 and 13 completed the week 48 follow-up. All MSM took at least 50% of doses. No treatment-limiting AEs were reported. 10 MSM in phase 1 (37%) and none in phase 2 reported their sex life was negatively impacted from imiquimod use.

Conclusion Intra-anal and peri-anal imiquimod at 3 doses per-week was poorly tolerated over 16 weeks and most men required treatment interruption due to AEs. In contrast, once-a-week application was well tolerated with no treatment-limiting AEs reported over 48-weeks.

011.2 TREATMENT EFFICACY OF 1G AZITHROMYCIN VERSUS 100MG DOXYCYCLINE BI-DAILY FOR SEVEN DAYS FOR ASYMPTOMATIC RECTAL CHLAMYDIA TRACHOMATIS

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Background Rectal chlamydia is the most commonly diagnosed bacterial sexually transmissible infection among men who have sex with men (MSM) and there is increasing concern about rectal chlamydia in women.

The absence of randomised controlled trial (RCT) evidence means there is ongoing debate about the most efficacious treatment. **Methods** We conducted a double-blind double-dummy RCT to compare the efficacy of azithromycin 1g singledose with 7-days doxycycline 100mg twice daily for the treatment of asymptomatic rectal chlamydia.

MSM diagnosed with asymptomatic rectal chlamydia infection at five sexual health clinics in Australia were randomly assigned to receive either doxycycline or azithromycin. Primary outcome was rectal chlamydia microbiological cure defined as a negative nucleic acid amplification test at four weeks. Logistic regression was used to calculate the difference in microbial cure within a modified intention to treat population that excluded L2 serovar diagnoses post-recruitment.

Results We enrolled 625 men and randomly assigned 314 to doxycycline and 311 to azithromycin between August 2016 and August 2019. Primary outcome data were available for 290 (92%) assigned to doxycycline and 297 (96%) assigned to azithromycin. In the modified intention to treat population, the observed microbiological cure was 281/290 (96.9%; 95% CI: 94.9, 98.9) for doxycycline and 227/297 (76.4%; 95% CI: 73.8, 79.1) for azithromycin, with an adjusted risk difference of 19.9% (95% CI: 14.6, 25.3; p<0.001) in favour of doxycycline. Adverse events including nausea, diarrhoea and vomiting were reported by 33.8% (98/290) receiving doxycycline and 45.1% (134/297) azithromycin (risk difference=-11.3%; 95% CI: -19.5, -3.2). Chlamydial load at baseline was greater for those in the azithromycin arm who failed treatment compared to those who did not.

Conclusions The efficacy of doxycycline was found to be substantially superior to azithromycin in the treatment of asymptomatic rectal chlamydia infection among MSM. Doxycycline must replace azithromycin as firstline treatment for symptomatic rectal chlamydia.

011.3 CLINICAL IMPROVEMENT AFTER TREATMENT FOR URETHRITIS: THE ROLE OF MYCOPLASMA GENITALIUM

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Introduction *Mycoplasma genitalium* (MG) is associated with urethritis in men. Treatment of urethritis with azithromycin is expected to become less effective in clients infected with MG due to an increase in macrolide resistance-associated mutations (MRAM) in MG. Therefore, we examined clinical improvement of symptoms in men receiving empirical treatment for urethritis, and correlated the clinical outcome to *Neisseria gonorrhoeae* (NG), *Chlamydia trachomatis* (CT), MG and MRAM status.

Methods At the STI clinic in Amsterdam, the Netherlands, empirical treatment for gonococcal urethritis is 1g ceftriaxone and for non-gonococcal urethritis (NGU) azithromycin 1g. From May 2018 through November 2019, we tested urine samples of all men with urethritis for CT, NG and MG using TMA assays. MG-positive samples were tested for MRAM using qPCR. Men were sent a text message two weeks after receiving empirical treatment, enquiring after the clinical improvement of urethritis.

Results We evaluated 2505 cases of urethritis. The positivity rate of NG, CT and MG was 26% (648/2489), 29% (726/2489) and 23% (522/2288) respectively. In 768/2288 (34%) of the cases no NG, CT or MG was detected. The majority of the cases (53%) were infected by one bacterial species, 18% only by NG, 486/2288 21% only by CT and 14% only by MG. Evaluation of presence of MG-MRAM could be assessed in 439/522 (84%) samples. The prevalence of MG-MRAM was 74% (327/439). In 642 (26%) cases men responded to the enquiry, of whom 515 (80%) indicated that their symptoms had improved or disappeared; 91% (159/174) in NG cases, 82% (160/195) in CT cases, 86% (24/28) in MG wild-type cases, and 60% (56/94) in MG-MRAM cases ($p < 0.001$).

Conclusions The efficacy of empirical treatment of NGU with macrolides is limited by the presence of MG-MRAM. Testing for MG-MRAM is advised in case of NGU.

011.4 IMPACT OF SCREENING OF MYCOPLASMA GENITALIUM AND ITS MACROLIDE RESISTANCE IN MEN WHO HAVE SEX WITH MEN LIVING IN AUSTRALIA

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Background There is rising rate of antimicrobial resistance for *Mycoplasma genitalium* (MG). We examined the impact of various screening strategies on the incidence and prevalence of MG among MSM.

Methods A compartmental mathematical model of MG transmission among MSM was constructed and calibrated using data from the Melbourne Sexual Health Centre. The model stratified men by symptom status, sexual risk behaviours and whether or not they had MG with macrolide resistance. We simulated the impact on endemic steady-state MG prevalence and incidence of the following screening scenarios, namely screening: 1) no MSM; 2) only symptomatic MSM (the current recommendation); 3) all symptomatic and high-risk asymptomatic MSM; and 4) all MSM.

Results The model predicts that the overall endemic MG prevalence is 9.1% (95% CI: 7.9–10.0) in the current situation where screening is only offered to symptomatic MSM (base-

case). This would increase to 11.4% (95% confidence intervals (CI): 10.2–13.7) if no MSM are offered screening, but would decrease to 7.3% (95% CI: 5.7–8.4) if all symptomatic and high-risk asymptomatic MSM were offered screening and 6.4% (95% CI: 4.7–7.7) if all MSM were offered screening. Increasing coverage of MSM screening strategies shows a similar effect on decreasing endemic MG incidence. When evaluating the simultaneous impact of treatment effectiveness and screening coverage, we found that offering screening to more MSM may reduce the overall prevalence but leads to a higher proportion of macrolide-resistant MG, particularly when using treatment regimens with lower effectiveness.

Conclusions Based on the available treatment options, offering screening for MG to other MSM (beyond the currently recommended group of symptomatic MSM) could slightly reduce the prevalence and incidence of MG. However, further increasing screening coverage must be weighed against the impact of lower treatment effectiveness, increasing the selection of macrolide resistance, and other negative consequences related to AMR and management.

011.5 HETEROGENEITY OF MYCOPLASMA GENITALIUM RESISTANCE TO MACROLIDES AND FLUOROQUINOLONES AMONG MEN WHO HAVE SEX WITH MEN INITIATING PREP IN WEST-AFRICA

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Background An alarming high prevalence of antimicrobial resistance in *Mycoplasma genitalium* (MG) has been reported among men who have sex with men (MSM) in many parts of the world. However, data on West-Africa are lacking. Our aim was to assess the prevalence of macrolide and fluoroquinolone resistance-associated mutations (RAMs) of MG among MSM initiating PrEP in Burkina Faso, Côte d'Ivoire, Mali, and Togo.

Methods At the baseline visit 594 MSM were screened for MG in the urethra, anorectum, and pharynx using the S-DiagMGTV multiplex assay. Positive MG samples were genotyped via Sanger sequencing of the 23S rRNA. Moreover, RAMs in the quinolone resistance determining region (QRDR) of the *parC* and *gyrA* gene were detected by Sanger sequencing.

Results MG was detected in 115/594 participants (19.4%). Country-specific prevalence of MG was, in descending order: Togo (25.7%, 26/101), Burkina Faso (23.9%, 27/113), Mali (18.3%, 48/263) and Côte d'Ivoire (12.0%, 14/117). Of 107 samples with available resistance data, none had RAMs to macrolides and 27 (25.2%) had RAMs to fluoroquinolones. QRDR mutations were more frequent in Mali (38.6%, 17/44) than in Togo (25.0%, 6/24) and Côte d'Ivoire (21.4%, 3/14). All except one sample collected in Burkina Faso were of wild type (96.0%, 24/25). RAMs at