enough. Multidrug resistant *M. genitalium* strains including macrolide or fluoroquinolone-resistance are increasing and analysis of *M. genitalium* strains is important.

**Methods** *M. genitalium* strains were isolated from urinary sediment of *M. genitalium*-positive urine-specimens from Japanese men. The antimicrobial susceptibility testing was examined by the cell-culture method. The tested antimicrobials were azithromycin (AZM), clarithromycin (CLR), doxycycline (DOX), minocycline (MIN), ciprofloxacin (CIP), levofloxacin (LVX), moxifloxacin (MOX) and sitafloxacin (STF). 

**Results** Total 14 *M. genitalium* strains were isolated from Japanese patients. Four strains were isolated in 2003, and other 10 strains were isolated in 2017 and 2018. MICs0 and MIC90 were \( \geq 16 \text{ mg/L} \) and \( \geq 16 \text{ mg/L} \) for AZM, \( \geq 16 \text{ mg/L} \) and \( \geq 16 \text{ mg/L} \) for CLR, .5 mg/L and 1 mg/L for DOX, 0.25 mg/L and 0.5 mg/L for MIN, 8 mg/L and \( \geq 16 \text{ mg/L} \) for CIP, 4 mg/L and \( \geq 16 \text{ mg/L} \) for LVX, 1 mg/L and 4 mg/L for MOX and 0.125 mg/L and 0.5 mg/L for STFX, respectively. There was no macrolide-resistant strains in 2003, but 9 strains isolated in 2017 and 2018 were resistant to macrolide. Seven strains had high MICs more than 1 mg/L for MOX, but only one strain had high MIC 1 mg/L for STFX. Except for one strain which had MIC 2 mg/L for DOX, MICs of other strains for DOX or MIN were shown between 0.125 mg/L and 1 mg/L.

**Conclusion** Among 14 strain, 7 strains had high MICs for macrolide and MOX. In Japan, multidrug-resistant *M. genitalium* strains were increasing. Limitation of this study was that we tried to isolated *M. genitalium* strains form patients with treatment-failure cases by macrolide or fluoroquinolone in 2017 and 2018.

**Disclosure** No significant relationships.

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**P614 MACROLINE RESISTANCE IN MYCOPLASMA GENITALIUM IS STRONGLY ASSOCIATED WITH STI CO-INFECTION**

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**Background** Co-infections can compromise empirical therapy when treating genital discharge syndrome (GDS). In the UK, lack of testing for *Mycoplasma genitalium* (MG), a common cause of GDS, is particularly challenging because of increasing rates of macrolide antimicrobial resistance (AMR). We calculated prevalence of MG co-infections, macrolide resistance and associated risk factors in a diverse symptomatic sexual health clinic (SHC) population.

**Methods** SHC attendees in England aged \( \geq 16 \) years, symptomatic of an STI provided: vulvovaginal swabs (females), first void urine (men-who-have-sex-with-women (MSW)) and men-who-have-sex-with-men (MSM)), pharyngeal and rectal swabs (MSM). Routine clinic *Chlamydia trachomatis* (CT)*Neisseria gonorrhoeae* (NG) results were obtained and PCR used for MG detection. Macrolide resistance was determined using Sanger sequencing. Unadjusted and risk factor adjusted odds ratios (ORs) for being MG resistant were derived using logistic regression models.

**Results** Prevalence of MG was 9.5% across all groups and 6.5%(95%CI:4.6–8.9), 12.8%(9.1–17.3) and 12.3%(8.5–17.1) in females, MSW and MSM, respectively (p<0.005). Among patients infected with CT and/or NG, co-infection with MG was 18.7%(8.9–32.6), 9.5%(3.6–19.6) and 4.9%(1.4–12.2), respectively (p<0.05). Among MG positives, macrolide resistance was 62.1%(42.3–79.3), 77.4%(58.9–90.4), and 90.9%(70.8–98.9), respectively. In univariate analysis, being MSM (OR:3.0[95%CI:1.6–5.7]) compared to white ethnicity, reported more than one regular partner (3.1[1.2–8.1]), having an STI co-infection (10.13 [4.62–22.25];p<0.001) and a recent STI diagnosis (2.09[1.18–3.68];p<0.005) were associated with having macrolide resistant MG. In multivariable analysis, being MSM (aOR:3.31 [1.44–7.61]), being of black ethnicity (3.31[95%CI:1.58–6.94]; p<0.005), more than one regular partner (3.2[1.21–9.08];
p<0.005) and having a co-infection (10.35[4, 32–25.30]; p<0.001) remained significant.

**Conclusion** Having an STI co-infection with MG was the strongest indicator of likelihood of having macrolide resistance which was also associated with being in particular risk groups. These findings are suggestive that macrolide resistance may be maintained in discreet sexual networks that are themselves exposed to antibiotic selection pressures.

**Disclosure** No significant relationships.

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**P615** Clinical improvement after standard treatment for urethritis: the role of Mycoplasma genitalium

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**Background** Mycoplasma genitalium (MG) is a sexually transmitted organism associated with urethritis in men. We examined clinical improvement of symptoms in men treated syndromically for urethritis, and correlated the clinical outcome to MG positivity.

**Methods** At the STI clinic in Amsterdam, the Netherlands, urethritis is defined as the presence of ≥10 leucocytes per high power field in Gram stains of urethral discharge. The additional presence of intracellular gram-negative diplococci defines gonococcal urethritis. Point-of-care standard therapy for gonococcal urethritis is 1000 mg ceftriaxone and for non-gonococcal urethritis is azithromycin 1000 mg. From May 2018 onwards, urine samples of all men with urethritis were tested for presence of N. gonorrhoeae (NG), C. trachomatis (CT), and M. genitalium (MG) using TMA assays (Aptima, Hologic). These men were sent a text message two weeks after receiving standard therapy, with a questionnaire about improvement (including resolution) of their urethritis symptoms. We analyzed clinical improvement by MG status.

**Results** From May through December 2018, 1015 men presented with 1111 episodes of urethritis. Of 88 episodes, there were no results for MG. Of the remaining 1023 episodes, men responded to the text message in 379 cases (37%). Of 379 cases, 87 (23%) were positive for NG, 119 (31%) for CT, and 81 (21%) for MG. Clinical improvement was reported in 312 episodes (82%); this was 89% in NG cases; 82% in CT cases, and 72% in MG cases. Clinical improvement was reported by 92%(55/60), 85%(83/98) and 70%(35/50) of those with single infection with NG, CT or MG respectively (P=0.009); and by 80%(110/134) of those with none of these infections. Those with MG/CT co-infection had worse outcomes than those without MG (P=0.015).

**Conclusion** Among men with urethritis 82% improved after standard syndromic treatment. Those with MG/CT co-infection and those with MG single infection had significantly worse treatment results.

**Disclosure** No significant relationships.