

***Mycoplasma genitalium* infections in Queensland, Australia: alarming rates of resistance to macrolide and quinolone antibiotics**

Dr Emma Sweeney

SWEENEY EL¹, TREMBIZKI E¹, BUCKLEY C¹, BLETCHLY C², MENON A³, LANGTON-LOCKTON J⁴, NIMMO GR² AND WHILEY DM^{1,2}

¹ UNIVERSITY OF QUEENSLAND CENTRE FOR CLINICAL RESEARCH, THE UNIVERSITY OF QUEENSLAND

² PATHOLOGY QUEENSLAND CENTRAL LABORATORY, BRISBANE, QUEENSLAND

³ TOWNSVILLE SEXUAL HEALTH SERVICE, TOWNSVILLE, QUEENSLAND

⁴ METRO NORTH SEXUAL HEALTH SERVICE, BRISBANE, QUEENSLAND

Disclosures:

- SpeedX Pty Ltd. Provided kits and funding for DNA sequencing in this project

Join the Conversation @ASHMMEDIA #IUSTIAP18

BACKGROUND/AIMS & METHODS:

www.iustiap18.com

❖ *Mycoplasma genitalium* infections are becoming increasingly difficult to treat due to resistance to antibiotic treatments, including macrolides (azithromycin) and quinolones (moxifloxacin).

❖ Recent changes to treatment guidelines have been implemented; however, treatment failures are still commonplace.

❖ **Aim:** Determine the levels of antibiotic resistance in Queensland, Australia.

❖ *M. genitalium* positive DNA samples collected from South-East Queensland (SEQ) and North Queensland (NQ) – included sexual health clinics, rural/remote areas of North Queensland

❖ Nucleic acid samples screened for macrolide resistance (SpeedX ResistancePlus™ MG) and quinolone resistance (PCR and sequencing)

❖ Antibiotic resistance mutations compared according to: region (South-East Queensland; Northern Queensland), gender and sample collection site



Join the Conversation @ASHMMEDIA #IUSTIAP18

RESULTS:

www.iustiap18.com

- 477 *M. genitalium* samples screened
 - Even distribution of samples from each region and gender
- 62% had macrolide resistance mutations
- 10.5% had quinolone resistance mutations
- 7.8% had resistance mutations for both macrolide and quinolone antibiotics

Region	Macrolide resistance mutations	Quinolone resistance mutations	Dual resistance mutations
SEQ (n = 209)	136, 65.1%	39, 18.7%	28, 13.4%
Male (n = 159)	109, 68.5%	28, 17.6% ←	22, 13.8% ←
Female (n = 50)	27, 54.0%	11, 22% ←	6, 12% ←
NQ (n = 238)	141, 59.2%	8, 3.4%	7, 3.0%
Male (n = 110)	68, 61.8%	6, 5.5% ←	5, 4.5% ←
Female (n = 126)	71, 56.3%	2, 1.6% ←	2, 1.6% ←
Undisclosed (n = 2)	2, 100.0%	0, 0.0%	0, 0.0%

- Male rectal samples harboured the highest levels of antibiotic resistance of all samples tested (samples incl. urine, urethral swabs, throat swabs, cervicovaginal swabs)
 - **Macrolide resistant (76%), Quinolone resistant (19%), Dual resistance (16%)**

Join the Conversation @ASHMMEDIA #IUSTIAP18

CONCLUSIONS/IMPLICATIONS:

www.iustiap18.com

- Antibiotic resistance levels in Queensland are on par with other reports in Melbourne and Sydney
 - **Regional differences in antibiotic resistance are of interest**
 - Antibiotic resistance mutations very high among male rectal samples (proxy for MSM)
- **Clinical implications:** Screening for antibiotic resistance is important tool in successful treatment of patients infected with *M. genitalium*
 - Allows clinicians to make informed decisions regarding best treatment options
- **Resistance-guided treatment of *M. genitalium* now occurring in some parts of Australia**
 - Implementation in Queensland possible, with a view to improving rates of cure & decrease clinical treatment failures

Join the Conversation @ASHMMEDIA #IUSTIAP18