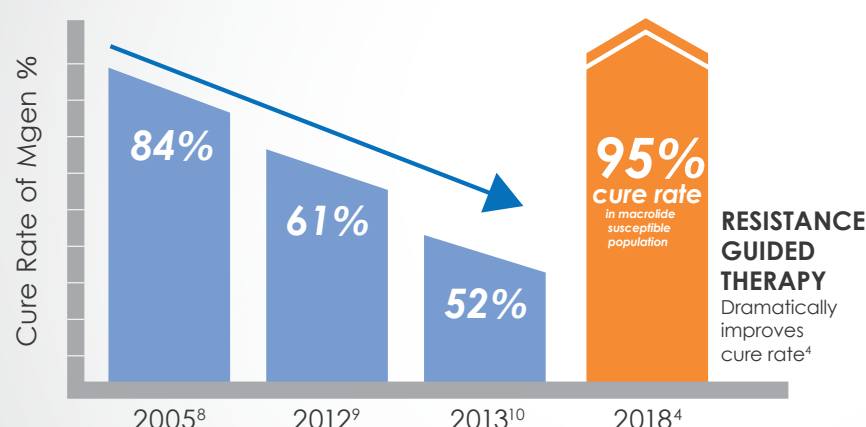


Emerging STI Superbug: *Mycoplasma genitalium*

Antibiotic Resistance in *M. genitalium*

- ▶ *M. genitalium* (Mgen) is a recognised STI with clinical presentation similar to that of *Chlamydia trachomatis* (CT).¹
- ▶ Mutations in the 23S rRNA gene of *M. genitalium* have been linked with clinical treatment failure and high level *in vitro* macrolide resistance.²
- ▶ Macrolide resistance mediating mutations have been observed in 20-80% of cases in the UK, Denmark, Sweden, Australia, and Japan.^{3,4,6}
- ▶ Resistance is already developing towards the second-line treatment moxifloxacin (fluoroquinolone).⁴⁻⁶

Resistance Guided Therapy (RGT) uses diagnostics to inform treatment decisions

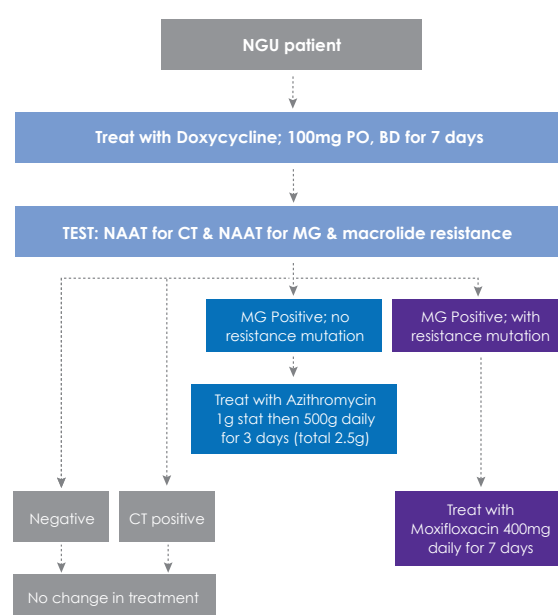


Macrolide resistance exceeds 50% in some populations.⁴

Cure rates after standard single-dose macrolide treatment can be as low as 40%.⁷

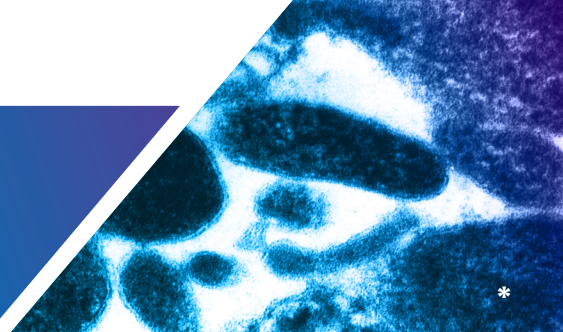
Greater than 92% of patients were cured using RGT⁴

- ▶ Management guidelines for Mgen infections (Figure 1) now recommend testing for macrolide resistance to help determine appropriate treatment.¹¹⁻¹³
- ▶ RGT applied to a population with high levels of antibiotic resistance and cure rates below 67% significantly improved patient outcome.⁴
- ▶ Cure rates in the Mgen macrolide-susceptible population exceeded 94%.⁴
- ▶ Cure rates in the Mgen macrolide-resistant population exceeded 92%.⁴
- ▶ Using doxycycline for initial STI treatment reduces overall use of azithromycin and reduces initial bacterial load which may improve subsequent Mgen treatment.⁴



Australian STI management guidelines for symptomatic non-gonococcal urethritis, proctitis, and cervicitis include a recommendation to assess the macrolide resistant status of *M. genitalium* infections to direct appropriate treatment.⁸

Mycoplasma genitalium



- ▶ *M. genitalium* (Mgen) was first identified in the 1980s¹⁴ and is now a recognised sexually transmitted infection (STI), more prevalent than *N. gonorrhoeae* in many populations.^{15,16} Mgen is associated with 10–35% of non gonococcal urethritis (NGU)^{17,18} and as much as 45% of persistent/recurrent urethritis.¹²
- ▶ Mgen is an extremely fastidious and slow growing organism,³ making nucleic acid amplification testing (NAAT) the only viable diagnostic solution.^{12,19} Treatment options are limited as mycoplasma lack a cell wall, thus are unaffected by many common antibiotics.^{18,19} Of additional concern is the apparent rapid rate of mutation of Mgen, resulting in an alarming increase in antimicrobial resistance (AMR) over relatively short periods of time.³

Potential Health Risks

- ▶ Most Mgen cases are asymptomatic, any associated symptoms are similar to other STIs such as chlamydia.¹
- ▶ The presence of Mgen is associated with an increased risk of NGU¹⁸ and of acquiring HIV.²⁰
- ▶ Increased risk of cervicitis, PID, preterm birth, spontaneous abortion and infertility in women has also been reported.²¹

Signs and Symptoms^{11,12}

- Urethritis
- Mucopurulent cervicitis
- Urethral or vaginal discharge
- Acute pelvic pain and/or PID

RISK FACTORS¹²

- Individuals with high-risk sexual behaviour
- Sexual contact with individuals diagnosed with an STI or PID
- Contact with individuals infected with *M. genitalium*

Improve patient management. Test for macrolide resistance.

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* Electron micrograph depicting *M. genitalium* adhering to Vero cells. EM performed by Jens Blom from culture by Jørgen Skov Jensen, Statens Serum Institut.

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