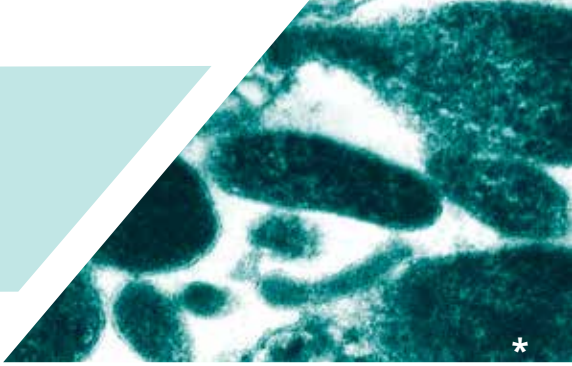
Emerging STI Superbug:
Mycoplasma genitalium



Antibiotic Resistance in *M. genitalium*

- *M. genitalium* is a recognised STI, treated syndromically, with clinical presentation similar to that of *Chlamydia trachomatis*.[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 20-50% of cases in the UK, Denmark, Sweden, Australia, and Japan.[3]
- Resistance is already developing towards the second-line treatment moxifloxacin (fluoroquinolone).[5]

Treatment options are limited. Inclusion of an antibiotic resistance test in your therapy algorithm will likely improve patient outcome.[5]

Up to 50% of infections may be resistant.[5]

Treatment fails in up to 30% of cases in some regions.[6]

Resistance screening may greatly improve patient outcomes.[6]

- Omitting a macrolide resistance screen when testing for MG, may lead to inappropriate patient antimicrobial treatment.
- Ineffective antimicrobial treatment can result in persistent infection and ultimate spread of MG which is antimicrobial resistant (AMR).
- Diagnosis is recommended using nucleic acid amplification testing (NAAT) which includes an assessment of macrolide resistance.[6]
- Screening for *M. genitalium* with a combination of detection and macrolide resistance mutations will provide much needed information to develop personalised antimicrobial treatments and improve patient outcome.[6,7]

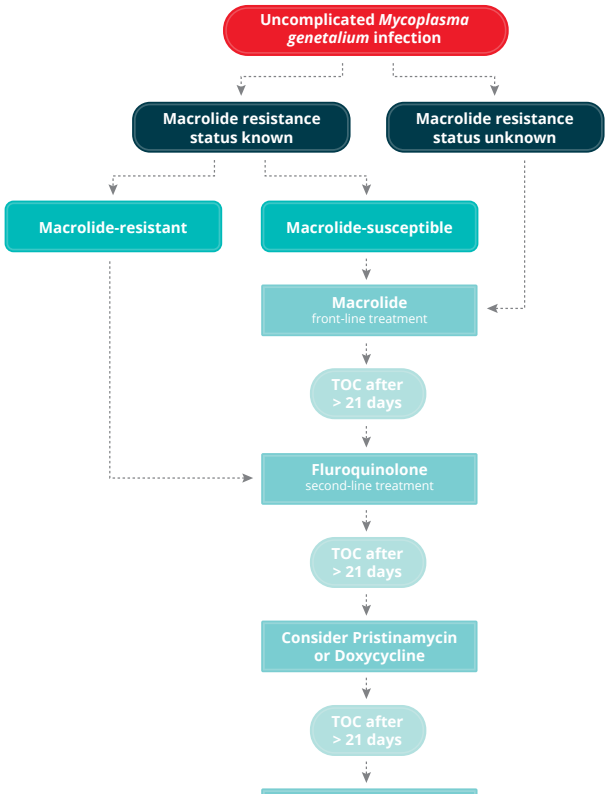


Figure 1 | *For patients infected with macrolide-resistant strains, determination of resistance status will reduce time to effective treatment and improve patient outcome*

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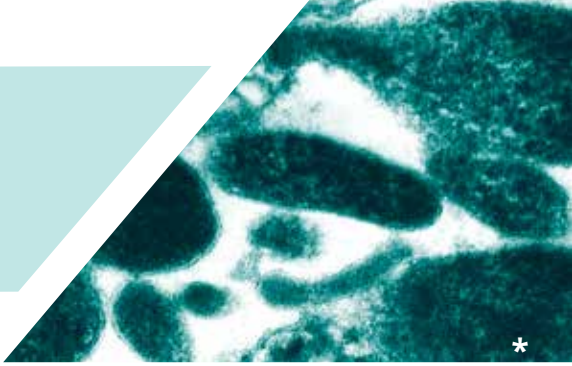
Mycoplasma genitalium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- *M. genitalium* (MG) was first identified in the 1980s[8] and is now a recognised sexually transmitted infection (STI), more prevalent than *N. gonorrhoeae* in many populations.[9] *M. genitalium* is associated with 10–35% of non gonococcal urethritis (NGU),[7,10] and as much as 45% of persistent/recurrent urethritis.[6]
- *M. genitalium* is an extremely fastidious and slow growing organism,[3] making nucleic acid amplification testing (NAAT) the only viable diagnostic solution.[6,9] Treatment options are limited as mycoplasma lack a cell wall, thus are unaffected by many common antibiotics.[9,10] Of additional concern is the apparent rapid rate of mutation of MG, resulting in an alarming increase in AMR over relatively short periods of time.[3]

Potential Health Risks

- Most *M. genitalium* cases are asymptomatic, any associated symptoms are similar to those caused by other STI pathogens such as *Chlamydia trachomatis*.[1]
- The presence of *M. genitalium* is associated with an increased risk of NGU[10] and of acquiring HIV.[12]
- Increased risk of cervictis, PID, preterm birth, spontaneous abortion and infertility in women.[11]

SIGNS AND SYMPTOMS

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

RISK FACTORS

- 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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