Implementation of *Mycoplasma genitalium* resistance testing within the diagnostic laboratory

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**Mycoplasma genitalium (MG)**

**Overview**

- MG is an established cause of urethritis, cervicitis, Pelvic Inflammatory Disease (PID). NAAT testing for MG is available in reference laboratories and some private laboratories.
- Treatment of MG is complicated due to emerging macrolide resistance caused by 23S rRNA mutations. Testing for macrolide resistance mutations can guide the choice of therapy.
- International guidelines recommend not to test low-risk asymptomatic patients for MG. This is conflicting to established CT/NG testing algorithms.
- Here we will demonstrate a flexible & cost effective testing algorithm, referencing the new Australian STI guidelines as an accepted treatment algorithm.

**Australian MG Guideline Evidence based recommendations**

- The prevalence of MG macrolide resistance is >50% in Australia ¹.
- Doxycycline only cures ~30% of MG infections, but can lower bacterial load in most cases ², ³, ⁴.
- Treatment of MG with macrolides is more successful in infections with lower bacterial load ², ³, ⁴.
- Greater confidence with sequential azithromycin treatment if prescribed based on macrolide-sensitivity.

**Management guidelines for NGU ¹**

**NGU patient**

- Treat with Doxycycline; 100 mg PO, BD for 7 days.
- Test: NAAT for CT & NAAT for MG & macrolide resistance.

**MG infection**

- MG Positive; no resistance mutation:
  - Treat with Azithromycin 1g stat then 500mg daily for three days (total 2.5g).
- MG Positive with resistance mutation:
  - Treat with Moxifloxacin 400mg daily for 7 days.

**CT positive**

- No change in treatment.

**Negative**

- CT positive
- No change in treatment.

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**How to implement MG testing within the laboratory**

**Considerations in deciding your test algorithm**

- Calculate the MG prevalence in your population. Based on published data, you can generally expect:
  - 1% low risk populations ⁵, ⁶, ⁷
  - 3% high risk populations ⁵, ⁶, ⁷
- Who to test? Patients with symptoms you may include are NGU, PID, Cervicitis, urethritis, anorectal condition. In most labs this number will be below 1,000 samples per annum.
- With these volumes, MG detection-only tests paired with a resistance reflex test will increase your workload and cost disproportionately.
- The Australian MG guideline recommends 7 days treatment with doxycycline ¹. This allows a lab to batch MG tests 1, 2 or 3 times per week to meet clinical demand.
- Here we will propose a testing/treatment algorithm which follows the Australian STI Management Guidelines for MG.

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**References**

1. The Australian STI management guidelines for use in primary care