Journal Article Summary


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**Main finding**

Treating *Mycoplasma genitalium* with Resistance Guided Therapy significantly improved overall cure rate.

<table>
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<tr>
<th>Previous cure rate of <em>M. genitalium</em> infections</th>
<th>Cure rate using Resistance Guided Therapy</th>
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<td>67%</td>
<td>&gt;92%</td>
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Previous cure rates from the clinic population exhibiting high levels of antibiotic resistance have been reported below 67% and as low as 40% when treating with standard front-line azithromycin therapy. The Resistance Guided Therapy approach in this study included switching from azithromycin to doxycycline for presumptive treatment of *M. genitalium* then testing with the ResistancePlus® MG test from SpeeDx to determine presence of resistance mutations. Subsequent treatment was directed based on the results of the ResistancePlus MG test leading to a greater than 92% overall cure rate.

**Key Points**

- The proportion of patients with *M. genitalium* cured following symptomatic care and standard recommended treatment has been in decline from 85% before 2009 to 67% after, and as low as 40% in a 2013 published study.
- This study demonstrates that > 92% of *M. genitalium* infections can be cured in a population where two-thirds of cases are macrolide-resistant and 20% of macrolide-resistant cases are likely quinolone resistant.
- A three tier Resistance Guided Therapy approach was tested:
  - Doxycycline replaced azithromycin as frontline treatment for NGU, proctitis, and cervicitis
  - Sample tested with ResistancePlus MG to detect *M. genitalium* and the presence of macrolide resistance mutations
  - Treatment for *M. genitalium* was guided by resistance result:
    - macrolide-susceptible infections received long course azithromycin
- macrolide-resistant infections received sitafloxacin

- Macrolide resistance mutations detected in 68.4% of infections
- Of the 77 macrolide-susceptible cases 94.8% were cured
- Of the 167 macrolide-resistant cases 92.2% were cured

- Using doxycycline for initial STI treatment had multiple benefits:
  - Reducing overall use of azithromycin, thus maintaining stewardship of this important antibiotic.
  - Reducing bacterial load of the infection, which the authors hypothesise improves the effectiveness of subsequent macrolide or quinolone treatment.

- The combination treatment used in this study for known macrolide-susceptible infections resulted in only 2.6% of initially susceptible cases developing resistance during treatment.
- Only 7.8% of infections failed sitafloxacin treatment in a population exhibiting up to 20% fluoroquinolone resistance.