

Journal Article Summary

Outcomes of resistance-guided sequential treatment of *Mycoplasma genitalium* infections: a prospective evaluation.

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Main finding

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

Previous cure rate of <i>M. genitalium</i> infections	Cure rate using Resistance Guided Therapy
67%	>92%

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.