MYCOPLASMA GENITALIUM: IS TREATMENT WORSE THAN CURE?
MINOCYCLINE INDUCED SERUM SICKNESS-LIKE REACTION: A CASE REPORT

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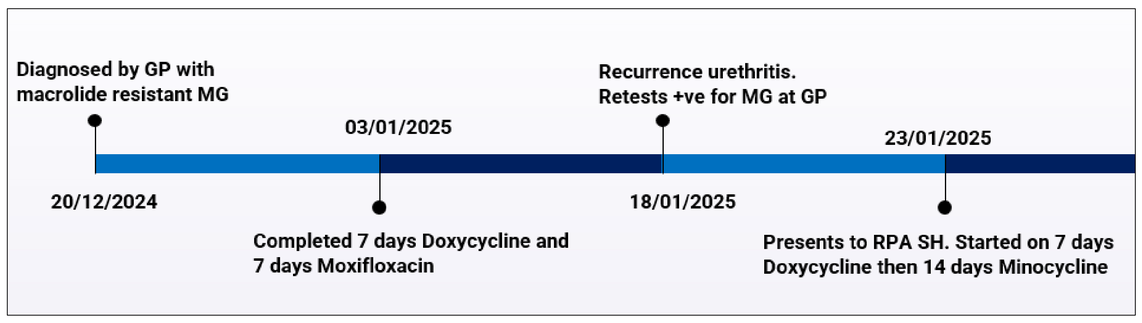
Background

- Mycoplasma genitalium (MG) infection is a sexually transmitted bacterium, with estimated prevalence of 1.3% in adults(1)
- MG can be asymptomatic or present as urethritis/cervicitis. There is limited evidence of MG as a cause of proctitis with emerging data of MG-associated PID and tubal infertility(2,3)
- Clinical management MG is challenging with diagnostic difficulties, increasing antimicrobial resistance and drug shortages
- Drug reactions to the tetracycline drug class, the backbone of treatment, include serum sickness-like reaction (SSLR) which is rare and presents as rash, fever, and polyarthralgia or polyarthritis
- Classic serum sickness is a type III, immune-complex mediated hypersensitivity, however the pathogenesis of SSLRs is unclear
- The pattern of cross-reactivity within the tetracycline class and risks of re-challenging patients is under-described.

Case Presentation

- A 30-year-old bisexual man was referred by his GP to RPA Sexual Health (RPASH) with persistent macrolide-resistant MG infection and symptoms of urethritis, having failed treatment with 7/7 doxycycline 100 mg BD then 7/7 moxifloxacin 400 mg OD
- No relevant past medical history, regular medications or known drug allergies. He reported no MG re-infection risk
- At RPASH, he was commenced on 7/7 Doxycycline 100 mg BD then 14/7 Minocycline 100 mg BD.

Figure 1: Timeline, initial presentation



- On day 14 of minocycline treatment, he became symptomatic with a widespread urticarial rash (Fig 2, 3), high fevers, tachycardia and symmetrical polyarthritis (ankles, hands, knees)
- On clinical examination there was no mucosal involvement, no hepato-splenomegaly, and no lymphadenopathy
- He was prescribed 5/7 daily prednisolone 25 mg, loratadine 10 mg mane and promethazine 25 mg nocte, prior to Immunology review
- Symptoms were resolved prior to Immunology review. He was diagnosed with SSLR to minocycline due to his clinical presentation, latency, and duration of his presentation (Fig 2)
- Major differential diagnosis included drug-induced lupus, however C3 was normal and anti-histone antibodies were negative (Table 1).

Figure 2: Minocycline Reaction Timeline

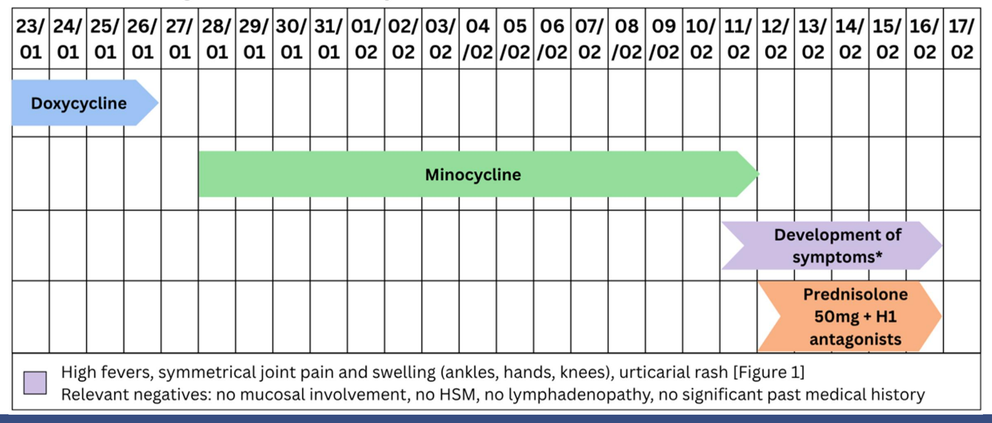


Figure 3: Urticarial rash (Day 14 of minocycline treatment)

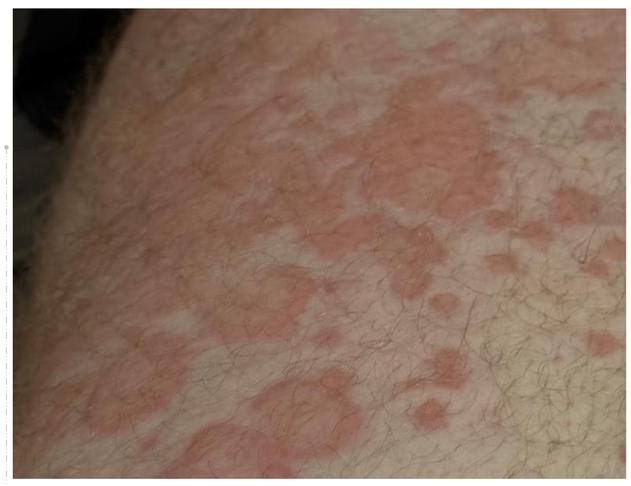


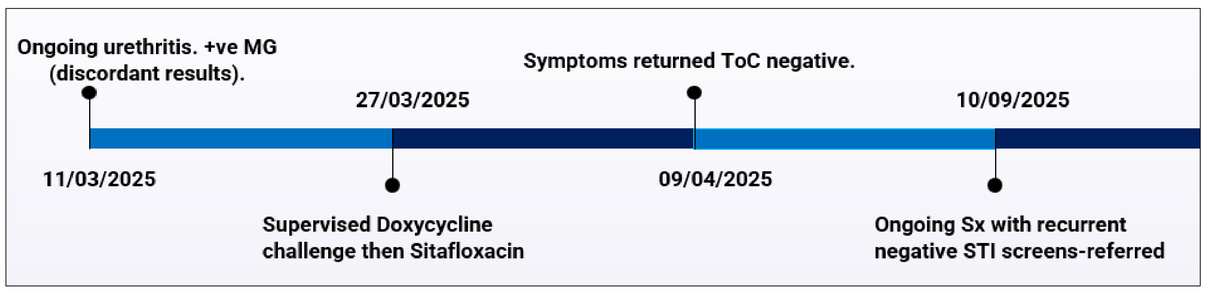
Table 1: Blood results post symptom resolution

Results	Value	Ref Range
WCC	4.9x10^9/L	4.0-10.0^9/L
ESR	1mm/hr	0-10mm/hr
CRP	<0.3mg/L	</=5.0mg/L
ANA	Not detected	
ENA	Not detected	
Histone Ab	Negative	
dsDNA Ab	1IU/mL	0-10IU/mL
C3	1.01g/L	0.90-1.80g/L
C4	0.23g/L	0.10-0.40g/L

Case Presentation (continued)

- The patient re-presented to RPASH four weeks after completing doxycycline/minocycline treatment with ongoing urethritis
- Re-testing for MG was positive, despite discordant results (Aptima positive and SpeeDx negative) resulting in significant psychological distress
- The patient requested access to sitafloxacin treatment (under SAS) which required a doxycycline lead-in
- A supervised doxycycline challenge was undertaken due to concerns regarding cross-reactivity within the tetracycline class
- Doxycycline was well-tolerated, with no evidence of immediate or delayed hypersensitivity reaction
- The patient completed 7/7 sitafloxacin 100 mg BD and experienced a recurrence of symptoms after completion of treatment, despite a negative test of cure (Fig 4)
- Residual symptoms associated with sexual dysfunction and pain, with a severe impact on mental health required multiple specialist referrals.

Figure 4: Timeline, re-presentation and doxycycline challenge



Summary

- Multi-drug resistant MG is an emerging threat and treatment options for refractory MG infection are limited
- Education is needed to ensure that clinicians test and treat MG only when clinically indicated and avoid tests of cure where possible
- The psychosocial impact of refractory MG genital infection may be severe and have long lasting impact on sexual function
- Minocycline-induced SSLR is uncommon and minimally described in the literature but highlights the need for new effective treatments with a safe and acceptable side effect profile.

References

1: World Health Organisation (2020) Global and regional STI estimates

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3: Hall, R. et al. (2024) 'Separating infectious proctitis from inflammatory bowel disease—a common clinical conundrum', Microorganisms, 12(12), p. 2395. doi:10.3390/microorganisms12122395.

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