Very high prevalence of macrolide resistance mutations in *Mycoplasma genitalium* in men presenting with acute and persistent non-gonococcal urethritis

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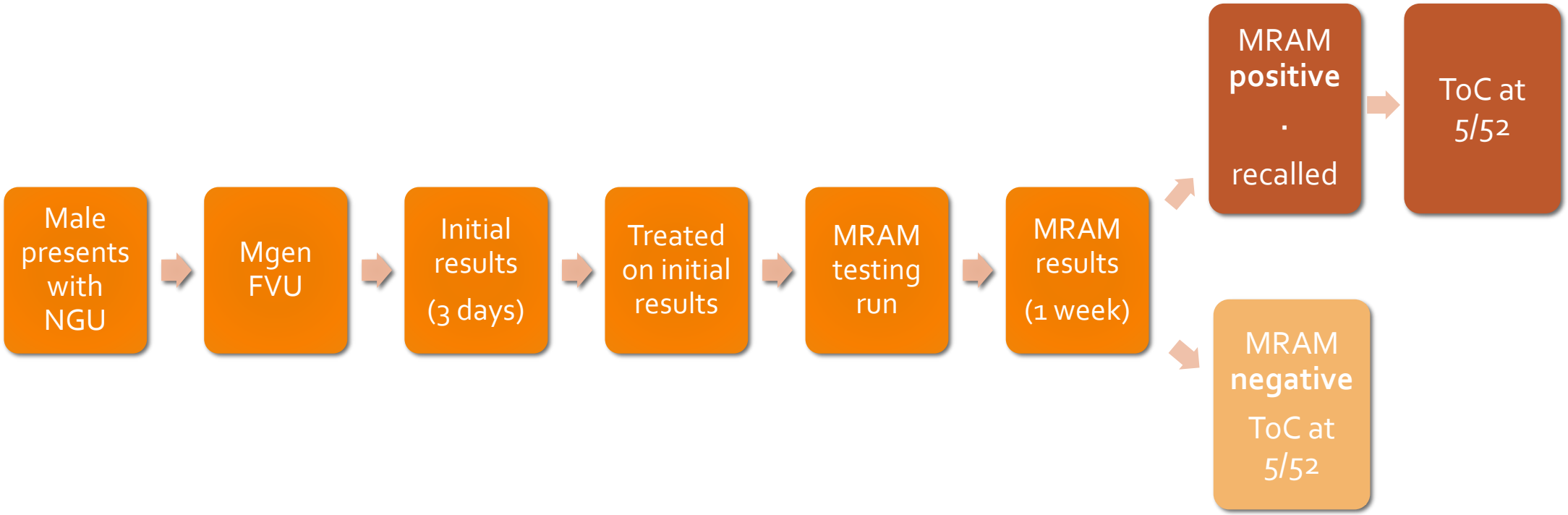
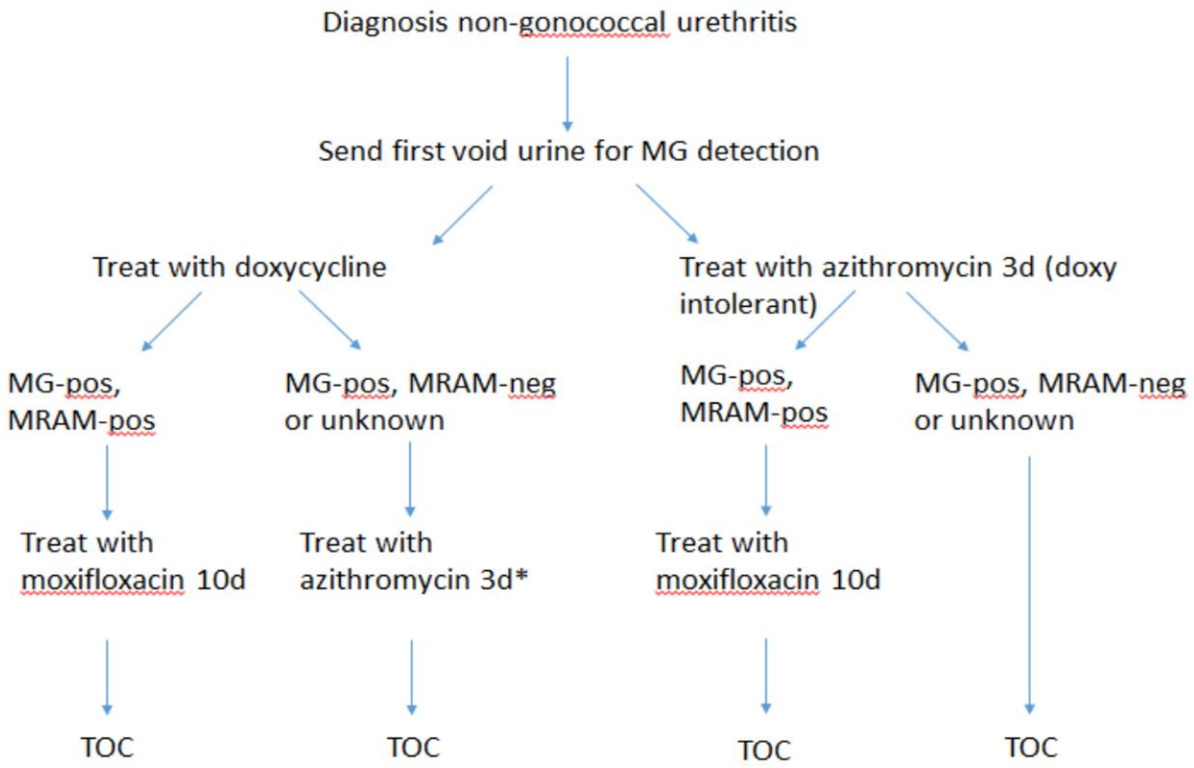
Background

- *Mycoplasma genitalium* (Mgen) is a known cause of non-gonococcal urethritis (NGU)
- Azithromycin susceptibility is decreasing due to macrolide resistance mutations (MRAMs)
- Estimated UK MRAM prevalence of 40%, but up to 82% in referral laboratories (Pitt et al, STI 2018)

Local pathway for testing



Treatment as per BASHH Guidelines



Aim

To report MRAM prevalence and clinical outcomes in the first four months of genotypic resistance testing

Methods

Clinic database interrogated

All men presenting with acute/persistent NGU (Jan-Apr 2019)

Data analysed:

- Demographics
- Clinical indication
- Azithromycin pre-exposure (preceding 6 months)
- MRAM result
- Antimicrobial therapy
- Test-of-cure result

Results – Mgen tests

From January-April 2019:

- 922 Mgen requests in men (for multiple indications)
- 730 men diagnosed with acute NGU
- 106 Mgen positive result in this group

Results – characteristics of cohort

Of 106 men with Mgen+ NGU:

- 52% (n=55) MSW with median age 27 yrs [range 16-61yrs]
- 48% (n=51) MSM with median 32 yrs [range 19-59yrs]

- 84% (n=89) had presented with acute NGU
- 13% (n=14) azithromycin pre-exposed

Results – prevalence of MRAMs

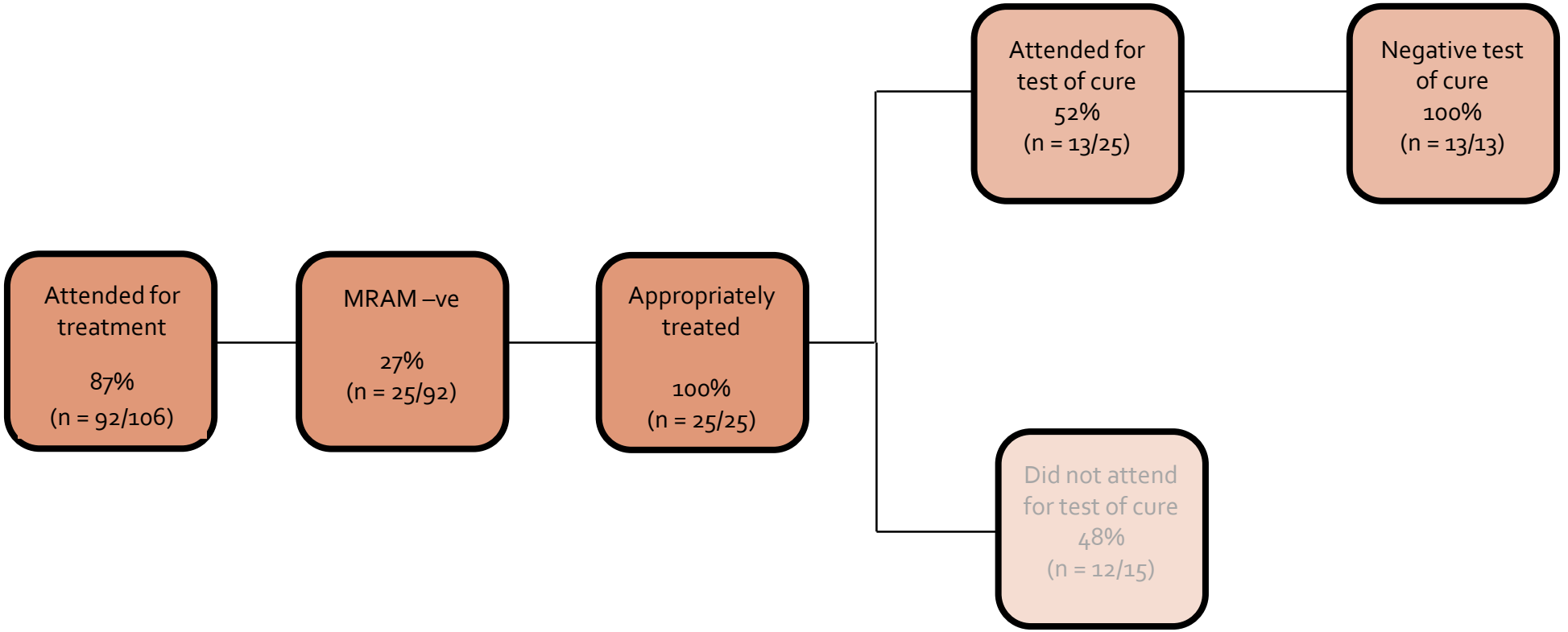
Overall MRAM prevalence: **73%**
[95%CI 61.5 – 78.3%]

Results – prevalence of MRAMs

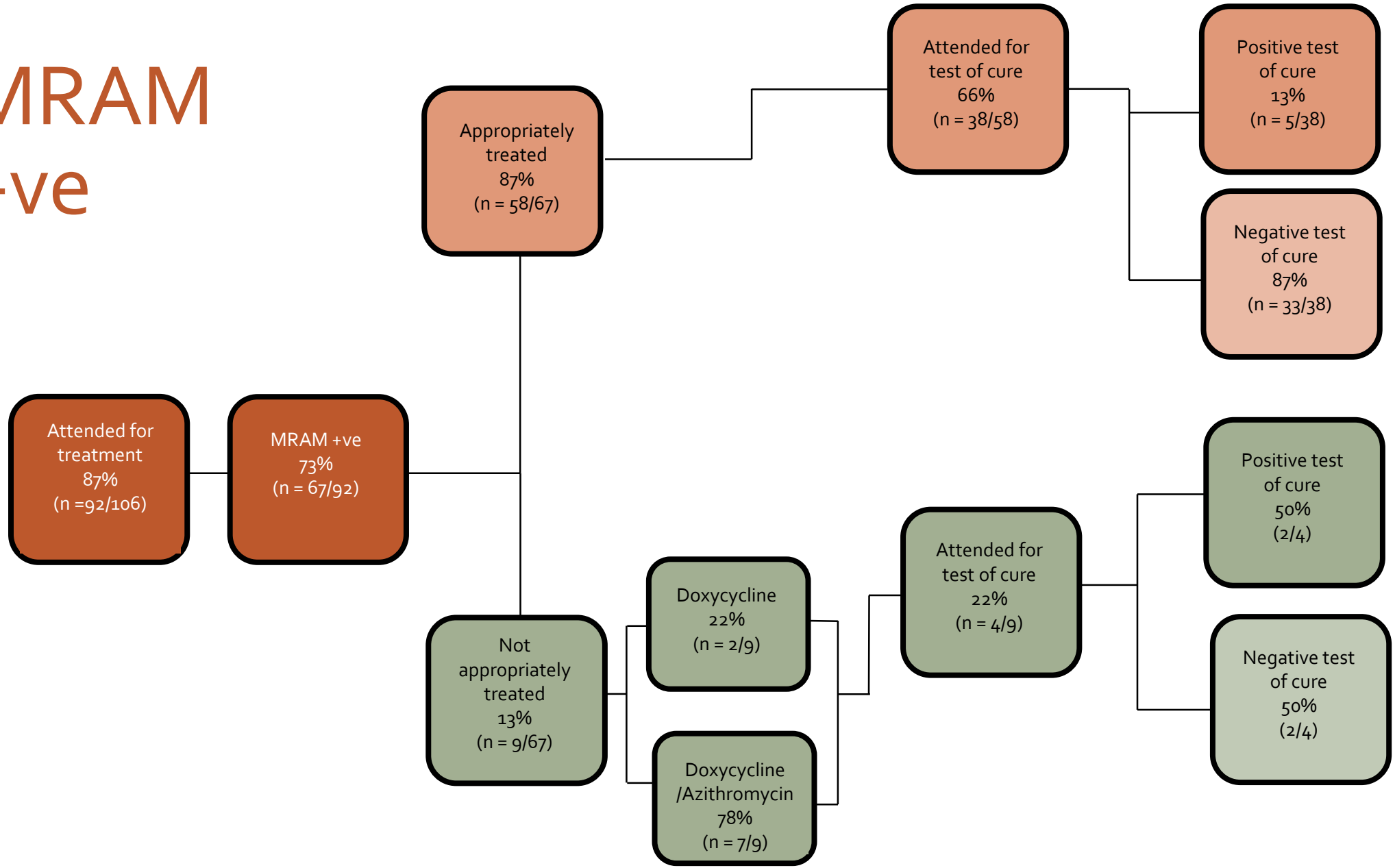
	Acute NGU	Persistent NGU	MSW	MSM*	Azithromycin naïve	Azithromycin pre-exposed*
MRAM +ve (%; n)	71% (63/89)	82% (14/17)	62% (55/89)	82% (43/51)	68% (63/92)	100% (14/14)

* $p<0.05$

Clinical outcomes: MRAM -ve



MRAM +ve


Attended for treatment 87% (n =92/106)
MRAM +ve 73% (n = 67/92)
Appropriately treated 87% (n = 58/67)
Attended for test of cure 66% (n = 38/58)
Positive test of cure 13% (n = 5/38)
Negative test of cure 87% (n = 33/38)
Not appropriately treated 13% (n = 9/67)
Doxycycline 22% (n = 2/9)
Doxycycline /Azithromycin 78% (n = 7/9)
Attended for test of cure 22% (n = 4/9)
Positive test of cure 50% (2/4)
Negative test of cure 50% (2/4)

Positive Test of Cure

Appropriately treated

.

Positive ToC

13% (n=5/38)

- ToC done prior to appropriate treatment
- ToC done prior to MRAM results
- Non-complaint with treatment

Not appropriately treated

.

Positive ToC

50% (n=2/4)

- ToC < 5/52 post treatment
- Asymptomatic

3rd Line Treatment

No patient with MRAM –ve Mgen required 2nd line antimicrobials

Two patients with MRAMs required 1/12 of doxycycline after failing moxifloxacin – both achieved microbiological cure

Conclusions

- High prevalence of MRAMs in men with acute NGU
- Majority azithromycin naïve, suggesting high level of transmitted/pre-induced MRAMs
- Antimicrobial therapy was mainly informed by MRAM result
- Should we be guided by clinical cure or microbiological cure?
- Further evaluation of ToC results may see fewer positive results and inform clinical utility
- What is the role of quinolone resistance testing?

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