# QUINOLONE RESISTANCE-ASSOCIATED MUTATIONS IN MYCOPLASMA GENITALIUM INFECTIONS IN DENMARK: PREVALENCE AND GENOTYPES FROM 2018 TO 2024

**Authors:**
Drud ST[1], Norgaard C[1], Jensen JS[1]

[1]Research Unit for Sexual and Reproductive Microbiology, Department of Bacteria Parasites and Fungi, Denmark

**Background:**
Resistance to fluoroquinolones for the treatment of *Mycoplasma genitalium* (MG) is on the rise and single nucleotide polymorphisms (SNPs) in the *parC* and *gyrA* genes have been implicated. Our objective was to identify quinolone resistance-associated mutations (QRAM) in these genes in a subset of MG samples received at the Statens Serum Institut, Denmark between 2018 and 2024.

**Methods:**
We tested 2110, male and female, MG positive, macrolide susceptible and resistant samples for QRAMs in the *parC* gene. If detected, QRAMs in the *gyrA* gene were sequenced with published primers. QRAMs in positions S83 (except S83N) and D87 of the *parC* gene were considered significant. SNP's in positions M95I or D99N of the *gyrA* gene were considered additive.

**Results:**
104 samples had *parC* QRAM (4.9%, 95% CI 3.9% - 5.8%) with 2021 reporting an unusually high rate of 9.1% (95% CI 6.5% - 11.6%). The prevalence in males was slightly higher though not statistically significant (5.4% vs 4% in females, $p$= 0.13). Consistent with findings globally, S83I (64, 61.5%) was identified as the dominant QRAM, followed by D87N (28, 27%) and D87Y (22, 21.1%). QRAMs in the *gyrA* gene were detected in 17.3% (18 of 104, 95% CI 10-25.5%) samples. Additionally, we will present annual prevalence and revised data as the analyses are not final.

**Conclusion:**
This nationwide study of randomly selected clinical specimens provides insight into QRAM epidemiology and highlights an increasing trend towards fluoroquinolone resistance, upwards of 5% in the later years in Denmark. Treatment failure with moxifloxacin in the presence of QRAM has been well documented though not absolute, so in the absence of suitable and efficient alternatives, resistance-guided therapy with the inclusion of QRAM analyses is not currently advised in Denmark. Detection of QRAMs after moxifloxacin treatment failure, however, is key to distinguishing re-infection from resistance.

**Disclosure of Interest Statement:**
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