

## INTRODUCTION

- M. Genitalium represents a significant sexually transmitted pathogen that can cause non-gonococcal urethritis (NGU) in men and cervicitis, endometriosis, pelvic inflammatory disease in women<sup>1</sup>.

## AIM

- We analyzed the macrolide and fluoroquinolone resistance in M. genitalium positive samples collected from symptomatic patients, attending an STI center in Milan (Italy) between March 2017 and October 2020.

## METHOD

- A Total of 119 M. genitalium positive samples (72,3% males and 27,7% females), including 83 urethral swabs, 32 vaginal swabs and 4 anal swabs, were analyzed at the Virology Laboratory of the Fondazione IRCCS Ca' Granda Ospedale Maggiore Policlinico, Milan, Italy.
- The samples were tested using two commercially-available multiplex qPCR assay (Allplex<sup>TM</sup> MG & AziR assay and Allplex<sup>TM</sup> MG & MoxiR assay, Seegene) for simultaneous detection of M. genitalium and point mutations associated with macrolide and fluoroquinolone resistance within the region V of the 23S rRNA gene and the quinolone resistance determining regions (QRDR) of parC respectively.
- Furthermore, 99 samples were also analyzed with another commercial kit (ResistancePlus<sup>TM</sup> MG, Speedx) followed by sequence analysis with the Sanger method to evaluate clinical performance of new assay

## RESULTS

- From 119 M. genitalium positive specimens 63/119 (52,9%) and 18/119 (15,1%) resulted resistant to macrolide and fluoroquinolone resistance respectively (Fig. 1).
- Interestingly, 14/119 (11,8%) positive specimen presented both azithromycin and moxifloxacin resistance.

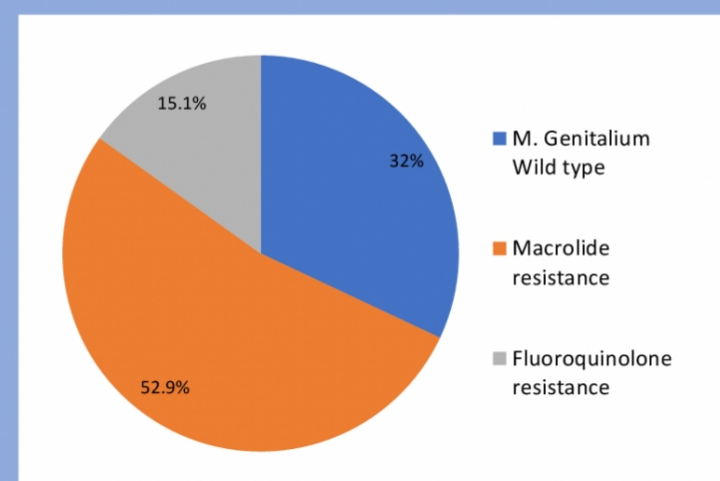


Fig.1. Prevalence of M.Genitalium Resistance

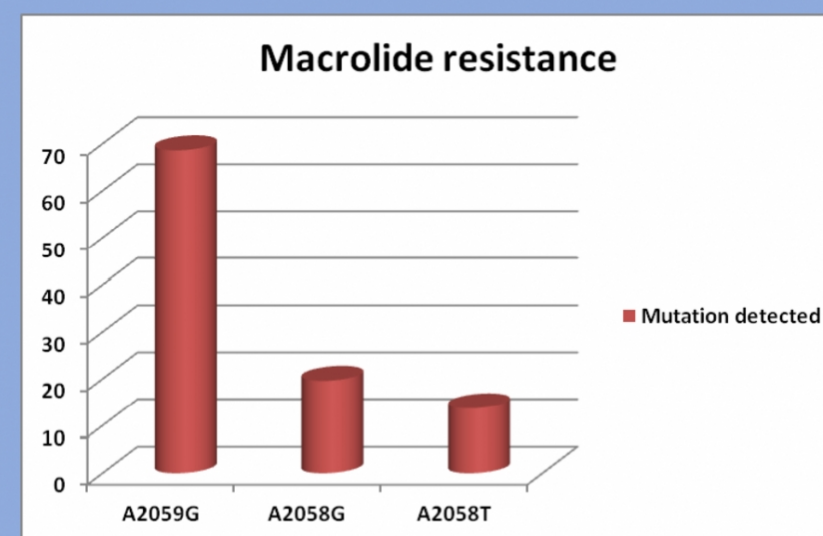


Fig.2. Mutations detected of Azithromycin resistance.

- The most common mutations of azithromycin resistance were A2059G (35/51, 68.6%) and A2058G (10/51, 19.6%), while the least frequent were A2058T (7/51, 13.7%) (Fig. 2).
- The specimens resulted positive for moxifloxacin resistance presented a frequency of mutations of G259A (4/18, 22.2%), G248T (7/18, 38.9%), G259T (3/18, 16.7%), G248A (2/18, 11.1%), A247C (2/18, 11.1%).

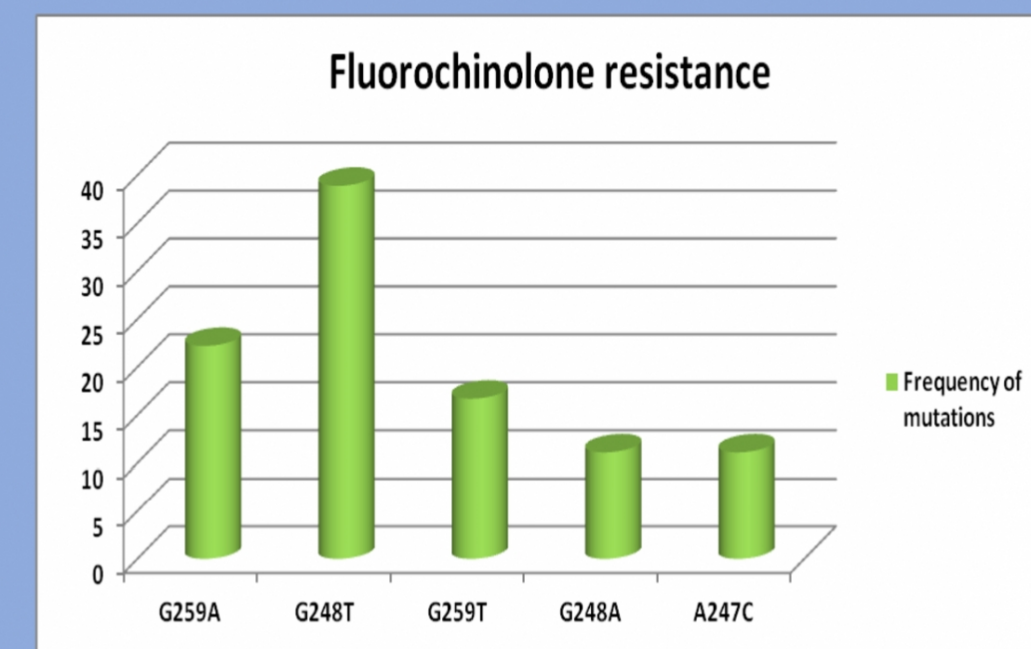


Fig.2. Mutations associated with Moxifloxacin resistance.

- Moreover, from 99 M. genitalium positive specimens tested with the ResistancePlus<sup>TM</sup> MG kit and MG & AziR assay, 52 (52.5%) and 51 (51.5%) resulted resistant to macrolide respectively. The presence of a single point mutation was confirmed in 51 of 52 samples with the Sanger Sequencing.

## CONCLUSIONS

- The macrolide antibiotic azithromycin is still widely used for the treatment of M.genitalium infections in Milan, Italy.
- We provide evidence that macrolide resistance is also highly prevalent in M.genitalium in Milan.
- These results support that molecular diagnostic and the antibiotic resistance surveillance are strongly recommended by the last European guideline on the management of M.genitalium infections<sup>2</sup>.

## REFERENCES

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- Jensen JS, Cusini M, Gomberg M, Moi H. 2016 European guideline on Mycoplasma genitalium infections. J Eur Acad Dermatol Venereol. 2016 Oct;30(10):1650-1656

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## CONTACT INFORMATION

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