Macrolide resistance detection in *M. genitalium* by pyrosequencing in a Spanish Hospital

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BACKGROUND and OBJECTIVES

Mycoplasma genitalium (MG) is a common cause of non-gonococcal urethritis and cervicitis. Macrolides (ML) are a first-line treatment, but resistant strains have been noted worldwide. Resistance is given by several point mutations in the V domain of the 23S rRNA, causing azithromycin failure or leading to resistance induction.

The goals of this study are:

1. To adapt a pyrosequencing technique previously used in *M. pneumoniae* (MP) to detect ML resistance in MG
2. To establish the current prevalence of resistant strains in our area.

METHODS

STI diagnosis workflow

Cervical swabs
Urethral swabs
Rectal swabs

Urine

5595 samples
July 2016-March
2017

15 MG positive samples CT-ASSIR Study
"Prevalence study of *Chlamydia trachomatis* infection and determinants of risk behavior in young people <25 years old"

Nucleic acids
extraction (Microlab
Nimbus® IVD,
Seegene, Korea)

AllPlex™ STI Essential Assay® Real Time PCR (Seegene, Korea)

If *M. genitalium* was detected

Macrolide resistance detection by pyrosequencing

RESULTS

CONCLUSIONS

- ➡ Molecular methods allow MG detection, providing a diagnostic approach in cases which the usual pathogens are not isolated.
- ➡ Mutations associated with MLr are present in a high percentage of the strains tested (16.9%).
- ➡ This implies that recommended empirical treatment may not be effective in approximately 18% of infections, so the feasibility of modifying this antibiotic regimen should be assessed.

REFERENCES

*Jensen J.S. (2012): Protocol for the Detection of *Mycoplasma genitalium* by PCR from Clinical Specimens and Subsequent Detection of Macrolide Resistance-Mediating Mutations in Region V of the 23S rRNA Gene. In: MacKenzie C., Henrich B. (eds) Diagnosis of Sexually Transmitted Diseases. Methods in Molecular Biology (Methods and Protocols), vol 903. Humana Press, Totowa.