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BATTERIOLOGIA

EVALUATION OF AZITHROMYCIN RESISTANCE IN MYCOPLASMA GENITALIUM POSITIVE CLINICAL SPECIMENS.

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INTRODUZIONE

Mycoplasma genitalium (MG) is an important sexually transmitted pathogen (STI) associated with non-gonococcal urethritis (NGU) in men and cervicitis in women.
The use of azithromycin as a first-line drug for the treatment of MG infections has led to high rates of resistance to macrolides resistance-associated mutations in the 23S rRNA gene.
The purpose of the following work was to retrospectively evaluate the presence of azithromycin resistance-associated mutations in MG positive clinical samples.

METODI

From 1st July 2014 to 1st July 2019, 6264 samples (seminal fluid samples (SPM), urethral swabs (TU), cervical swabs (CT), vaginal swabs (TV) and endometrial fluids (LEND)), were analyzed at the Department of Microbiology and Virology of the Policlinico of Bari for the detection of: Mycoplasma genitalium (MG), Mycoplasma hominis (MH), Chlamydia trachomatis (CT), Neisseria gonorrhoeae (NG), Ureaplasma urealyticum (UU), Ureaplasma parvum (UP) and Trichomonas vaginalis (TV).
The DNA was extracted with automated method (MagNA Pure Compact System, Diagnostics GmbH, Mannheim, Germany) and processed with a real-time multiplex PCR assay (Anyplex STI-7, Seegene, Inc., Seoul, Korea) by Bio-Rad real-time CFX96TM PCR cycler (Bio-Rad Laboratories).
Globally, 54 samples were MG DNA positive. The final analysis was performed on 38 samples (8 were repeated samples and 8 had the DNA extract no more available). The 38 samples were tested using a real-time multiplex PCR assay (AllplexTM MG & AziR assay, Seegene, Inc., Seoul, Korea) for the evaluation of resistance to azithromycin. The kit allows detection of six azithromycin resistance-associated mutations: A2058G, A2058T, A2058C, A2059G, A2059T, A2059C.

RISULTATI

71.05% and 28.95% of the samples were collected from females and males, respectively. Median age of patients was 26.5 (range 20-50). Samples were equally collected from inpatients and outpatients. The specimens tested for azithromycin resistance-associated mutations were as follow: 4 SPM, 7 TU, 22 TC, 3 TV and 2 LEND.
Of the 38 samples analyzed, A2058G mutation was detected in 4/38 samples (10.53%, Confidence Interval 95%: 3.43% -25.74%, 3 TC and 1 TU).
Two of the patients with A2058G mutation were also positive for UU-UP and CT-UP DNA, respectively.

CONCLUSIONI

In order to avoid an ineffective treatment due to azithromycin resistance, an epidemiological surveillance with molecular tools that detect MG DNA and the presence of mutations in the 23S rRNA gene should be routinely performed.