

CULTURE-BASED ANALYSIS OF ANTIMICROBIAL RESISTANCE AMONG MYCOPLASMA GENITALIUM STRAINS

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Background:

The antimicrobial resistance of *Mycoplasma genitalium* is becoming a big problem in the world. The macrolide-resistance reaches almost 50%. Fluoroquinolone, especially for moxifloxacin-resistant *M. genitalium* also increasing, but the genomic mutation related to fluoroquinolone-resistance has not been determined. The isolation of *M. genitalium* strains from clinical specimens is still difficult. We continued to isolate *M. genitalium* strains from the clinical specimens and examined antimicrobial susceptibility testing.

Methods:

M. genitalium strains were isolated from urinary sediment of *M. genitalium*-positive urine-specimens from man. The antimicrobial susceptibility testing was examined by the cell-culture method. The genomic mutation of *M. genitalium* was analysis by sequence of region V of 23S rRNA and quinolone-resistance determining region of ParC and GyrA genes.

Results:

Four strains in 2003 and 7 strains in 2017 were isolated. All 4 strains isolated in 2003 were sensitive to macrolide. Among 7 strains isolated in 2017, 6 were resistant to macrolide and 5 had high moxifloxacin MICs (MIC \geq 1 mg/L). The MIC ranges of fluoroquinolone, such as ciprofloxacin, levofloxacin, moxifloxacin and sitafloxacin for strains isolated in 2017 were 2->16 mg/L, 1->16 mg/L, 0.125-4 mg/L and 0.5-1 mg/L, respectively. Strains with a high MIC of moxifloxacin (>1mg/L) had gene mutation with amino-acid change (Ser83→Ile) on ParC. The moxifloxacin MICs of 2 strains having mutation on ParC with Ser83→Asn were 0.125 mg/L and 0.25 mg/L. The MICs of the strains having Ala69→Thr or Asp87→Tyr on ParC were 0.125 g/L and 0.5 mg/L, respectively. The sitafloxacin MIC of strain with Ser83→Ile on ParC and Gly93→Cys on GyrA was 1 mg/L and sitafloxacin MICs of 3 strains with Ser83→Ile on ParC and Met95→Ile on GyrA were 0.25 mg/L or 0.5 mg/L.

Conclusion; Ser83→Ile on ParC was closely related to moxifloxacin-resistance. We are now other 7 strains are analyzing and will show additional data.