

Frequency and diversity of 16 methylase SrRNA genes in aminoglycoside-resistant *Pseudomonas aeruginosa* isolates

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Introduction and goal. Clistine is one of the effective antibiotics against *Pseudomonas* multidrug resistance isolates and is one of the last used antibiotics to treat infections caused by this bacterium. The aim of the present study was to evaluate the phenotypic effect of high-level aminoglycosides and the presence of 16 S rRNA methylase coding genes in resistant strains in clinical isolates of *Pseudomonas aeruginosa* in Guilan province. **materials and methods.** In this study, 94 strains of *Pseudomonas aeruginosa* isolated clinical specimens were evaluated for antibiotic susceptibility to gentamicin, kanamycin and amikacin by disk diffusion method and gentamicin MIC by broth macrodilution. Then, the typing of resistant strains by fingerprinting (GTG) 5-PCR and the frequency of armA, rmtA and rmtB genes in PCR-resistant samples were investigated findings. This study showed that out of 94 samples, 9.47% were resistant to all 3 aminoglycosides studied. Of these, 25.5% showed high levels of resistance to gentamicin. In genomic motif of 24 strains with high resistance to aminoglycoside, different band patterns were produced and the strains were non-repetitive. In the PCR reaction of 45 aminoglycoside resistant isolates, in 3 and 1 strains, respectively, 315 and 173 bp, respectively, were identified for the presence of armA and rmtB positive genes, respectively. **Conclusion.** The results of the present study indicate the high frequency of aminoglycoside resistant strains in clinical isolates of *Pseudomonas aeruginosa* in Guilan. The spread of these resistance is a serious warning in the treatment of infections caused by multiple bacterial resistance strains.

Keywords : Antibiotic resistance, Aminoglycoside, 16srRNA methylase

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