

Frequency of the Resistance Genes Against Aminoglycoside and Extended Spectrum Beta Lactamase (ESBL) in the *Pseudomonas aeruginosa*

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Background & Objectives: *Pseudomonas aeruginosa* is common hospitalized pathogens. Resistance of this bacterium against different antibiotics which have been reported from the various regions. The objective of this study is to determine the antibiotic susceptibility of the *Pseudomonas aeruginosa* strains isolated from the various wards of the hospital and the presence of the bla_{oxa}-50, bla_{oxa}-2, p_{st}S, aadA, aac(6'), aadE and aph(2'') genes.

Methods: In this study, 35 strains of *Pseudomonas aeruginosa* were collected from different wards of the Shahid Rejaei hospital of Tonekabon within 2011-2012. In order to determine the resistance of strains, antibiogram test was carried out by the Methods of the disk diffusion. In order to the presence of the studied genes, the Specific primers were used and the PCR technique was applied to amplification the above genes.

Results: The results obtained for antibiotics susceptibility of *Pseudomonas aeruginosa* isolated from hospital samples by disk diffusion methods indicated that all strains were resistant to Cephalexin, Cephalotone, Ampicillin, Penicillin, Amoxicillin and Co-amoxiclav. Also, they showed different levels of resistant to other antibiotics including 85.7% to Neomycine, 42.8% to Tobramycin, 28.5% to Cephtriaxon, 20% to Cephtazidium and 2.8% to Imipenem. All *Pseudomonas aeruginosa* isolates were sensitive to Ciprofloxacin, Gentamicin and Amicacin. Of total 35 studied strains, P_{st}s, bla_{oxa} 50 and aadE genes was observed in 35 (100%), 34 (97.1%) and 33 (94.2%) strains, respectively. Also, the aac(6'), aph(2''), aaA and bla_{oxa}2 genes were not identified in the none of the isolated strains.

Conclusion: With regard to the high percentage of the resistance of isolated *Pseudomonas aeruginosa* to the antibiotics of the group of the Aminoglycoside and extended spectrum beta lactamase, the accurate performance of the anti-biogram tests before the prescription of the antibiotic in the treatment of the infections resulted from these bacteria is an unavoidable necessity.

Keywords: *Pseudomonas aeruginosa*; Antibiotics Resistance; Aminoglycoside; ESBL