The first report of CMY, aac (6′)-Ib and 16S rRNA methylase genes among *Pseudomonas aeruginosa* isolates from Iran

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**Background:** Serious infections by *Pseudomonas aeruginosa* are commonly treated with the combination of a beta-lactam antibacterial and an aminoglycoside. Therefore, production of a 16S rRNA methylase may result in an extremely important antibacterial resistance profile.

**Objectives:** The present study was conducted to determine the prevalence of Cephamycinase (CMY), aminoglycoside 6'-N-acetyltransferase (aac(6')-Ib) and 16S rRNA methylase genes among *Pseudomonas aeruginosa* isolates from Iran.

**Patients & Materials:** This descriptive study was performed on hospitalized burnt patients during 2011 and 2012. Antibiotics susceptibility tests were performed by disc diffusion and broth microdilution methods. CMY, aac(6')-Ib, 16S rRNA methylase genes were detected by PCR method.

**Results:** Seventy-seven (77%) of 100 isolates were resistant to Imipenem and Ceftazidime. aac(6)-Ib, Cephamycinase (CMY), and rRNA methyltransferase (rmtB and rmtD) were detected in 57 (74.02%), 7 (9.09%), 11 (14.28%), and 9 (11.68%) isolates, respectively. PCR results for aminoglycoside resistance methyltransferase (armA) and rRNA methyltransferase (rmtC) were all negative. Aminoglycoside resistance methyltransferase (armA), and rRNA methyltransferase (rmtC) were not detected.

**Conclusions:** This study detected multiple drug resistance in *Pseudomonas aeruginosa* including resistance to β-lactams, Aminoglycosides, and Fluoroquinolones. Therefore, identification of drug resistance patterns in *P. aeruginosa* and detection of pan-resistant producing isolates are of great importance in prevention and control of infections in burn center ward.

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