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**Frequency of *PmrA*, *PmrB* and *mcr-1* genes in *pseudomonas aeruginosa* isolates from cystic fibrosis patients of mofid children hospital, Tehran, Iran**

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**Introduction:** The emergence of multidrug-resistant (MDR) in gram negative pathogens such as *P. aeruginosa* has become an important challenge to worldwide public health, recently (1). Colistin as a last line of treatment against MDR gram negative bacteria has been propounded (2). Recent studies have been demonstrated that colistin resistance is adaptive and regulated via *PmrA* and *PmrB* as a two component regulatory system (3). The plasmid borne colistin resistance gene *mcr-1* was primarily recognized from China (4). Due to the raising of antibiotic resistance, in this study prevalence of *mcr-1* gene and the mutation in *pmrA* and *pmrB* genes in *P. aeruginosa* isolates from sputum of Cystic Fibrosis (CF) patients was investigated.

**Methods:** 41 isolates of *P. aeruginosa* from sputum of CF patients in Mofid Children Hospital during Apr-Sep 2017 were collected. According to CLSI guideline 2017, antibiotic susceptibility test (AST) was applied by using the disk diffusion method. Detection of *pmrA*, *pmrB* and *mcr-1* genes was performed by PCR and further sequencing was administrated for finding the mutations.

**Results:** Among 41 isolates of *P. aeruginosa* 22 (53.65%) were resistant to Amikacin, 21 (51.21%) to Ofloxacin and Cefepime, 20 (48.78%) to Imipenem, 19 (46.34%) to Ceftazidime and Ciprofloxacin, 18 (43.9%) to Aztreonam, 17 (41.46%) to Piperacillin, 16 (39.02%) to Gentamicin, 14 (34.14%) to Piperacillin-Tazobactam and 1 (2.43%) to Colistin. PCR results showed that all of the isolates had *pmrA* and *pmrB* genes and all of them were negative for *mcr-1*. One of the isolates show some mutations in *pmrB* gene.

**Conclusion:** The results of this study showed that colistin is the best choice for treatment. Using the molecular tests is necessary and have a determinative role to prescription of antibiotics by physicians.

**Biography**

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