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Antibiotic susceptibility pattern of *Pseudomonas aeruginosa* in cystic fibrosis patients

Atqah Abdul Wahab[1, 2], **Khalid Zahraldin**[1], **Mazen Sid Ahmed**[1] and **Emad Bashir Ibrahim**[1]
[1]Hamad Medical Corporation, Qatar
[2]Weill Cornell Medicine-Qatar, Qatar

Introduction: *Pseudomonas aeruginosa* (*PA*) is an important pathogen in patients with cystic fibrosis (CF) and a major cause of morbidity and mortality. The emergence of multidrug resistant *Pseudomonas aeruginosa* (*MDR-PA*) has been an increasing problem in the care of CF patients. Early detection and appropriate antimicrobial agents may improve outcome in patients with CF.

Objective: To analyze the profile of antimicrobial susceptibility of PA from lower respiratory samples and to describe the frequency of isolated *MDR-PA* in CF patients.

Methods: The lower respiratory isolates of PA were obtained from inpatients and outpatients CF clinics from at Hamad Medical Corporation, in the state of Qatar from October 2014 to September 2015. The antimicrobial susceptibility test of all the isolates was performed by BD Phoenix automated system according to CLSI guidelines and confirmed by Epsiometer Test (E-test) method.

Results: A total of 61 PA samples were isolated from 30 CF patients with mild to severe lung disease. The mean age of the study group was 20.56±8.95 years; 25 CF patients (83.3%) with CFTR I234V mutation, other 5 CF patients with other CFTR mutations. All the isolates were showed highest sensitivity to colostin (100%) followed by piperacillin/tazobactam (90.2%), meropenem (88.5%), ciprofloxacin (77%), cefepime (70.5%), amikacin (67.2%) and gentamicin (59%). Twelve sputum samples were positive for *MDR-PA* from 5 CF patients with moderate to severe lung diseasegiven *MDR* percentage of 19.7%. The antimicrobial patterns of *MDR-PA* isolates showed a highest rate of resistance (100%) towards each gentamycin, amikacin and cefepime, followed by 91.7% to ciprofloxacin, 75% to tobramycin, 58.3% to meropenem and 50% to pipracilin-tazobactam.

Conclusion: The study results emphasize the emergence of significant resistance in the clinical isolates of *P. aeruginosa* in CF patients and need further management of the antibiotic treatment strategy with frequent surveillance is recommended.

Biography

Atqah Abdul Wahab is an Assistant Professor of Clinical Pediatrics at Hamad Medical Corporation, Qatar. He is also associated with Weill Cornell Medicine-Qatar, Qatar.

atqah2015@gmail.com

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