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Prevalence of *blaPER-1* and *blaVEB-1* genes among ESBL-producing *Acinetobacter baumannii* isolated from two hospitals of Tehran, Iran

Roxana Mansour Ghanaie[2*], Fatemeh Fallah[1], Maryam Noori[1], Abdollah Karimi[2], Ali Hashemi[1]

[1]Department of Microbiology, Shahid Beheshti University of Medical Sciences, Tehran, Iran

[2]Pediatric infections research center, ,Mofid Children Hospita, Shahid beheshti university of medical Sciences, Tehran, IR Iran

Background: Metallo-beta-lactamases (MBLs) and Extended-Spectrum-beta-Lactamases (ESBLs)-producing Acinetobacter baumannii strains are important nosocomial pathogens.

Objectives: The aim of this study was to determine the frequency of *blaNDM*, *bla*PER and *bla*VEB type genes among *A. baumannii* isolates from 2 general hospitals in Tehran, Iran from 2012 to 2013.

Patients & Methods: This study was conducted on 108 *A. baumannii* isolates collected from 2 hospitals in Tehran, Iran. Antibiotic susceptibility tests were performed by Kirby-Bauer disc diffusion and Broth microdilution methods according to CLSI guidelines. The frequency of MBL (Metallo-Beta-Lactamase) and ES BL (Extended-Spectrum-Beta-Lactamase) producers were evaluated by CDDT (Combined Disk Diffusion Test). The *blaNDM*, *blaPER* and *blaVEB* genes were detected by PCR and sequencing methods.

Results: The resistance of *A. baumannii* isolates against tested antibiotics were as follow: 103 (95.4%) toceftazidime, 108 (100%) to cefotaxime, 105 (95.7%) to cefepime, 99 (91.7%) to imipenem, 99 (91.7%) to meropenem, 87 (80.6%) to amikacin, 105 (97.2%) to piperacillin, 100 (92.6%) to ciprofloxacin, 103 (95.4%) to piperacillin/tazobactam, 44 (40.7%) to gentamicin, 106 (98.1%) to ampicillin/sulbactam, 106 (98.1%) to co-trimoxazole, 87 (80.6%) to tetracycline and 1 (1.8%) to colistin. Using combined disk diffusion test, it was found that out of 108 cefotaxime-non-susceptible *A. baumannii* strains, 91 (84.2%) were ESBL producers and out of 99 imipenem non- susceptible *A. baumannii* strains, 86 (86.86%) were MBL producers. The prevalence of *blaPER*-1 and *blaVEB*-1 genes among 91 of ESBL producing *A. baumannii* isolates were 71 (78.03%) and 36 (39.5%), respectively. Fortunately, *blaNDM* gene was not detected in isolates.

Conclusion: The prevalence of ESBLs and MBLs-producing *A. baumannii* strains detected in this study is a major concern and highlights the need of infection control measures including prompt identification of beta-lactamase-producing isolates and antibacterial management..

Biography

Roxana M.Ghanaie has completed her subspeciality in pediatric infectious disease from Shahid Beheshti University of medical sciences. She is associated professor in Shahid Beheshti University. She has published several papers in reputed journals and has been serving as an editorial board member of repute.

ghanaieroxana@gmail.com

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