Antibiotic Resistance Profile of Acinetobacter Baumannii Isolated from Nosocomial Outbreak in Arak-Iran

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Background & Objectives: In the last decade, *Acinetobacter baumannii* have become one of the most important pathogens responsible for nosocomial infections, especially in Intensive Care Unit patients. The emergence and rapid spread of carbapenem-resistant *Acinetobacter baumannii* has been reported worldwide. From August 2011 to September 2012 a nosocomial outbreak has been occurred in ICU wards of a central teaching hospital , caused prolonged hospitalization and considerable morbidity. The purpose of the present study was to investigate phenotypic characterization of *Acinetobacter baumannii* isolated from clinical and environmental specimens obtained during the time of the study.

Methods: A total of 60 non-duplicate *Acinetobacter baumani* isolates were collected from clinical and environmental specimens of central teaching hospital between August 2011 and September 2012. All isolates were identified as *Acinetobacter baumannii* by standard biochemical tests and microgen kit (microgen bioproducts). In addition phenotypical characterization of *A. baumannii* was confirmed by the presence of 16S–23S rRNA specific gene intergenic spacer (ITS). Susceptibilities of the bacterial isolates to panel 22 antimicrobial agents (Mast ,UK) were tested using the standard disk diffusion methods according to Clinical and Laboratory Standards Institute(CLSI-2011), European Committee on Antimicrobial Susceptibility Testing(Ucast-2011) and British Society for Antimicrobial Chemotherapy (BSAC-2011) guideline.

Results: *Acinetobacter baumannii* isolates showed high rate of resistant to ceftazidime (100%), cefotaxime (100%), cefepime(100%), cefoxitin(100%), chloramphenicol(100%), ciprofloxacin(100%), levofloxacin(100%), erythromycin(100%), clindamaycin(100%) , rifampicin(100%), ceftriaxone(100%), aztreonam(100%), piperacillin(100%), piperacillin/tazobactam(100%), Trimethoprim-sulfamethoxazole(100%), gentamicin(98.3%), meropenem(96.6%), tigecycline(91.6%), imipenem(86.6%), tetracycline(84%), amikacin(84%). Nevertheless netilmicin and colistin illustrated 57% and 7% respectively.

Conclusion: High prevalence extensively drug resistant (XDR) strains in this hospital indicating the antibiotic resistant is a major concern, hence antibiotic prescription policy should be revised and infection control measure is necessary to be improved.

Keywords: Antibiotic Resistance; Acinetobacter; Nosocomial