The Frequency of \textit{bla}_{\text{PER}}, \textit{bla}_{\text{VEB}} \textit{bla}_{\text{CTX-M}} \textit{tetA} and \textit{tetB} genes among Acinetobacter \textit{baumannii} strains isolated from hospitalized patients in Tehran

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Abstract

**Background & Aim:** Infections and outbreaks caused by multidrug-resistant \textit{Acinetobacter baumannii} are prevalent and have been reported worldwide over the past twenty or more years. Beta-lactamase genes including \textit{bla}_{\text{PER}}, \textit{bla}_{\text{VEB}} and \textit{bla}_{\text{CTX-M}} confer resistance to beta-lactam antibiotics and \textit{tetA} and \textit{tetB} are responsible for resistance to tetracycline in such bacteria.

**Methods:** A total of 65 isolates of \textit{A. Baumannii} from clinical samples were collected. Antimicrobial susceptibility testing was performed by the disk diffusion method according to the CLSI guideline and the presence of \textit{bla}_{\text{OXA-51}} \textit{tetA}, \textit{tetB}, \textit{bla}_{\text{VEB}}, \textit{bla}_{\text{CTX}} and \textit{bla}_{\text{PER}} were screened via the polymerase chain reaction (PCR).

**Results:** The isolates were 100% resistant to gentamicin, ciprofloxacin, piperacillin, cefotaxime, ceftazidime and tetracycline. Resistance to minocycline and imipenem stood at 89% and 85%, respectively. All isolates were identified as multi-drug resistant (MDR). The genes \textit{tetA}, \textit{tetB}, \textit{bla}_{\text{VEB}}, \textit{bla}_{\text{CTX}} and \textit{bla}_{\text{PER}} were detected in 75.3%, 43%, 35.3%, 76.9% and 61.5% of isolates, respectively.

**Conclusion:** This study revealed the high prevalence of antimicrobial resistance genes amongst \textit{Acinetobacter baumannii} and thus confirms the need for isolating and identifying them in clinical laboratory and hospital settings.

**Keywords:** Acinetobacter, Antibiotic resistance, Beta-lactamase