



Integron Associated Antibiotic Resistance among *Acinetobacter baumannii*

***Reza Ranjbar¹, Ali Mousavi², Setareh Haghghat²**

1. Molecular Biology Research Center, Systems Biology and Poisonings Institute, Baqiyatallah University of Medical Sciences, Tehran, Iran

2. Department of Microbiology, Faculty of Advanced Sciences & Technology, Pharmaceutical Sciences Branch, Islamic Azad University, Tehran, Iran

***Corresponding Author:** Email: ranjbarre@gmail.com

(Received 10 Oct 2019; accepted 25 Oct 2019)

Dear Editor-in-Chief

Acinetobacter baumannii strains play an important role in the development of urinary tract infection, pneumonia, septicemia, wound infection and meningitis. They are also resistant to antimicrobial agents and are one of the important pathogen in nosocomial infections (1-5).

In the present study, we aimed to investigate the presence of integrons in clinical strains of *A. baumannii*. Clinical samples were collected from patients admitted to several hospitals in Tehran. After isolation of *A. baumannii* strains, the antibiotic susceptibility patterns of the isolates was determined as recommended by CLSI. Frequency of various classes of integrons in *A. baumannii* strains was determined using PCR method.

The results of antibiotic susceptibility test in *A. baumannii* strains showed that the high resistance rates various tested antibiotics including cefexime, amoxicillin-clavulanic acid, ciprofloxacin, ceftriaxone, amikacin, gentamicin, imipenem, ceftazidime tetracycline, co-amoxiclav, and ciprofloxacin. Based on PCR amplification of various integrons genes, more than 96% of *A. baumannii* strains contained integrons.

According to the results, there was a high prevalence of antibiotic resistance and integron genes

among clinical *A. baumannii* isolates and this high prevalence rate highlights the necessity for the development of rapid diagnostic assays and continuous monitoring of antibiotic resistance.

Acknowledgements

The authors would like to thank the Clinical Research Development Unit of Baqiyatallah Hospital, Tehran, Iran, for guidance and advice.

Conflict of interest

The authors declare that there is no conflict of interests.

References

1. Lee CR, Lee JH, Park M, et al (2017). Biology of *Acinetobacter baumannii*: Pathogenesis, Antibiotic Resistance Mechanisms, and Prospective Treatment Options. *Front Cell Infect Microbiol*, 13;7:55.
2. Nowak P, Paluchowska P (2016). *Acinetobacter baumannii*: biology and drug resistance - role



- of carbapenemases. *Folia Histochem Cytobiol*, 54(2):61-74.
3. Ranjbar, R., Sadeghifard N (2007). Antimicrobial Susceptibility and AP-PCR Typing of *Acinetobacter* Spp. Strains. *Iran J Publ Health* 36(4): 50-56.
 4. Sadeghifard N, Ranjbar R, Zaeimi J (2010). Antimicrobial susceptibility, plasmid profiles, and RAPD-PCR typing of *Acinetobacter* bacteria. *Asian Biomed*, 4:901-11.
 5. Ranjbar R, Tolon SS, Zayeri S, Sami M (2018). The frequency of antibiotic resistance and ESBLs among clinically *Acinetobacter baumannii* strains isolated from patients in a major hospital in Tehran, Iran. *Open Microbiol J*, 12:254-260.