Antibiotic Susceptibility and Molecular Analysis of Acinetobacter Baumannii Strains Isolated from Three Teaching Hospitals by REP-PCR And ERIC-PCR

Abbas Maleki*1; Sobhan Ghafourian1; Mostafa Akbari Qomi2; Norkhoda Sadeghifard1

1-Clinical Microbiology Research Center, Ilam University of Medical Sciences, Ilam, Iran
2-Department of Microbiology, Faculty of Medicine, Ilam University of Medical Sciences, Ilam, Iran

abbasmaleki_ilam@yahoo.com

Background & Objectives: In this study Antibiotic resistant patterns and molecular analysis of Acinetobacter baumannii strains isolated from three teaching hospitals by REP-PCR and ERIC-PCR were examined.

Methods: One hundred and twenty Acinetobacter baumannii isolates were obtained from three teaching hospitals in Tehran. The source of these isolates included blood, urine, wound, and respiratory tract. After detection of Acinetobacter baumannii by biochemical Methods, their susceptibilities to 17 antibiotics was tested and chromosomal DNA was extracted by standard phenol/chloroform Methods. REP-PCR was carried out using Rep 1R-1 and Rep 2-I primers, also ERIC-PCR was done by using ERIC-1R and ERIC–2. The PCR product was run and visualized in 1.5% agarose gels stained with ethidium bromide.

Results: Analysis of antibiotic resistance patterns showed that All Acinetobacter baumannii which isolated in this study were multi-drug resistant isolates. This study showed that all A. baumannii isolates are 100 % resistance to at least eleven used antibiotics. One hundred and Twenty Acinetobacter baumannii isolates were analyzed by REP-PCR Methods. PCR Product sizes were between 200-3500 bp and 12 different PCR patterns were detected by REP-PCR, of which 7 were obtained for single isolates. The most common pattern was observed among 57 (47.5%) isolates. By ERIC-PCR Methods 13 patterns were observed.

Conclusion: According to results, because of the presence and spread of multi-drug resistant Acinetobacter baumannii isolates in the hospitals, more care should be taken for prevention of nosocomial infections. Results of this study showed that some of strains have similar pattern by REP-PCR and ERIC-PCR, it is assumed that these strains have the same origin.

Keywords: Acinetobacter Baumannii, Molecular Typing, Iran