Dissemination of Class 1, 2 And 3 Integrons Among Different Multidrug Resistant Isolates of Acinetobacter baumannii in Tehran Hospitals, Iran

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Background & Objectives: In this study dissemination of Class 1, 2 and 3 Integrons among Different Multidrug Resistant isolates of Acinetobacter baumannii in Tehran hospitals were examined.

Methods: A total of 100 non-duplicate Acinetobacter baumannii isolates were collected from different hospitals in Tehran and were confirmed as A. baumannii by conventional biochemical and API testing. Antimicrobial susceptibility of these isolates was checked by a disk diffusion Methods in accordance with CLSI guidelines. The isolates were then detected as carrying class 1 and 2 integron gene cassettes by PCR evaluation and then genotyped by REP-PCR.

Results: More than 50% (n = 50) of the isolates were multidrug resistant. The results showed that more than 80% of all multidrug resistant A. baumannii strains carry a class 1 integron. Distribution of Intl 1 and Intl 2 among A. baumannii isolates was 58% and 14%, respectively. Analysis of a conserved segment of class 1 integron showed a range from 100 bp to 2.5 kb. REP-PCR fingerprinting showed more than 20 genotypes among A. baumannii strains. There was no relationship between REP genotypes and the distribution of different classes of integrons.

Conclusion: This is a comprehensive study on the distribution of different classes of integrons among A. baumannii in Iran. Considering the exact role of integrons in coding drug resistance in bacteria, the findings of this study could help us find antimicrobial resistant mechanisms among A. baumannii isolates in Iran.

Keywords: A. Baumannii; Hospital Isolates; Integron Class; Iran