Summary

Acinetobacter species has emerged recently as a major cause of health care- associated infections due to the extent of its antimicrobial resistance and its ability to cause nosocomial outbreaks. Resistance ability of these bacteria is mainly related to the presence of genetic elements called Integrons.

The aim of this study is to investigate the presence of Integrons class I,II and III in multidrug resistant ***Acinetobacter*** spp,isolated from Al-Diwaniya Teaching Hospital. Sixteen isolates of *Acinetobacter* were diagnosed and identified by growth CHROMagar™ *Acinetobacter*/MDR and standard biochemical tests. Identification of isolates to genus level was confirmed finally by detection of 16S rDNA while identification of *Acinetobacter* isolates to species level was done by VITEK 2 compact system. Totally, sixteen *Acinetobacter* spp. were obtained from department of Medical Microbiology Department. Results showed that the vast majority of isolates belong to A. *baumannii* complex 15 (93.8%) while only one isolate 1 (6.2%) belongs to species *A. lwoffii*.

The technique used is specific and sensitive by using real-time polymerase chain reaction by using serial dilutions of the housekeeping gene(*rpoB*) determination of standard curve which is essential for Quantitative measurement of Integrons copy number .

Based on the antibiotic susceptibility profile that done for Acinetobacter isolates showed a variation in their sensitivity against tested antibiotics, where it was high for β-lactame antibiotics(65%-100% for Cephalosporines,32-100% for penicillin),whereas the antibiotics belong to monolactam family were 12.5%,while it was 44-57% for flouroquinolones.Aminoglycosides was 56% and 80% for nitrofuradantin.

Results revealed the presence of Integrons class I and III in a ratio of 100% in all tested isolates, while class II present in a ratio of 68.5 %. Real-time PCR detected Integron I and III with different cycles ranging ≥9 threshold cycle. Integron I was detected with high DNA copy number in early threshold cycles. While Integron III detected with undetermined copy number i.e. negative . Integron II was detected in all samples but with a very low copy number.

In conclusion, the results emphasized that all high resistant isolates to antibiotics possess the integron class I based on their high copy number detected in real-time qPCR .