

MECHANISMS OF RESISTANCE TO AMINOGLYCOSIDES AND
FLUOROQUINOLONES IN *Acinetobacter baumannii* CLINICAL
ISOLATES IN ALGERIAN HOSPITALS

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Abstract :

The aim of the present study was to identify antibiotic resistance encoding genes in 71 multidrug resistant *A. baumannii* isolates. Antibiotic susceptibility testing was performed by the disk diffusion method as well as Etest method. Presence of antibiotic resistance genes that are involved in aminoglycoside and fluoroquinolone resistance were screened by PCR amplification and sequencing. The resistance rates were very high among the 71 *A. baumannii* for aminoglycosides (22 to 80%) and fluoroquinolones (>90%). Antibiotic resistance encoding genes detected were as follows : *aph(3'')-VI* (50.7 %), *aadA* (63.4%), *ant(2'')-I* (14.1%), *aac(3)-Ia* (91.1%) and *aac(6')-Ib* (4.2%). Resistance to ciprofloxacin was due either to mutation Ser83Leu in *gyrA* (94.4%) or to double mutations Ser83Leu and Ser80Leu (or Ser84Leu) in *gyrA* and *parC* (69.0%), respectively. In conclusion, we show that clinical isolates of *A. baumannii* recovered in Algerian hospitals present a high level of resistance to antimicrobial agents and harbor many kinds of antibiotic resistance encoding genes.

Keywords: Multidrug resistant bacteria; *Acinetobacter baumannii*; Aminoglycoside-modifying enzymes; fluoroquinolone resistance.