

Title: DETECTION OF PLASMID-MEDIATED QUINOLONE RESISTANCE GENES (*qnr*) AMONG *Acinetobacter baumannii* ISOLATES FROM BRAZIL.

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Abstract:

Introduction: *Acinetobacter baumannii* is an opportunistic bacteria frequently associated with nosocomial outbreaks worldwide. This microorganism is able to spread in the hospital environment and is highly capable of developing resistance to antimicrobial agents. Effective treatment of infections caused by this microorganism is compromised by a high level of resistance to antimicrobials. Here, we investigated the distribution of plasmid-mediated quinolone resistance (PMQR) gene in OXA-producing *A. baumannii* isolates recovered different Brazilian states. In the past decade, PMQR genes have been found in bacterial isolates from around the world. These mechanisms are able to reduce the susceptibility of bacteria to quinolones, usually not to the level of non-susceptibility, but facilitating the selection of more quinolone resistant mutants and treatment failure. Methods: In this study, a total of 40 Carbapenem-resistant *A. baumannii* clinical isolates, harboring oxacilinasases genes, were included. The disc diffusion method was used to evaluate antimicrobial susceptibility according to CLSI guidelines. A polymerase chain reaction (PCR) was used to detect plasmid-mediated quinolone resistance gene (*qnrA*, *qnrB* and *qnrS*). DNA sequencing was performed using an ABI Prism 3100 genetic analyser (Applied Biosystems) at the PDTIS-IOC DNA Sequencing Platform. Results and Conclusion: According PCR results, *qnrA* gene was observed in 37.5% (n=15 isolates). In this work, *qnrB* and *qnrS* genes were not found. Among *qnrA*-positive *A. baumannii*, all isolates displayed a multidrug resistance profile, including resistance to ciprofloxacin, piperacillin/tazobactam, ampicillin/sulbactam, ceftazidime, cefepime, meropenem and imipenem. DNA Sequencing allowed us to identify *qnrA1* variant gene. Plasmid-mediated quinolone resistance genes have been found in a variety of *Enterobacteriaceae*, especially *Escherichia coli* and species of *Enterobacter* and *Klebsiella*, but they have occasionally been reported in non-fermenters (*Pseudomonas aeruginosa* and *A. baumannii*).

Keywords: *Acinetobacter baumannii*, plasmid-mediated quinolone resistance, *qnrA*, Brazil.

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