

# Antibiotics and Antibiotic Resistance

October 13-15, 2016 Manchester, UK

## Co-existence of *blaOXA-23* with *armA* in quinolone-resistant *Acinetobacter baumannii* from a Chinese University Hospital

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Nosocomial infections caused by Quinolone-Resistant *Acinetobacter Baumannii* (QRAB) have been increasing in recent years, posing a threat to public health. In this study, we aimed to determine the mechanisms of quinolone resistance in *A. baumannii* isolates and investigate the occurrence of carbapenem resistance gene *blaOXA-23* and aminoglycoside resistance gene *armA* among these QRAB. Totally, 101 *A. baumannii* isolates were collected from one university hospital in western China between 2011 and 2012. All isolates were identified and confirmed by sequencing analysis of 16S rRNA internal transcribed spacer and *recA*. The Minimal Inhibitory Concentrations (MICs) of ciprofloxacin and levofloxacin were determined by agar dilution. Plasmid-Mediated Quinolone Resistance Determinants (PMQRs) were performed with PCR assay, whilst *gyrA* and *parC* genes of QRAB were amplified and sequenced. The results showed that 77 QRAB harbored mutations of *gyrA* and *parC*, whereas PMQRs were not detected. Additionally, 41 isolates had resistance to aminoglycosides and carbapenems due to the expression of a 16S rRNA methylase *armA* (with high level resistance) and acquisition of OXA-type carbapenemase OXA-23. Obviously, most of sequence types belonged to clonal complex 92 in these 41 isolates, which demonstrated that these isolates had a common origin and caused nosocomial infection. An *A. baumannii* clone producing OXA-23, *armA* along with mutations of Quinolone Resistance-Determining Regions (QRDRs) has been identified as an emerging and rapidly spreading pathogen. To our knowledge, this is the first report of hospital dissemination of *A. baumannii* carrying *blaOXA-23*, *armA* and mutations of QRDRs in QRAB in western China.

### Biography

Baodong Ling has completed his MD from West China Medical University and worked as a Visiting Scholar in University of Zurich in 1996. He is a Distinguished Professor of Pharmacology. He is also the Director of Small Molecule Drugs Key Laboratory of Sichuan Province and Institute of Materia Medica. He has published more than 60 papers in reputed journals and has been serving as an Editorial Board Member of *Chinese Journal of Antibiotics* and *World Notes on Antibiotics*.

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