

HIGH PREVALENCE OF *BLA*_{OXA-23} IN OLIGOCLONAL CARBAPENEM-RESISTANT *ACINETOBACTER BAUMANNII* FROM SIRIRAJ HOSPITAL, MAHIDOL UNIVERSITY, BANGKOK, THAILAND

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Abstract. *Acinetobacter baumannii* has emerged in health care settings as a pandrug-resistant pathogen. Carbapenems are ineffective for treatment of this pathogen. Here we explored the molecular epidemiology and mechanism of carbapenem resistance in clinical isolates of carbapenem-resistant *A. baumannii* (CRAB). Antibiotic susceptibility by disk diffusion test was performed using imipenem and meropenem disk on 200 different clinical CRAB isolates. All isolates were resistant and gave inhibition zones of both antibiotic disks ≤ 13 mm. Polymerase chain reaction (PCR) was carried out on 37 randomly selected isolates to amplify the common carbapenem hydrolyzing β -lactamase genes (*bla*_{OXA-23}-like, *bla*_{OXA-24/40}-like, *bla*_{OXA-58}, *bla*_{IMP}, and *bla*_{VIM}). Clones were resolved by PCR-randomly amplified polymorphic DNA (PCR-RAPD) and plasmid profiling. PCR amplification and DNA sequencing revealed the existence of *bla*_{OXA-23} downstream of the insertion element, IS*Aba1*, in all 37 isolates tested. This segment was present in the carbapenem-resistant genomic resistant island AbaR4. These isolates were resolved into three RAPD types (Type I, 20 isolates; Type II, 16 isolates; and type III, 1 isolate) and 10 plasmid profiles. The CRAB isolates investigated here were oligoclonal and carbapenem resistance was conferred by the presence of *bla*_{OXA-23}. The presence of this β -lactamase gene in many clonal isolates indicated its wide spread.

Key words: *A. baumannii*, β -lactamase gene, carbapenem resistance, CRAB

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