DISSEMINATION OF CLASS I INTEGRON IN ACINETOBACTER BAUMANNII ISOLATED FROM VENTILATOR-ASSOCIATED PNEUMONIA PATIENTS AND THEIR ENVIRONMENT

Suntariya Sirichot1,2, Pornphan Diraphat3, Fuangfa Utrarachkij3, Chanwit Tribuddharat4 and Kanokrat Siripanichgon3

1Faculty of Graduate Studies, Mahidol University, 2Ramathibodi Hospital, Mahidol University, 3Department of Microbiology, Faculty of Public Health, Mahidol University, 4Department of Microbiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok, Thailand

Abstract. Multidrug resistant Acinetobacter baumannii has become the most common cause of health care-associated infections at Maharaj Nakhon Si Thammarat Hospital, Thailand. The objective of the study was to detect integrons using PCR-based method from 96 A. baumannii isolates from ventilator-associated pneumonia (VAP) patients and their environment. Antibiotic susceptibility was determined using a disk diffusion technique. Forty-six isolates exhibited integrase genes, with only class I and class II integron detected in 43 and 3 A. baumannii isolates, respectively. Twenty-seven of 52 clinical and 19 of 44 environmental isolates were integron-positive. Detection rate of integron-positive A. baumannii isolated from VAP patients increased from 25% to 83% over the 4 month study period. The majority (91%) of integron-positive A. baumannii showed resistance to 6 or more of 11 antibiotics tested and 72% of class I integron-positive isolates were imipenem-resistant. Thus, class I integron-positive A. baumannii had spread among the VAP patients and into hospital environment, the latter acting as reservoirs of potential pathogens possessing drug resistance genes.