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METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS ISOLATED
FROM PATIENTS WITH RESPIRATORY TRACT INFECTIONS IN SIRIRAJ
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Methicillin-resistant *Staphylococcus aureus* (MRSA) is one of the major causative pathogens in both community-acquired and nosocomial infections and has become a direct cause of death in patients admitted to hospitals. The multiple antimicrobial resistance of MRSA limits the variety of antimicrobial agents which may be used. Since MRSA continues to be a problem for hospitals worldwide, the standardization of typing systems is needed to characterize MRSA for identifying and defining outbreaks.

In order to study the epidemiology of MRSA in patients admitted to Siriraj Hospital with respiratory tract infections during the years 1994-1997, 142 strains (62.56%) of MRSA were isolated. Few strains (1.41%) had no ability for β -lactamase production. MRSA were most commonly found from patients admitted to intensive care units (43.2%), followed by medical ward services (30.4%).

Antibiogram and plasmid profile analysis of MRSA were studied as epidemiological markers. The antibiogram method produced many patterns. The plasmid profile analysis was recommended as a good discriminatory method because it is a useful, cheap and reproducible technique for tracing the spread of MRSA which is suitable for most clinical laboratories. By using this technique to characterize each strain of MRSA by the number of plasmid it contained and the size of the fragments which were generated by restriction endonuclease enzyme *EcoRI*, 15 different plasmid profiles were demonstrated from 125 strains of MRSA. The most common plasmid profiles, in descending order of occurrence, were profiles 1,2,13,14 and 11. The sensitivity test of MRSA against 20 antimicrobial agents were also performed. MRSA strains were all susceptible to vancomycin and also susceptible to rifampicin (96.78%), fusidic acid (96%) and trimethoprim-sulfamethoxazole (61.6%). MRSA was resistant to most antimicrobial agents such as clindamycin, chloramphenicol, imipenem, amikacin, fosfomycin, ciprofloxacin, erythromycin, gentamicin and all cephalosporins.