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Surveillance of antimicrobial resistance among clinical isolates of *Acinetobacter baumannii* and *Staphylococcus aureus* recovered from a teaching hospital in Taiwan

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Over the past decade, multiple drug resistance to antibiotics is an alarming reality worldwide. Relatively common strains of infectious bacteria such as *Acinetobacter baumannii* and *Staphylococcus aureus* are increasingly resistant to most presently available drugs in Taiwan. This study aimed to investigate the antimicrobial susceptibility in clinical isolates to 10 antibiotics. A total of 286 bacterial strains were isolated from patients' blood or sputum during 2006–2010 from Chia-Yi Christian Hospital in Taiwan and underwent susceptibility testing. According to Clinical Laboratory Standards Institute guidelines antimicrobial susceptibility testing was performed by disc diffusion method and agar dilution methods to determine the minimal inhibitory concentration (MIC). Each organism-antibiotic combination has different diameters signifying susceptible (S), intermediate (I), resistant (R). Among the 148 *Staphylococcus aureus* isolates, 29.05%, 100%, 88.5%, 94.5%, 71.62%, 68.24%, 40.5% and 96.6%, respectively, were resistant to Tetracycline, Penicillin G, Kanamycin, Amikacin, Erythromycin, Gentamycin, Sulfamethoxazole-Triethoprim, and Streptomycin. Among the 138 *Acinetobacter baumannii* isolates, overall rates of percent resistant were as follows: Tetracycline (65.2%), Penicillin G (100%), Cephalexin (99.28%), Gentamycin (62.33%), Sulfamethoxazole-Triethoprim (77.55%), Amikacin (64.16%), Streptomycin (71%), Ticarcillin (63.86%), Ceftazidime (68.9%) and Piperacillin (73.2%). The resistance levels to most of the antibiotics tested was very high with a range of MIC values between 16-32 µg/mL. This finding revealed a higher resistance among the *Acinetobacter baumannii* and *Staphylococcus aureus* isolates to a wide range of antimicrobial agents. It is necessary to monitor and optimize the antimicrobial use in order to reduce occurrence and spread of antimicrobial resistant pathogens.

Biography

Li-Yeh Chuang received her MS degree from Department of Chemistry at University of North Carolina, USA, in 1989 and PhD degree from Department of Biochemistry at North Dakota State University, USA, in 1994. She is a Professor of the Department of Chemical Engineering & Institute of Biotechnology and Chemical Engineering at I-Shou University, Kaohsiung, Taiwan. Her main areas of research are bioinformatics, biochemistry and genetic engineering.

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