

In vitro activities of 28 antimicrobial agents against methicillin-resistant staphylococcus aureus (MRSA) from a clinical setting in Malaysia.

ABSTRACT

Methicillin-resistant *Staphylococcus aureus* (MRSA), an established nosocomial and emerging community pathogen associated with many fatalities due to its hyper-virulence and multiple drug resistant properties, is on the continuous rise. To update the current status on the susceptibility of local MRSA isolates to various classes of antibiotics and to identify the most potent antibiotics, thirty-two clinical isolates comprised of hospital acquired (HA) and community acquired (CA) infections were investigated by disk diffusion test. Of the 32 MRSA isolates, 14 (43.75%) and 18 (56.25%) were community and hospital acquired MRSA, respectively. All isolates were multiple drug resistant to more than 3 classes of antibiotics despite the source or specimen from which it was isolated. The oxacillin MICs for all isolates ranged from 2 to ≥ 256 $\mu\text{g/ml}$. Twenty-five of 26 erythromycin-resistant MRSA isolates exhibited an inducible MLSB resistance phenotype while one showed an MS phenotype. More than half the isolates (68.75%) were resistant to at least one of the six aminoglycosides tested, with netilmicin as the most susceptible. The most effective antistaphylococcal agents were linezolid, vancomycin, teicoplanin and quinupristin/dalfopristin exhibited 100% susceptibility. Since MRSA is under continuous pressure of acquiring multiple drug resistance, it is imperative to focus routine surveillance on HA and CA-MRSA strains to monitor and limit the spread of this organism.

Keyword: Anti-bacterial agents; Disk diffusion antimicrobial tests; Methicillin-resistant *Staphylococcus aureus* (MRSA); Malaysia.