

Species Distribution and Incidence of Inducible Clindamycin Resistance in Coagulase-Negative Staphylococci Isolated from Blood Cultures of Patients with True Bacteremia in Turkey

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Abstract : During the last few decades, the increasing prevalence of methicillin resistant-CoNS isolates has become a common problem worldwide. Macrolide-lincosamide-streptogramin B (MLSB) antibiotics are effectively used for the treatment of CoNS infections. However, resistance to MLSB antibiotics is prevalent among staphylococci. The aim of this study is to determine species distribution and the incidence of inducible clindamycin resistance in CoNS isolates caused nosocomial bacteremia in our hospital. Between January 2014 and October 2015, a total of 484 coagulase-negative CoNS isolates were isolated from blood samples of patients with true bacteremia who were hospitalized in intensive care units and in other departments of Istanbul University Cerrahpasa Medical Hospital. Blood cultures were analyzed with the BACTEC 9120 system (Becton Dickinson, USA). The identification and antimicrobial resistance of isolates were determined by Phoenix automated system (BD Diagnostic Systems, Sparks, MD). Inducible clindamycin resistance was detected using D-test. The species distribution was as follows: *Staphylococcus epidermidis* 211 (43%), *S. hominis* 154 (32%), *S. haemolyticus* 69 (14%), *S. capitis* 28 (6%), *S. saprophyticus* 11 (2%), *S. warnerii* 7 (1%), *S. schleiferi* 5 (1%) and *S. lugdunensis* 1 (0.2%). Resistance to methicillin was detected in 74.6% of CoNS isolates. Methicillin resistance was highest in *S. haemolyticus* isolates (89%). Resistance rates of CoNS strains to the antibacterial agents, respectively, were as follows: ampicillin 77%, gentamicin 20%, erythromycin 71%, clindamycin 22%, trimethoprim-sulfamethoxazole 45%, ciprofloxacin 52%, tetracycline 34%, rifampicin 20%, daptomycin 0.2% and linezolid 0.2%. None of the strains were resistant to vancomycin and teicoplanin. Fifteen (3%) CoNS isolates were D-test positive, inducible MLSB resistance type (iMLSB-phenotype), 94 (19%) were constitutively resistant (cMLSB -phenotype), and 237 (46,76%) isolates were found D-test negative, indicating truly clindamycin-susceptible MS phenotype (M-phenotype resistance). The incidence of iMLSB-phenotypes was higher in *S. epidermidis* isolates (4,7%) compared to other CoNS isolates.

Keywords : bacteremia, inducible MLSB resistance phenotype, methicillin-resistant, staphylococci

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