



Inducible clindamycin resistance among clinical isolates of methicillin susceptible staphylococcus aureus (MSSA) in selective hospitals in Tehran

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Abstract

Introduction: Macrolide, lincosamide and streptogramin B (MLSB) resistance is the most widespread and clinically important mechanism of resistance encountered with Gram-positive organisms. Resistance may be constitutive (cMLSB phenotype) or inducible (iMLSB phenotype). The iMLSB phenotypes are not differentiated by using standard susceptibility test methods, but can be distinguished by erythromycin-clindamycin disk approximation test (D-test). The present study was planned to demonstrate in vitro inducible clindamycin resistance (iMLSB) in erythromycin-resistant clinical isolates of methicillin susceptible *Staphylococcus aureus* (MSSA) to guide therapy.

Materials and Methods: During a period of December 2012 to April 2013 a total of 101 *S. aureus* isolates from various clinical specimens were included in the study. Antimicrobial susceptibility test was done by Kirby-Bauer's disc diffusion. For detection of inducible clindamycin resistance, D test using erythromycin and clindamycin as per CLSI guidelines was performed for MSSA.

Results: 43(42.6%) clinical isolates showed methicillin susceptible. 8 (18.6%) of MSSA were erythromycin resistant. In MSSA, 6.9% and 11.6% isolates were found to have the constitutive and inducible MLSB resistance phenotypes respectively. All inducible MLSB resistance were D phenotype and D⁺ phenotype was not seen in inducible MLSB resistance.

Conclusion: Study showed that D test should be used as a mandatory method in routine disc diffusion testing to detect inducible clindamycin resistance in *Staphylococcus aureus* for the optimum treatment of patients.

Key words: Methicillin-susceptible *S. aureus*, Constitutive resistance, Inducible resistance, D-test

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