Antibiotic Resistance Profile of Community-Aassociated S. aureus Isolated From Nasal Specimens in Arak-Iran

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Background & Objectives: *S. aureus* is a major cause of infections in both hospital and the community. Methicillin-resistant *Staphylococcus aureus* (MRSA) has emerged as a cause of infections in persons within the general community (community-associated methicillin-resistant *Staphylococcus aureus* (CA-MRSA). Diseases caused by S.aureus ranges from cutaneous infection to life-threatening systemic illness. Antibiotic resistant bacteria have been a source of ever-increasing therapeutic problem; hence, continued surveillance of bacterial susceptibility pattern is useful to determine the existing and future challenges of effective therapy. The aim of this study was to determine the distribution and antibiotic susceptibility profile of community-associated *S. aureus* isolated from nasal specimens in Arak University of Medical Sciences.

Methods: 82 *S. aureus* strains isolated from the anterior nares of 568 healthy students subjected to present study. Antibacterial susceptibility profiles of the isolates to panel of 17 antibiotics were determined by disc diffusion methods according to CLSI guidline.

Results: Our *S. aureus* isolates showed high percent susceptibility against 4 antibiotics: Vancomycin(100%), Gentamycin (100%), Amicacin (100%) and netilmicin (100%). Other antibiotics showed lower susceptibility : Levofloxacin(98.6%), Cotrimoxazole(98.6%), Mupirocin(97.2%), Dalfopristin Quinupristin(97.2%), Ciprofloxacin(97.2%), Cefoxitin(95.8%), Rifampicin(95.8%) Linezolid(94.4%), Fusidic acid(88.8%), Clindamycin(84.6%), Tetracycline(83.2%), Tigecycline(83.2%) and Erythromycin(83.2%).

Conclusion: Many community clones of *S. aureus* have a non-multidrug resistant antimicrobial profile, providing increased options for empirical and directed therapy of infections caused by these strains. However, the recent study of increasing non-β lactam resistance in community clones of *S. aureus*, provides a timely warning for clinicians making decisions about therapy for patients potentially infected with these strains. Continued monitoring of global epidemiology and emerging drug resistance data is critical for the effective management of these infections.

Keywords: Community-Associated *S. aureus*; Antibiotic Resistance; Antibiotic Susceptibility