

Antimicrobial Susceptibility Pattern of Methicillin-Resistant *Staphylococcus Aureus* in Healthcare Workers at Center of Iran

Ehsanollah Ghaznavi-Rad*¹; Mohsen Rezazadeh^{1,2}; Rasoul Yousefi Mashouf³; Bitia Bakhshi⁴; Hossein Sarmadyan¹

1-Department of Medical Microbiology, Faculty of Medicine, Arak University of Medical Sciences, Arak, Iran

2- Student Research Committee, Arak University of Medical Sciences, Arak, Iran

3-Department of Medical Microbiology, Faculty of Medicine, Hamadan University of Medical Sciences, Hamadan, Iran

4- Department of Medical Microbiology, Faculty of Medicine, Tarbiat Modares University, Tehran, Iran

mohsen.rezazadehh@yahoo.com

Background & Objective: *Staphylococcus aureus* has been recognized as an epidemiologically important pathogen which is a great concern in hospital setting as a causative agent of nosocomial infection. Despite antibiotic therapy, staphylococcal infections occur frequently in hospitalized patients and have severe consequences. The spread of this microorganism is through contaminated hands and nose of healthcare workers. Today main problem with *Staphylococcus aureus* is resistance to wide range of Antibiotics. Therefore the aim of present study is to determine the susceptibility pattern of *Staphylococcus aureus* isolated from the nose and hands of the healthcare workers.

Methods: Of 250 samples obtained from the nose and hands of healthcare workers, 34 *Staphylococcus aureus* isolate were recognized. All the isolates were confirmed by phenotypic and genotypic (sa442). Antibacterial susceptibility patterns of the isolates to 17 antibiotics were determined by disc diffusion according to the methods of the CLSI.

Result: The results of Antibacterial susceptibility patterns are as follows: mupirocin (100%), vancomycin (96.97%), linezolid (100%), ciprofloxacin (72.73%), quinupristin-dalfopristin (100%), rifampicin (76%), chloramphenicol (100%), netilmicin (94%), Levofloxacin (73.53%), tigecycline (62.07%), eicoplanin (87.88%), fusidic acid (94.96%), ceftazidime (73.53%), trimethoprim-sulfamethoxazole (88.24%), tetracycline (50%), erythromycin (56.53%), clindamycin (62%), gentamicin (73.53%).

Conclusion: In conclusion, the results of the observations described herein show clearly that nasal colonization among medical personnel is a function of various risk factors. Personal hygiene and behaviour may however be the key to reducing colonization and spread of *S.aureus*. Handwashing seems to reduce colonization rate and therefore, it would be proposed that infection control intervention through handwashing be strictly adhered to. Improvement of infection control measures like periodicity of healthcare workers is necessary to prevent antibiotic resistant *S.aureus* from healthcare workers to patients.

Keywords: *Staphylococcus aureus*; Sa442; Susceptibility Pattern; CLSI