

The Spread of Beta Lactam Resistant *Staphylococcus aureus* and *Staphylococcus epidermidis* isolated from Al-Zahra Hospital in Isfahan, Iran

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Abstract

Background and objectives: Hospital surfaces can serve as a reservoir of potential pathogen bacteria. Staff hands are the most important source of transmission in hospital. The prevalence of β -lactamase producer bacteria in staff hands and hospital surfaces, increase antibiotic resistance nosocomial infection. The aim of this study was to survey the spread of beta-lactam resistance *Staphylococcus sp.* in Al-zahar hospital in Isfahan.

Material and Methods: The research was carried out during 2005-2007 years in Al-zahra hospital in Isfahan. Overall, 274 samples (194 strains from surface and 80 strains from staff hands) were assessed. The surface samples collected by using swab in Nutrient Broth (NB) and staff hand samples by Finger Print method. Bacterial identification was performed by Bacteriological methods, β -lactamase production by acidimetric method and antibiogram pattern by Kirby Bauer method.

Results: Of 194 strains isolated from hospital surfaces, 105 (53.7%) strains are related to *Staphylococcus sp* while of 80 strains isolated from staff hands are 28 (35%). According to acidimetric test, 79.8% of *S.aureus* strains and 68.55% of *S.epidermidis* strains produce β -lactamase.

Conclusion: Results show high frequency of antibiotic resistance and β -lactamase producer *Staphylococcus sp.* on staff hands and hospital surfaces. Reduction of bacteria in these sources is the most important manner to control transfer of virulence agents in bacteria and create of antibiotic-resistant strains.

Key words: *Staphylococcus aureus*, *Staphylococcus epidermidis*, β -lactamase, Drug Resistance, Bacterial, Hospital.