Original Paper

Evaluation of plasmid resistance to Mupirocin in *Staphylococcus aureus* strains isolated from clinical specimens of the skin of hospital employees and hospitalized patients

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Abstract

Background and Objective: Mupirocin is a secreted antibiotic inhibitor of Isoleucine-tRNA, a bacterial synthetase that is used against yellow wounds from *Streptococcus* pyogenic and *Staphylococcus aureus*. This study was carried out to determine the plasmid resistance of mupirocin in *Staphylococcus aureus* strains isolated from clinical specimens of the skin of hospital employees and hospitalized patients.

Methods: This descriptive study was performed on 150 strains of *Staphylococcus aureus* isolated from clinical specimens of the skin of patients and employees of three hospitals in Qom, Iran during 2014-15. In order to confirm the identity of *Staphylococcus aureus* isolates, conventional biochemical methods were used. Also, PCR of srRNA16 was used for molecular confirmation of isolates. The presence of mupA (iles-2) and mupB plasmid genes was investigated using PCR method and AluI enzyme digestion plan was performed for them. Disc diffusion method was used to demonstrate resistance to mupirocin.

Results: Seven isolated samples (4.66%) were resistant to mupirocin. All Mupirocin-resistant isolates possessed PCR-positive mupacysin mupirocidal genes (iles-2) and mupB, and all plasmid genes were resistant to all resistant specimens. Genotyping of mupB gene was able to isolate samples from patients and staff as well as male and female.

Conclusion: The prevalence of mupirocin-resistant *Staphylococcus aureus* isolated from skin specimens was low.

Keywords: *Staphylococcus aureus*, Plasmid, Mupirocin, Skin, Patient

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