

## Prevalence of Methicillin-Resistant *Staphylococcus aureus* with *mecA* Gene Isolated From Admitted Patients in Teaching Hospitals in Ahvaz City, Iran

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**Background & Objectives:** *Staphylococcus aureus* is a major cause of nosocomial infections, osteomyelitis, myocarditis, pneumonia in children, skin abscesses and infected surgical wounds. Methicillin is one of the most important antibiotics that used in treatment of *S. aureus* infections, however, resistance to this antibiotic has been raised in recent years. The aim of this study was detection of *mecA* gene in methicillin-resistant *S. aureus* (MRSA) which were isolated from admitted and hospitalized patients.

**Methods:** 255 isolates suspected to *S. aureus* were collected from patients in three teaching hospitals in Ahvaz city, Iran, during 2011. These strains were isolated from different specimens and identified using microscopic and standard biochemical tests. *S. aureus* strains phenotypically resistance to methicillin were screened after determination of drug resistance patterns of these strains against 10 antibiotics by disk diffusion Methods. Then, DNA was extracted from MRSA and *mecA* gene was amplified by PCR.

**Results:** Out of 255 suspected isolates, 180 strains were confirmed as *S. aureus*. The examined specimens were as follow: lesions (36.1%), catheters (13.8%), blood (13.3%), trachea (5%), abscesses (5%), urine (2.7%) and the other specimens (24.1%). Antibiogram results and the rate of sensitivity to examined antibiotics were as follow: Vancomycin (100%), nitrofurantoin (98.3%), chloramphenicol (98.3%), rifampin (90%), Norfloxacin (71.1%), gentamicin (69.4%), ciprofloxacin (67.2%), azithromycin (66.7%), oxacillin (62.8%), cotrimoxazole (60.6%). These results also showed that out of 180 strains of *S. aureus*, 59 strains (32.8%) were phenotypically resistance to methicillin which among them, the *mecA* gene were confirmed in 58 strains by PCR.

**Conclusion:** The results of this study showed that all of *S. aureus* (100%) isolates were susceptible to Vancomycin although, nearly one third of them were resistance to methicillin. We believe Vancomycin could be used as a choice drug for treatment of Staphylococcal infections, especially MRSA, but based on some of the reports about Vancomycin-resistant *S. aureus* (VRSA), determination of MIC and sensitivity of *S. aureus* isolates to Vancomycin is necessary for prevention of spreading of VRSA in community.

**Keywords:** Nosocomial Infection; *Staphylococcus aureus*; MRSA; Drug Resistance