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**Title: The prevalence of multidrug resistant Staphylococcus aureus in patients admitted to ICU of Taleghani Hospital**

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**Abstract:** Background and objectives: Staphylococcus aureus is one of the most frequent causes of nosocomial infection in intensive care unit (ICU) patients. Infections caused by multi drug-resistant S. aureus have been associated with increased mortality and hospital costs. The determination of antibiotic resistance patterns is essential for appropriate treatment of S. aureus in particular methicillin resistant S. aureus (MRSA) infections.

**Materials and Methods:** The clinical isolates (including: tracheal aspirate, urine, blood and wound) were identified as S. aureus based on catalase, coagulase, mannitol fermentation and DNase tests. The MRSA strains were detected using disk diffusion and polymerase chain reaction (PCR) method. Antimicrobial resistance pattern of tested antibiotics were determined by Disk Diffusion Method according to CLSI guideline.

**Results:** The prevalence of S. aureus isolates among clinical specimens was 29.5% (28/96). Methicillin resistance was present in 25 of 28 (89%) S. aureus isolates. All MRSA isolates were resistant to ampicillin, penicillin, kanamycin, and erythromycin. More than 90% of MRSA isolates were resistant to ciprofloxacin, clindamycin, tobramycin, gentamicin, and tetracycline. Seventy six percent of MRSA isolates were resistant to rifampicin. All MRSA isolates were susceptible to vancomycin and linezolid. The methicillin susceptible S. aureus (MSSA) isolates were susceptible to more tested antibiotics.

**Conclusion:** The results of this study can provide guidance for physicians toward a more appropriate treatment of S. aureus infections. Our results also revealed the need for further investigations using a higher number of specimens representing a wider variety of locations to determine the antibiotic resistance patterns in our state more precisely.

**Keywords:** ICU, MSSA, MRSA, PCR

**Presentation:** Poster