Antibiotic Susceptibility of *Staphylococcus aureus* and *Enterococcus* Spp. Isolated from some Hospitals in Tehran

Razaz Rahmati, N. (BSc)  
MSc Student of Bacteriology, Tarbiat Modares University, Tehran, Iran

Mohabati Mobarez, A. (PhD)  
Associate professor of Bacteriology, Department of Bacteriology, Tarbiat Modares University, Tehran, Iran

Khoram Abadi, N. (PhD)  
Associate professor of Bacteriology, Department of Bacteriology, Tarbiat Modares University, Tehran, Iran

Sharifzade peyvasti, V. (BSc)  
MSc Student of Bacteriology, Department of Bacteriology, Tarbiat Modares University, Tehran, Iran

Shokoohizade, L. (PhD)  
PhD of Bacteriology, Department of Medical Laboratory, School of Paramedicin, Jundishapur University of Medical Sciences, Ahvaz, Iran

Corresponding Author: Mohabati Mobarez, A.  
Email: mmmmobarez@modares.ac.ir

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Abstract

**Background and Objective:** Vancomycin-resistant enterococci (VRE) and methicillin-resistant *Staphylococcus aureus* (MRSA) are the leading nosocomial pathogens in Iran. We aimed at evaluating the resistance patterns of *Staphylococcus aureus* and enterococci to the antibiotics recommended by Clinical and Laboratory Standards Institute (CLSI).

**Material and Methods:** Two-hundred forty *Staphylococcus aureus* and 203 *Enterococcus* spp isolated from urine, wound, blood, trachea, stool and other clinical specimens of inpatients and outpatients were obtain from some hospitals in Tehran. Sensitivity of *S. aureus* to oxacillin, vancomycin, chloramphenicol, nitrofurantoin, erythromycin, clindamycin and linezolid were determined by disk diffusion according to CLSI (M100-S22) guidelines. Likewise, sensitivity of enterococci to ampicillin, vancomycin, teicoplanin, tigecycline, linezolid, tetracycline, chloramphenicol and nitrofurantoin was invesditated by the same method.

**Results:** Of 240 *S. aureus* isolates, 56%, 46.6% and 40.4% were resistant to oxacillin, erythromycin and clindamycin, respectively. We found one *S. aureus* isolate with low susceptibility to vancomycin (VISA; 0.5%). All *S. aureus* isolates were sensitive to chloramphenicol, nitrofurantoin and linezolid. Of 203 *Enterococcus* spp., 47.3%, 24.6%, 9.4%, 85.2%, 11.3% and 4.4% were resistant to ampicillin, vancomycin, teicoplanin, tigecycline, chloramphenicol and nitrofurantoin, respectively. All these isolates were sensitivity to tigecycline and linezolid.

**Conclusion:** Resistance of *S. aureus* isolates to oxacillin, erythromycin and clindamycin was significant. Enterococci isolates were remarkably resistant to ampicillin, vancomycin, teicoplanin, tigecycline, chloramphenicol and nitrofurantoin. Given our results, we suggest vancomycin, chloramphenicol, linezolid and nitrofurantoin for *S. aureus* infections and tigecycline and linezolid as drugs of choice for enterococcal infections treatment.

**Keywords:** Staphylococcus aureus, Enterococcus, Tehran, Hospitals