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**Title:** Dominancy of high level gentamicin and vancomycin resistance phenotypes among *E. faecium* isolates from different hospitals in Tehran, Iran

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**Abstract:**

Introduction:

During the past several decades enterococcus spp. emerged as important nosocomial pathogens. This importance is attributed primarily to high degree of antibiotic resistance. Among different species of enterococci, *E. faecium* has shown greatest resistance patterns against variety of antibiotics including gentamicin and vancomycin. Emergence of high level resistance (HLR) and multi drug resistance (MDR) among these bacteria in new years become a major concern in clinical setting. The aim of this study was investigating the prevalence, frequency and diversity of gentamicin and vancomycin resistance among different *E. faecium* isolates from five hospitals in Tehran, Iran.

Materials and methods:

Different clinical samples (i.e. urine, wounds, blood, sputum and trachea) were obtained from hospitalized patients during 2010-2011. Culture on selective media, biochemical identification tests and species specific PCR for ddl genes were used for characterization of the isolated bacteria. The antibiotic susceptibility testing were done by disk diffusion and agar dilution methods according to the standard criteria for CLSI.

Results:

Out of 136 enterococcus isolates, 52% (n=71), 45.5% (n=62) and 2.2% were identified as *E. faecium*, *E. faecalis*, *E. gallinarum*. 86.7% of *E. faecium* isolates were MDR. The most prevalent resistance phenotypes among *E. faecium* isolates was against Erytromycin, Tetracyclin, Ciprofloxacine, ampicillin, gentamicin and vancomycin. Coreistance to ampicillin, gentamicin and vancomycin was 52.7 % among the MDR isolates. There was the low rate of similarity resistance pattern between different hospitals and their units; all of the vancomycin resistance isolates also showed HLR for Gentamicin.

Conclusion:

Results from this study showed a higher frequency for *E. faecium* species among these isolates. Dominancy of MDR and high level resistant enterococci in these hospitals seems to be a major alarm in therapeutic strategies. The relative congruency in resistance patterns among the isolates from each hospital proposed these strains as resident bacteria therein.

Key words: resistance, Gentamicin, Vancomycin, MDR

**Presentation:** Poster