# Antimicrobial Susceptibility Pattern of Vancomycin Resistance Enterococci and Moulecular Detection of VanA, vanB, VanC1,VanC2/3 Isolated From Clinical Sample in Arak, Iran, Over a 12-Month Period

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**Background & Objectives:** With the increased use of vancomycin, vancomycin-resistant enterococci (VRE) has become an important nosocomial pathogen. The emergence of vancomycin resistant Enterococci (VRE) in Iran has presented serious challenges for hospital infections control in Iranian hospitals. The aim of the present study was to determine the prevalence and antimicrobial susceptibility pattern of vancomycin resistance enterococci (VRE) isolated in Arak, Iran.

**Methods:**Totally, 200 clinical samples were collected and enterococcal genus were identified using standard biochemical test such as gram reaction, catalase reaction, growth on bile-aesculin agar and 6.5% NaCl media. Antibiotic sensitivity test to routine antibiotic was performed on Muller-Hinton agar using disk diffusion (Kirby-Bauer) methods and MIC evaluated for detection of VRE, finally PCR for detection of vanA,vanB,vanC1 و vanC2/3 gene was performed.

**Results:** MICs illustrated 88 strains had MIC ≥ 32 µg/ml to vancomycin and 59 strains had MIC ≥ 32 µg/ml to ticoplanin. Molecular studies detected 59.09% of vancomycin resistant enterococci were contained vanA genes and 7.95% of vancomycin resistant enterococci were contained vanB genes. None of the strains had vanC1and vanC2/3 gene.

**Conclution:** As far as the results show, there are vancomycin-resistant enterococci in Arak like other parts of the world and most of them are vanA genes that can transmitted from this bacteria to another one. Therefore accurate Methods are required for identifying strains possessing resistance genes because many cases of hospital infections had been caused by these strains. %82 of enterococcus strains investigated in this study were isolated from urine samples that appear to be required , physician must know agents of urinary tract infection and antibiotic resistance patterns for treatment and prevention of drug resistance causing.

**Keywords:** Enterococci; Antibiotic Resistance; VRE; VanA; VanB; VanC1; VanC2/3