

Detection of Vancomycin Resistance Genes among Enterococci Species (Enterococcus faecalis and Enterococcus faecium), Isolated From Tabriz Hospitals, by Multiplex PCR

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Background & Objectives: Enterococcus species are normal flora of gastro-intestinal tract in human, but under certain circumstances they can cause infections and also, they are one of the causative agents of nosocomial infections. With regards to affluence of VanA and VanB phenotypes among vancomycin resistant enterococcus species, we have investigated phenotypic and genotypic characteristics of VanA and VanB and VanC genotypes.

Methods: In current study, cultivation and isolation of enterococcus species were carried out in madani and emam reza hospitals and central laboratory of Tabriz. We used disc diffusion Methods for antimicrobial susceptibility testing and microbroth dilution Methods for determination of MIC for screening of resistance among enterococcus species. For molecular analysis of isolates, multiplex PCR Methods has been used.

Results: A total of 196 strains of enterococcus were isolated from samples. Most of the enterococcus species were identified as Enterococcus faecalis(92.3%) and only 7.7% were detected as Enterococcus faecium. Among 196 isolated strains of enterococci, 22 were detected as vancomycin resistant and all of the VRE species were multi-resistant. Vancomycin resistant genes were detected and recognised as causative agents of antibiotic resistance in genetic and molecular studies.

Conclusion: Although our results can not accurately acclaim the prevalence rate of vancomycin resistant enterococci all over Iran, but it can be a good indicator of increase in resistant enterococci against vancomycin and other antibiotics like: gentamycin and ampicillin and aminoglycosides. These findings suggests us to act carefully while selecting and prescribing antibiotics in health-care centers and hospitals, also it suggest's adjustments on treatment Methods with antibiotics and accurate prevention enterprises.

Keywords: Enterococcus; Antibiotic Resistance; Vancomycin; Multiplex PCR