Original Paper

Molecular evaluation of *vanA* and *vanB* genes of enterococci isolates resistant to Vancomycin and Teicoplanin

Shahraki Sh (Ph.D)[1], Rabi Nezhad Mousavi M (M.Sc)*[2]
Dahmarde B (B.Sc)[3], Atashgah M (B.Sc)[4]

[1]Assistant Professor, Department of Microbiology, Infectious Disease and Tropical Medicine Research Center, Faculty of Medicine, Zahedan University of Medical Sciences, Zahedan, Iran. [2]M.Sc in Microbiology, Department of Microbiology, Infectious Disease and Tropical Medicine Research Center, Faculty of Medicine, Zahedan University of Medical Sciences, Zahedan, Iran. [3]B.Sc in Microbiology, Department of Microbiology, Faculty of Medicine, Zahedan University of Medical Science, Zahedan, Iran. [4]B.Sc in Biology, Department of Microbiology, Faculty of Medicine, Zahedan University of Medical Science, Zahedan, Iran.

Abstract

Background and Objective: Enterococci is gram positive bacteria which is the inhabitants of gastrointestinal tract. Hospital infections and antibiotic resistance to enterococci is increased. This study was done to determine the molecular evaluation of *vanA* and *vanB* genes of enterococci isolates resistant to Vancomycin and Teicoplanin.

Methods: In this descriptive study, 113 isolates samples were collected and identified according to biochemical test and cultural characteristics in Ali ibn Abi Talib hospital in Zahedan, Iran. Antibiogram test was done to determine antibiotic resistance pattern. E-test strip was used to evaluate the minimum inhibitory of concentration (MIC). PCR was used to detect the *vanA* and *vanB* genotype in Vancomycin and Teicoplanin resistance enterococci.

Results: 92%, 6.2% and 1.8% of isolated samles collocted from urine, blood culture and pleura fluid, respectively. According to phenotype, 18.6% and 17.69% were resistance to Vancomycin and Teicoplanin, respectively. Resistance was observed in strains of *Enterococcus faecalis* and *Enterococcus faecium*. *VanA* genotype was seen in all of the resistance isolated species.

Conclusion: This study showed that strains of *Enterococcus faecalis* and *Enterococcus faecium* have more antibiotic resistance to the Vancomycin and Teicoplanin, morever *vanA* genotype precence in all of resistance isolated samples.

Keywords: Enterococci, Vancomycin, Teicoplanin, Antibiotic resistance, *VanA* genotype, *VanB* genotype

*** Corresponding Author: Rabi Nezhad Moosavy M (M.Sc), E-mail: mortzamoosavy7@gmail.com**

Received 21 Feb 2016 **Revised** 6 Jun 2016 **Accepted** 18 Jun 2016

Cite this article as: Shahraki Sh, Rabi Nezhad Mousavi M, Dahmarde B, Atashgah M. [Molecular evaluation of *vanA* and *vanB* genes of enterococci isolates resistant to Vancomycin and Teicoplanin]. J Gorgan Uni Med Sci. Summer 2017; 19(2): 84-90. [Article in Persian]