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

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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 samples collected 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, moreover vanA genotype precence in all of resistance isolated samples.

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

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