Title: Prevalence of vancomycin resistant enterococci (VRE) isolated from clinical sample of hospital in Arak


Abstract: Background and objectives: Enterococcal species have emerged as important pathogens in Iran as well as throughout the world. 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 infection control practitioners as well as clinicians treating patients with enterococcal infections 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.

Material and Methods: Totally, 100 clinical samples were collected and enterococcal genus were identified using standard biochemical test such as Gram reaction, catalase reaction, presence of pyrrolidonyl arylamidase (PYR), 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 (Bauer-Kirby) method and finally MIC (minimal inhibitory concentration) evaluated for detection of VRE.

Results: From 100 samples, 22 samples were vancomycin resistance. The resistance rates of isolated bacteria to antibiotics were reported as follows: (78%) tetracycline, (2%) teicoplanin, (2%) linezolid, (26%) gentamycin, (50%) erythromycin, (16%) cotrimoxazole, (30%) ciprofloxacin. MIC<4 considered as sensitive to vancomycin, MIC between 4-24 considered as intermediate resistant to vancomycin, MIC≥32 considered as resistant to vancomycin and MIC=256 considered as highly resistant.

Conclusion: Due to the increasing rates of the VRE strains, prudent use of vancomycin in clinical setting and accurate report of VRE in clinical laboratories are important to prevent and control of VRE. Prevalence of VRE in our study was high. Considering the fact that there is no substitute agent for vancomycin in our country, it is necessary to determine guidelines regarding treatment with antibiotics specially vancomycin.

Key words: Entroccoci ,Antibiogram pattern ,Vancomycin resistance enterococci (VRE)

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