

Determination of Vancomycin Resistance Among Enterococci and Staphylococci Isolated From Patients Referred to Children Hospital

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Background & Objectives: Gram-positive cocci specially, enterococci and staphylococci are among common causes of community acquired and nosocomial infections around the world. Over the last decade, the resistance of these bacteria in hospital environments is increasing to various antibiotics such as glycopeptides. The aim of present study was to determine the vancomycin resistance among a clinical collection of enterococci and staphylococci isolated from hospitalized children in Tabriz.

Methods: Eighty eight staphylococcal and twelve enterococcal isolates were recovered from various clinical specimens sent to microbiology laboratory of Children hospital during study period (April 2011 to March 2012). Susceptibility of the isolates against vancomycin was tested by standard disk diffusion methods according to CLSI recommendations.

Results: Of 88 staphylococcal isolates, 53 and 35 were *S. aureus* and coagulase-negative staphylococci (CoNS), respectively. They were cultured from blood (70.4%), wound (6.9%), urine (5.7%) and other specimens (17%). Of 53 *S. aureus* tested, 24.6% strains were detected as being vancomycin resistant (VRSA). This rate among CoNS strains was 17.1%. Among *Enterococcus* species 73% were from urine culture, 18% from CSF culture and 9% from blood culture. Vancomycin-resistant enterococci (VRE) were isolated from 16.7% of samples. About 75%, 82% and 83% of *S. aureus*, CoNS and enterococcal isolates were vancomycin susceptible, respectively. There was a markedly higher incidence of resistance among tested bacteria in ICUs compared to general hospital wards.

Conclusion: Although vancomycin is frequently used in the treatment of staphylococcal and enterococcal infections; but the present study showed a relatively high incidence of VRSA and VRE among clinical isolates. Therefore it is necessary that clinician to be careful in the administration of vancomycin for various infections and it is indicated only against sensitive isolates.

Keywords: Enterococci; Vancomycin; Resistance