

Original Paper

Prevalence of polybacterial infection and antimicrobial susceptibility of wound samples from different wards

Ahmadi A (Ph.D)¹, Soltanpour J (MLD)², Imani Fooladi AA (Ph.D)*³

¹Assistant Professor, Applied Microbiology Research Center, Baqiyatallah University of Medical Sciences, Tehran, Iran.

²Head of Clinical and Molecular Laboratory, Baqiyatallah Hospital, Baqiyatallah University of Medical Sciences, Tehran, Iran. ³Associate Professor, Applied Microbiology Research Center, Baqiyatallah University of Medical Sciences, Tehran, Iran.

Abstract

Background and Objective: Wound infection treatment, particularly in chronic and bacterial poly cases, is difficult and entails heavy costs. This study was done to determine the prevalence of poly bacterial infection and antimicrobial susceptibility of wound samples from different wards.

Methods: In this descriptive study, wound sampling was prepared from 336 patients admitted to different wards of Baqiyatallah Hospital in Tehran, Iran. Identification was performed based on biochemical tests including oxidase test, TSI, IMVIC, lysine decarboxylase, phenylalanine deaminase, urea, motility, catalase, coagulase, mannitol fermentation, optochin sensitivity, susceptibility to bacitracin and sulfamethoxazole, growth in Bile esculin and DNase production. Antibiotic resistance pattern of isolates was determined using disk diffusion method for 14 important antibiotics.

Results: 294 samples were positive for bacterial culture, from which 364 isolates including 11 different isolates were obtained. Out of 294 positive samples, 245 samples were mono bacterial and 54 were poly bacterial including two-bacterial (45 samples), three-bacterial (7 samples), and four-bacterial (2 samples). *S. aureus* (29.7%), Enterococci (15.6%), and *E. coli* (15.6%) were the most prevalent isolates. *S. aureus*-Enterococci pattern was the most common two-bacterial pattern (33%), and majority of polybacterial patterns belonging to gram negative bacteria was in surgery ward (32.5%). Antibiogram results showed high levels of antibiotic resistance in the isolates. Imipenem and amikacin were the most effective antibiotics against Gram negative isolates, and vancomycin for Gram positive isolates. Also, 71% of *S. aureus* isolates were resistant to oxacillin.

Conclusion: Variation of bacterial isolates was similar to other studies. Most of poly-bacterial wound infections were due to common nosocomial pathogens and their high rates of antibiotic resistance are extremely alarming.

Keywords: Wound infection, Poly bacterial pattern, Antimicrobial susceptibility

* Corresponding Author: Imani Fooladi AA (Ph.D), E-mail: imanifooladi.a@gmail.com

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