

Characterization and Antibiotic susceptibility Pattern of Gram-Negative Bacteria Isolates from Bloodstream infection at Sir Takhtsinhji Hospital, Bhavnagar

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Abstract

Background: Bacterial bloodstream infections constitute a significant public health problem in recent years. Sepsis is a leading cause of mortality and morbidity in Hospitals. Earlier identification of bacterial profiles and initiation of targeted antibiotic therapy is necessary for effective management of sepsis and preventing antibiotic resistance. **Material& Methods:** This study was conducted in the Bacteriology section of the Microbiology Laboratory at Sir Takhtsinhji Hospital Bhavnagar from January 2020 to November 2020. Samples received for blood culture were processed and species level identification for isolated Gram-Negative Bacteria by standard laboratory method and processed for antibiotic susceptibility test by modified Kirby Bauer disc diffusion method according to CLSI guideline 2020. Gram-negative bacterial Isolates and their antibiotic susceptibility pattern were recorded and analyzed. **Results:** There were 3643 blood culture samples, from which 574 (15.75%) showed bacterial growth. Out of 574 positive cultures, Gram Negative Bacteria were 407 (70.90%) and Gram-Positive Bacteria were 167 (29.09%). The most common Gram-negative isolate was Escherichia coli 56.51% followed by klebsiella pneumonia 28.25%. Escherichia coli showed the highest sensitivity to amikacin gentamicin. A high degree of resistance was found to cephalosporin and levofloxacin. **Conclusion:** The results indicate a high level of prevalence of Gram-negative bacteria among bloodstream infections and emerging resistance patterns among commonly used antibiotics. This study suggests continuous monitoring of antimicrobial susceptibility patterns through antibiogram so as to treat patient promptly and to build an effective hospital antibiotic policy.

Keywords: Blood Stream Infections, Gram-negative bacteria, Antimicrobial Susceptibility pattern.