Indian Journal of Basic and Applied Medical Research; December 2015: Vol.-5, Issue- 1, P. 379-387

**Original article:**

**Antibiotic susceptibility pattern of gram negative bacilli isolated in a super-specialty hospital-Are we gradually losing the battle against superbugs?**

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**Abstract:**

**Introduction:** Multi-drug resistant Gram negative bacilli are increasingly being isolated from hospitals throughout the world. The aim of this study was to determine the antimicrobial susceptibility profile of Gram negative bacterial isolates obtained from various clinical samples of patients admitted in different ICUs and wards of a super-specialty hospital during 2014.

**Materials and Methods:** A cross-sectional study was conducted in a super-specialty hospital from January to December 2014. Various clinical specimens obtained from patients admitted in different wards and Intensive Care Units (ICUs) of this hospital were subjected to culture and sensitivity as per the requisition received from clinicians. Bacterial isolates (both Gram negative and positive respectively) obtained from these samples were identified as per standard guidelines.The antibiotic susceptibility profile of Gram negative bacterial isolates was recorded as per standard guidelines.

**Results and Discussion:** 81% of the bacterial isolates were Gram negative bacilli and only 19% were Gram positive cocci. Members of the family Enterobacteriaceae (*Escherichia coli, Klebsiella spp.* and *Proteus spp.* taken together) were the major Gram negative bacteria isolated during the study period followed by *Acinetobacter spp.* and *Pseudomonas aeruginosa*. The in-vitro susceptibility of isolates belonging to the family Enterobacteriaceae to β-lactam/β-lactamase inhibitor combinations, cephalosporins, carbapenems, fluoroquinolones, aminoglycosides, trimethoprim-sulfamethoxazole, tigecycline and nitrofurantoin was 18-47%, 32-48%, 23-51%, 35-56%, 33-46%, 31-40%, 61-71% and 56-71% respectively. While 70% of *Escherichia coli* and 75% of *Klebsiells spp*. isolates were susceptible to colistin, only 2% of *Proteus spp*. The susceptibility of *Acinetobacter baumannii* isolates to aminoglycosides, β-lactam/β-lactamase inhibitor combinations, carbapenems, cephalosporins, fluoroquinolones, trimethoprim-sulfamethoxazole, tigecycline and colistin was in the range of 27-30%, 12-15%, 31-39%, 15-21%, 23-38%, 10%, 68% and 39% respectively. The susceptibility of *P. aeruginosa* isolates to aminoglycosides, β-lactam/β-lactamase inhibitor combinations, carbapenems, cefepime, fluoroquinolones, colistin was in the range of 31-35%, 15-59%, 31-42%, 56%, 39-49% and 89% respectively.

**Conclusion:** Since the discovery of new antimicrobial agents has slowed down substantially over the last decade, we are left with limited therapeutic options. Antibiotic susceptibility pattern like the one presented in this study further adds to our woes and forces the entire medical community to think seriously about rational usage of these drugs.

**Key words:** Enterobacteriaceae, Acinetobacter baumannii, Pseudomonas aeruginosa, antibiotic susceptibility profile