Identification & Importance of Antimicrobial Susceptibility Of Non-Fermenting Gram-Negative Bacilli Among Various Clinical Specimens In A Tertiary Care Hospital

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ABSTRACT

Introduction: Non-fermenting gram-negative bacilli (NFGNB)have emerged as important healthcare-associated pathogens. NFGNBs are innately resistant to many antibiotics and are known to acquire resistance by producing extended-spectrum beta-lactamase. This makes treatment of infections caused by these pathogens both difficult and expensive. Therefore, this study is undertaken with the aim of identification of NFGNB and their antimicrobial susceptibility pattern in our hospital. **Material and Method:** A total of 3233 specimens were received in the bacteriology section of the microbiology department from September 2022 to May 2023. Clinical specimens were processed for culture according to standard operating procedures. Identification and antibiotic sensitivity testing were performed by an automated: VITEK-2 compact system.**Result:** A total of 486 (15.03%) NFGNB were isolated from 3233 clinical specimens. Out of 486 isolates, *Acinetobacter baumannii* complex was the most common non-fermenter, accounting for 238 (48.97%) isolates, followed by *Pseudomonas aeruginosa* 229 (47.12%). Other significant NFGNBs isolated were: *Stenotrophomonas maltophilia* 4 (0.82%), *Myroides* spp. 4 (0.82%) etc. Vitek 2 detected carbapenem resistance in 226 (95%) of *A. baumannii* complex and 135 (59%) of *P. aeruginosa* isolates. **Conclusion:** *A. baumannii* complex and *P. aeruginosa* were the most common NFGNB isolated from wound swabs, bronchoalveolar lavage (BAL), blood, sputum, tissue, and pus. They were found to be most resistant to quinolones, carbapenems, and aminoglycosides.

Keywords:– Non-Fermenting Gram-Negative Bacilli, Antimicrobial susceptibility, VITEK -2 **I**Class