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International Conference on CANCER BIOLOGY AND THERAPEUTICS

May 11, 2023 | Webinar

Isolation of different Non-Lactose Fermenting Gram Negative Bacilli (NLFGNB) and their antimicrobial resistant Pattern: A retrospective analysis

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The emergence of gram-negative bacilli causing infections has created untreatable problems due to increasing antibiotic resistance thus complicating cancer treatment, prolonging stay in the hospital and escalating the burden of cost on the patients. Our study of retrospective analysis was focused on the common and uncommon pathogenic isolates of non-lactose fermenter gram negative bacilli (NLFGNB) to know the prevalence of different isolates which were less (42%) in contrast to lactose fermenter gram negative bacilli (58%). All the standard microbiological methods were followed including the identification (ID) and antibiotic susceptibility testing (AST) by Vitek-2 and the analysis was for a period of two years (2019- 2020).

The isolates identified were Pseudomonas 59%, Acinetobacter 23%, Burkholderia 10%, and least isolation was of Sphingomonas 5% and proteus 3%. The most uncommon NLFGNB isolated were only two, namely Achromobacter xylosoxidans and Elizabethkingia. Antimicrobial resistance showed that more than 50% of them were MDR (Multiple Drug Resistance) (MDR is shown by at least one antimicrobial drug in three or more antimicrobial category). Even though there were two unusual bacilli isolated (Achromobacter, Elizabethkingia) they were sensitive to most of the antibiotics but 100% of Achromobacter spp. (single isolate) was resistant to gentamycin and aztreonam. Forty to fifty percent of pseudomonas spp were resistant to carbapenems, aminoglycosides, and quinolones. Thirty to forty percent of them were resistant to betalactam+betalactamase inhibitors (BL+BLI) and to also third and fourth generation cephalosporins. Acinetobacter species had 6.6% to 28% resistance to tigecycline, minocycline and colistin. In other words, around 93.4% to 72% were sensitive and can be drug of choice to treat infections caused by them.

Ninety percent of Burkholderia spp were resistant to betalactam+betalactamase inhibitors (BL+BLI) and 25% - 28% of them were resistant to carbapenems.

Ninety to hundred percent of Proteus spp. were resistant to minocycline and tigecycline. To carbapenems there was low and high resistance like 27.6% to meropenem and 77.4% to imipenem. Sphingomonas Paucimobilis showed 39.7% to 77.4% resistant to most of the panel of antibiotics used.

In conclusion, there was isolation of NLFGNBs which are multidrug resistant and complicating the treatment of cancer patients. There is a need for development of clinico-microbiological meetings and discussions to prevent the spread of antibiotic resistant NLFGNB from patient to patient and form antibiotic policies through antibiotic stewardship program (ASP).

Biography

Dr. Nilima S Desai (PhD) his working in Junior Scientific Officer in department of Cancer Biology (Microbiology, Immunohistochemistry Division) the Institution of Gujarat Cancer & Research Institute, Asarwa. Ahmedabad-16 GC&RI, Ahmedabad-16. Experience 25 years in immunohistochemistry division And 6 years in Clinical microbiology.