



# Emergence of Multidrug-Resistant Non-fermentative Gram-Negative Bacilli: A Therapeutic Menace

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Non-fermentative Gram-Negative Bacilli (NFGNB) have emerged as important healthcare-associated pathogens. This heterogeneous group comprises of bacteria which are omnipresent, and may be recovered from the hospital environment. They may be isolated from medical equipments as well as from the skin of healthcare personnel. They have a potential to cause opportunistic infections in patients with debilitating illnesses and immunocompromised status. The common non-fermenters with nosocomial capability includes *Pseudomonas aeruginosa*, *Acinetobacter calcoaceticus-Acinetobacter baumannii* (ACB) complex, *Burkholderia cepacia* complex and *Stenotrophomonas maltophilia*. NFGNB display a threat to the health care systems because of their high inclination for antibiotic resistance, innate and acquired. The burden of drug resistance is presumably due to injudicious and empirical use of antibiotics, that has enabled NFGNB emerge as nosocomial pathogens. They show acquired resistance to a vast range of antibiotics including penicillins, cephalosporins, carbapenems, aminoglycosides, tetracycline, fluoroquinolones, cotrimoxazole and polymyxins, thus challenging the therapeutic repertoire. The drug resistance genes are often carried on

mobile genetic elements, and hence can easily transmit from person to person often via the hands of healthcare workers or via fomites. The antibiotic resistance exhibited by the non-fermenters generates an alcove for these organisms that aids colonization and infection in antibiotic-treated patients. The correct identification of NFGNB becomes imperative for the appropriate management of infections caused by them. Because of taxonomic complexity and phenotypic similarity, many isolates are not satisfactorily identified by the standard conventional biochemical tests in routine microbiology laboratory, and thus automated techniques becomes the important diagnostic modalities for their accurate and rapid identification, and for ascertaining their antimicrobial susceptibility. The emergence of infections caused by the non-fermenters coupled with the escalating drug resistance among them alarms the close monitoring of antibiotic susceptibility patterns of these organisms. An effort of continuous surveillance amalgamated with the implementation of infection prevention and control practices becomes essential to wage war against these highly resistant bugs, thus curbing their burden.