LETTER TO EDITOR

Healthcare-Associated Acinetobacter Infections: An Urgent Call for Action

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DOI: 10.55489/njcm.141120233325

Keywords: Acinetobacter calcoaceticus-Acinetobacter baumannii complex, Antibiotic Resistance, Hospital Acquired Infections

ARTICLE INFO

Financial Support: None declared

Conflict of Interest: None declared

Received: 17-08-2023, **Accepted**: 09-09-2023, **Published**: 01-11-2023

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Acinetobacter calcoaceticus-Acinetobacter baumannii complex (Acb complex), is an opportunistic emerging bacterial pathogen frequently isolated from hospital-acquired infections (HAIs) that created a concern in the healthcare system. Among the species of Acb complex, *Acinetobacter baumannii* is the most common and clinically significant. Due to the rapid rise of *A. baumannii* HAIs and its extensive antimicrobial resistance to almost all antibiotic classes, serious attention is required to address this problematic issue.[1]

Acinetobacter species are ubiquitous in nature and are exclusively found in hospital settings, specifically in Intensive Care Units (ICUs). According to "The Infectious Diseases Society of America," *A. baumannii* has grown as one of the most clinically important bacterial pathogens related to HAIs ever since it started to gain clinical significance in the 1980s and showed an increased capacity for nosocomial spread. Risk factors for *A. baumannii* infections include prolonged hospitalization, advanced age, use of broad-spectrum antibiotics, colonization, immunosuppression, mechanical ventilation, invasive procedures, existence of other infections, prior dialysis etc. As a result, *A. baumannii* is known to cause a number of infections, including ventilator-associated pneumonia (VAP), surgical site infections (SSI), urinary tract infections (UTI), septic shock, meningitis, peritonitis, endocarditis, ear, and eye infections.[2] The death and disability caused by *A. baumannii* infections are rapidly increasing throughout the world. So, global organizations like European Centre for Disease Prevention and Control (ECDC), and the Center for Disease Control and Prevention (CDC) have declared it as an urgent threat to public health.[3]

There is an estimated incidence of 1 million cases of *A. baumannii* infections each year worldwide with significant mortality rates, especially in critically ill or immunocompromised patients. So, how can the infections be treated and pathogen will be targeted with high specificity? The dark clouds appeared in

How to cite this article: Datta A, Gandham N, Mirza S. Healthcare-Associated Acinetobacter Infections: An Urgent Call for Action. Natl J Community Med 2023;14(11):783-784. DOI: 10.55489/njcm.141120233325

www.njcmindia.com | pISSN09763325 | eISSN22296816 | Published by Medsci Publications

the sky of "Susceptible Drugs for Bugs". To treat *A. baumannii* infections, Carbapenems have been considered the first choice of drug for physicians, but due to the global prevalence of carbapenem-resistant *A. baumannii* (CRAB), colistin represents the main treatment option, whereas it is still uncertain what the new siderophore cephalosporin cefiderocol will do. Due to its capacity to acquire antibiotic resistance, Multidrug-Resistant (MDR) strains, extensively drug-Resistant (XDR) strains, and Pandrug-Resistant (PDR) strains have been reported worldwide. Hence, the diagnostic and clinical importance of *A. baumannii* has been raised significantly, and it was classified as one of the "Critical-Priority Pathogens" for efficient drug development on the World Health Organization's (WHO) priority list of antibiotic-resistant bacteria.[4] *A. baumannii* was also included in "The Indian Pathogen Priority List (IPPL)" on March 2021, by the Government of India in order to address the regional situation within the country for the development of new effective antibiotics that support the country's "Make in India" priorities.[5]

Healthcare-associated infections caused by this "High Priority Pathogen" needs urgent action. Therefore, the highest priority is to focus on early pathogen detection, efficient treatment plans, regular monitoring, and preventive measures. Strict infection control practices, antibiotic stewardship programs, culture surveillance, detection of carbapenemase genes, combination drug therapy, and overall awareness in healthcare staff may be helpful to resolve the problems. However, due to the extensive resistance shown by the pathogen, there is a further need for the development of new antibiotics and effective vaccines.[6] As the pathogen's zoonotic evidence has already been well documented, the molecular epidemiology of *A. baumannii* in "One Health Context" can be helpful to find out the source of infections, thus preventive measures can be taken to stop the spread of infectious.[7,8]

In conclusion, we would like to say that by considering its versatility and adaptability, *A. baumannii* is a really "tough nut to crack" but with the help of "work together" approach by clinicians, epidemiologists, microbiologists, research scientists, and healthcare workers, these hurdles can be overcome.

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