Journal of Infectious Diseases and Research
JIDR, 6(S4): 20
www.scitcentral.com
ISSN: 2688-6537

Abstract: Open Access

The Distribution of Methicillin-resistant *Staphylococcus aureus* and Carbapenem-resistant *Pseudomonas aeruginosa* in the Academic Complex Central Hospital in KwaZulu-Natal, South Africa

Rexe N[1*], Kajee A[2], Singh R[1,2] and Swe-Swe Han K[1,2]

[1]*School of Laboratory Medicine and Medical Sciences, Nelson R. Mandela School of Medicine, University of KwaZulu Natal, South Africa*

[2]*Department of Medical Microbiology, National Health Laboratory Service, Inkosi Albert Luthuli Hospital, KwaZulu Natal, South Africa.*

Published November 28, 2023

ABSTRACT

Background: Antimicrobial resistance (AMR) is estimated to be associated with over 700 000 deaths every year, a number which could rise as high as 10 million in 2050. ESKAPE (*Enterococcus faecium, Staphylococcus aureus, Klebsiella pneumoniae, Acinetobacter baumannii, Pseudomonas aeruginosa* and *Enterobacter spp*.) group of pathogens, recognized as leading contributors to the burden of AMR. Globally, Methicillin-resistant *Staphylococcus aureus* (MRSA) infections affect millions of people each year, with substantial morbidity and mortality rates. The emergence of Carbapenem-Resistant *Pseudomonas aeruginosa* (CRPA) as a global threat has been alarming, leading to increased healthcare-associated infections and limited treatment options.

Objective: This study aimed to determine the prevalence of MRSA and CRPA from January 2020 to July 2023 at an academic referral hospital in KwaZulu-Natal.

Method: A retrospective study in which samples sent to academic hospitals were examined regarding MRSA and CRPA susceptibility profiles from January 2020 to July 2023. Data from the laboratory information system were collected and statistically examined.

Results: The study found a prevalence of MRSA of 23.8% (532/2228), 18.8% (357/1891), and 16.6% (352/2120) for the years 2020, 2021, and 2022, respectively. The prevalence of CRPA was 9.6% (137/1422), 9.8% (170/1721), and 10% (178/1750) for the same years. From January 2023 to the present, 19.4% (222/1140) of MRSA cases and 6.4% (55/856) of CRPA cases have been identified. These figures suggest a decrease in the prevalence rate of MRSA, while a gradual increase in the prevalence of CRPA is observed. However, in contrast to previous years, the prevalence of MRSA in 2023 shows a significant increase, and the number of CRPA isolates continues to rise.

Conclusion: The increase in MRSA and CRPA isolates urgently calls for ongoing surveillance of these pathogens, as this is crucial for improving antimicrobial stewardship and infection prevention, control programs, and ultimately patient care.

Keywords: MRSA, CRPA, ESKAPE group, Surveillance, Antimicrobial stewardship, Infection prevention, Control

Corresponding author: Nwabisa Rexe, School of Laboratory Medicine and Medical Sciences, Nelson R. Mandela School of Medicine, University of KwaZulu Natal, South Africa, E-mail: 223151016@stu.ukzn.ac.za

Citation: Rexe N, Kajee A, Singh R & Swe-Swe Han K. (2023) The Distribution of Methicillin-resistant *Staphylococcus aureus* and Carbapenem-resistant *Pseudomonas aeruginosa* in the Academic Complex Central Hospital in KwaZulu-Natal, South Africa. J Infect Dis Res, 6(S4): 20.