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Methicillin-Resistant Staphylococcus aureus (MRSA) Bacteraemia in a Tertiary Care Hospital in Kerala

Dr Arya S Kumar,[1] Dr Radhika, Dr Zubair Mohammed, Dr Shreya H, Dr Anilkumar , Dr Dipu T S, Dr Merlin Moni, Dr Divya M V, Mr. Anandhakrishnan, Dr Georg Gutjahr

1. Department of Infection Control and Epidemiology, Amrita Institute of Medical Sciences, Kochi, Kerala, India

INTRODUCTION

Methicillin-resistant Staphylococcus aureus (MRSA) continues to be a major cause of hospital and community-acquired infections globally, contributing significantly to patient morbidity, mortality, and healthcare costs. In India, MRSA prevalence among S. aureus isolates varies by region and over time, with limited longitudinal data, particularly from Kerala.

AIM

The primary objective was to determine the prevalence of MRSA bacteraemia over a 14-year period. Secondary objectives included evaluating treatment modalities, associated risk factors, and clinical outcomes.

METHODOLOGY

This retrospective observational study was conducted at Amrita Institute of Medical Sciences, Kochi, Kerala. It included 330 patients with culture-confirmed MRSA bacteraemia between January 2010 and December 2024. Data collected included demographics, comorbidities, risk factors, treatment details, and outcomes. Statistical analysis involved Wilcoxon rank-sum and Pearson's Chi-squared tests, with data analysed using R software (v4.3.0).

RESULTS

A total of 330 MRSA was isolated from 140000 blood cultures (2.35/1000 blood cultures). Among these, 73% were male, with a median age of 51 years. Common comorbidities included diabetes (41%), hypertension (34%), and chronic kidney disease (17%), while coronary artery disease showed a significant correlation with mortality ($p = 0.008$). Community-acquired MRSA bacteraemia accounted for 59% of cases, with major risk factors such as recent hospitalization (76%), prior antibiotic use (62%), and the presence of invasive devices (86%). In contrast, hospital-acquired MRSA bacteraemia (41%) was associated with recent hospitalization (62%), prior antibiotic use (46%), and recent surgery (44%). ICU admission was needed in 42%, and 26% had ICU stays exceeding 7 days. Treatment duration ranged from 7–21 days in 56% of patients. Vancomycin (39%), Linezolid (35%), and Teicoplanin (19%) were primary definitive treatments. Microbiological cure, indicated by negative follow-up blood cultures, was achieved in 66% of patients. The overall mortality rate was 21.8%, with significant associations observed with sepsis (88%), acute kidney injury (45%), multi-organ dysfunction syndrome (46%).

CONCLUSION

This retrospective study reveals the ongoing burden of MRSA bacteraemia in a South Indian setting with a high proportion of community acquired cases, emphasizing the need of pro-active surveillance and infection control measures.