ABSTRACT

Title of Abstract : Antimicrobial Resistance Pattern of Clinical Bacterial Isolates at the East Kalimantan Provincial Health Laboratory, 2024
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Background: The increasing incidence of infections caused by antimicrobial-resistant bacteria has become a serious public health problem in Indonesia; however, data on resistance patterns in Kalimantan Timur, particularly Samarinda, remain limited.

Objective: This study aimed to describe the antimicrobial resistance patterns of clinical bacterial isolates examined at the East Kalimantan Provincial Health Laboratory in 2024.

Methods: This study employed a descriptive observational design using secondary data from culture and antibiotic susceptibility testing results of 201 clinical bacterial isolates collected from January to December 2024. Data were analyzed descriptively through tabulation and percentage distribution.

Results: Among all positive isolates (n = 201), 54.4% were Gram-negative and 45.6% were Gram-positive bacteria. The most frequently identified bacteria were Escherichia coli (24.4%), followed by Staphylococcus haemolyticus (7.0%) and Pseudomonas aeruginosa (7.0%). Susceptibility testing revealed that E. coli showed high sensitivity to meropenem (98%) and amikacin (100%), whereas Staphylococcus aureus exhibited 30.8% resistance to oxacillin, indicating the presence of methicillin-resistant S. aureus (MRSA). The predominant resistance mechanisms detected included β-lactamase production (21.7%), extended-spectrum β-lactamase (ESBL, 40.6%), and MRSA (37.7%).

Conclusion: Antimicrobial resistance based on bacterial isolates examined at the East Kalimantan Provincial Health Laboratory demonstrated a wide variation in antibiotic susceptibility patterns. These findings provide an initial overview of resistance conditions in Samarinda and can serve as a foundation for the implementation of continuous antimicrobial resistance surveillance.

Keyword : Antimicrobial resistance; Clinical bacterial isolates; Antibiotic susceptibility pattern; Samarinda