Antimicrobial Resistance in Carbapenem-Resistant *Pseudomonas aeruginosa* Infections from Tertiary Hospital Southern Thailand

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RES-310

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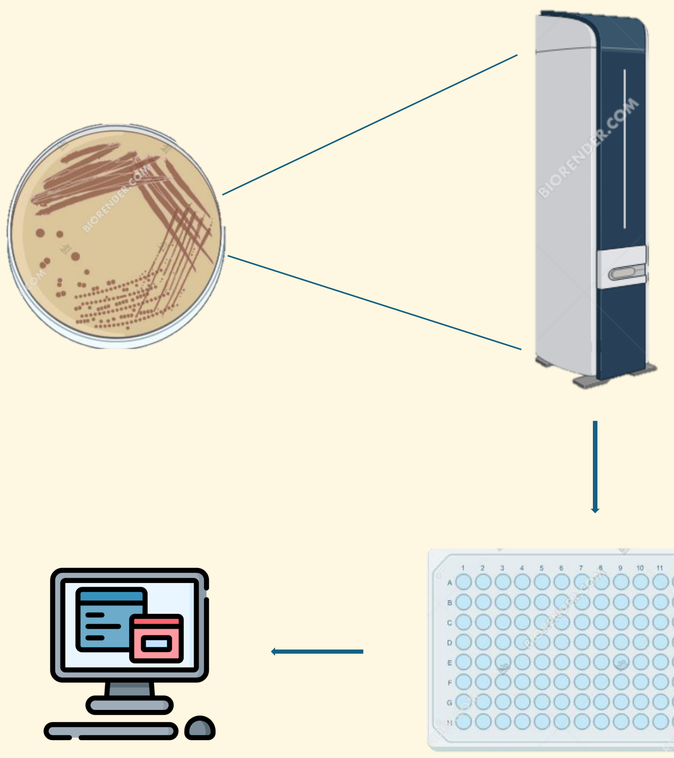
Background/Objective

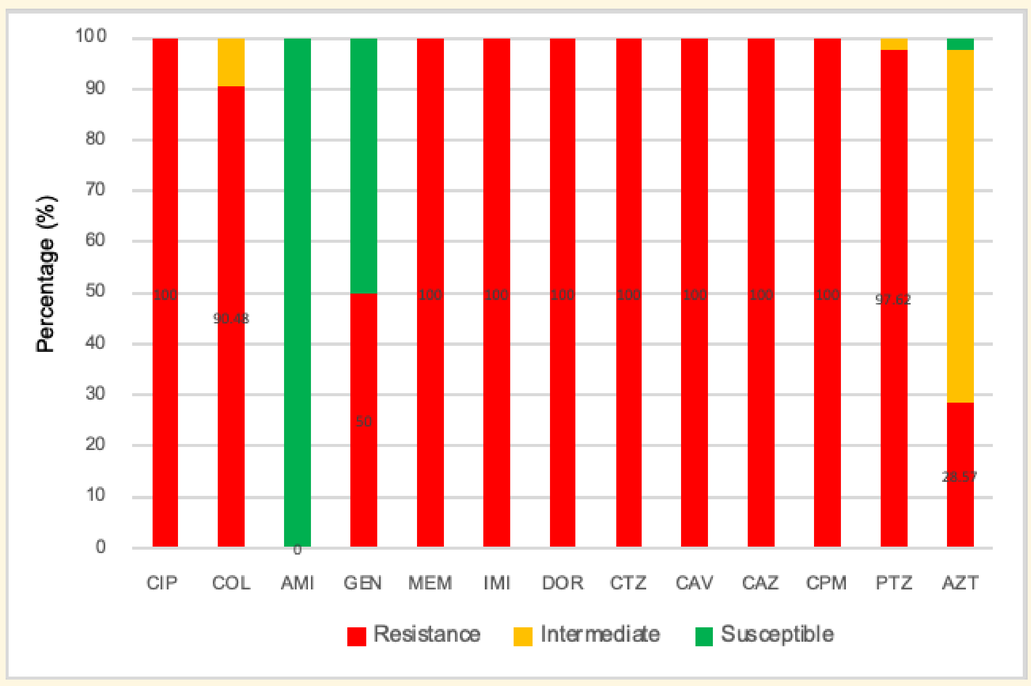
Pseudomonas aeruginosa is a critical opportunistic pathogen known for causing severe infections, particularly in immunocompromised individuals and patients with chronic diseases like cystic fibrosis. Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) is an important pathogen associated with high mortality and treatment failure rates. We aimed to assess the antimicrobial susceptibility in CRPA clinical isolates.

Methods

Isolation and Identification: Forty-two CRPA were collected from the sputum of patients who were diagnosed with ventilator-associated infections between 14 February 2021 and 10 August 2023 at Songklanagarind Hospital, Songkhla, Thailand and identified by MALDI-TOF.

Antimicrobial susceptibility testing: It was performed by the broth microdilution method. The minimum inhibitory concentration (MIC) values were interpreted as susceptible, intermediate and resistant, according to the breakpoints in Clinical and Laboratory Standards Institute (CLSI) guidelines.





Result

All strains were susceptible to amikacin, followed by 90.48% of colistin and 50% of gentamicin. On the other hand, all strains were resistant to ciprofloxacin, meropenem, imipenem, doripenem, ceftolozane-tazobactam, ceftazidime, ceftazidime-avibactam, and cefepime. Additionally, 97.62% and 28.57% of the isolates were resistant to piperacillin-tazobactam and aztreonam, respectively.

Conclusion

This study revealed higher MIC values of all β-lactams and cephalosporins for CRPA, whereas colistin and amikacin remained effective. These findings may help guide clinicians in the treatment of CRPA infections.

References

1. CLSI . Performance Standards for Antimicrobial Susceptibility Testing. 33rd ed. Clinical and Laboratory Standards Institute; Wayne, PA, USA: 2023.
2. Weinstein, R.A.; Gaynes, R.; Edwards, J.R.; National Nosocomial Infections Surveillance System. Overview of nosocomial infections caused by gram-negative bacilli. Clin. Infect. Dis. 2005, 41, 848–854.