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Prevalence of *Pseudomonas aeruginosa (P. aeruginosa)* and antimicrobial susceptibility patterns at a local hospital in Sana'a, Yemen

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Background: *Pseudomonas aeruginosa* is clinically significant and opportunistic pathogen that causes infections in hospitalized patients. Antibiotic resistance is a major concern in clinical practice. The ongoing emergence of resistant strains that cause nosocomial infections contributes substantially to the morbidity and mortality of hospitalized patients.

Objective: To estimate the prevalence of *Pseudomonas aeruginosa* and the antimicrobial resistance patterns of *P. aeruginosa* isolates from hospitalised patients in Sana'a, Yemen.

Methods: The study was performed at microbiology department of a local hospital in Sana'a, Yemen. All the patients' samples of hospital departments from January, 2017 to December, 2017 were included. A total of 2079 samples were collected during the study period. Among them, 193 strains of *Pseudomonas aeruginosa* were isolated.

Results: One hundred ninty three of *P. aeruginosa* were isolated from different clinical specimens and fully characterized by standard bacteriological procedures. Antimicrobial susceptibility pattern of each isolates was carried out by the Kirby-Bauer disk diffusion method as per CLSI guidelines. Majority of *P. aeruginosa* were isolated from sputum, followed by urine specimens. The isolate pathogen shows the highest sensitive to meropenem (85.5%), followed by amikacin (80.5%), imipenem (80.0%), and piperacillin/ tazobactam (77.2). The highest frequency of resistance (96.2%) was observed with amoxicillin /clavulinic Acid, followed by cefuroxime 94.6%, ampicillin/ sulbactam 94.5%, Co-Trimoxzole 80.5%, and norfloxacin 54%.

Conclusion: The result confirmed the occurrence of drug resistance strains of *Pseudomonas aeruginosa*. Meropenem, Imipenem, and Amikacin, were found to be the most effective antimicrobial drugs. It therefore calls for a very judicious, appropriate treatment regimens selection by the physicians to limit the further spread of antimicrobial resistance *P. aeruginosa.*

Biography

He is an Assistant Professor of Clinical Pharmacy & Therapeutics and is the Head of Pharmacy Department, Al-Razi University, Yemen.

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