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Antibiotic Resistance Status of *Pseudomonas aeruginosa* in Clinical Isolates in Ogun State

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Abstract

Pathogenic Gram-negative bacteria mostly produce extended-spectrum beta-lactamases (ESBLs), a feature that confers resistance to some newer generations of antibiotics. The study was aimed at evaluating the antibiotic resistance status of *Pseudomonas aeruginosa* isolates collected from September to November 2020 from tertiary care hospitals in Ogun State, Nigeria. One hundred fifty isolates from clinical samples (high vaginal swab, wound, urine, ear, blood) were obtained, and their susceptibility pattern was determined against eight antibiotics. Out of the 150 samples, 27 *P. aeruginosa* were identified. Anti-microbial susceptibility testing was carried

out on the isolates using the modified Kirby-Bauer disc diffusion method, and ESBL production was detected phenotypically. The mean age group of the patients was 29.56 years. Gentamicin from the aminoglycoside class showed best activity (74.1%), and ampicillin and penicillin showed little to no activity (100% and 96.3%, respectively). Cephalosporins, ceftazidime and cefuroxime were 100% resistant, while the fluoroquinolones Ciprofloxacin and Ofloxacin had a mean resistance of 40.7%. The moderate active antibiotic was streptomycin (44.4% susceptible). The poor monitoring of antibiotic usage, the abuse of their availability and the acquisition of resistance elements by organisms in hospitals and the community may be the causes of high antibiotic resistance.

Keywords

- **Antibiotic resistance**
- **Hospitals**
- ***Pseudomonas aeruginosa***

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