

Comparative analysis of antibiotic resistance patterns of *Pseudomonas aeruginosa* isolated from nosocomial infections in 2011 and 2015

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Pseudomonas aeruginosa is one of the most prevalent opportunistic pathogens associated to hospital infections. This species can resist to selective pressure of many antibiotics types because it presents wide range of resistance intrinsic mechanisms and ability to acquire antibiotic resistance via mutations or genetic horizontal transfer. Thus, the objective of this study was to analysis the antibiotic resistance patterns of *P. aeruginosa* isolated from patients admitted in public hospitals of Maceió-AL, from march to may 2011 and the same period in 2015. **Methodology:** In 2011 and 2015 were isolated and biochemically identified 53 and 21 *P. aeruginosa*, respectively. The antimicrobial susceptibility testing was performed by the method of Kirby Bauer, second the standards of Clinical & Laboratory Standards Institute (CLSI). Data analysis was performed using the chi-square test ($p \leq 5\%$). **Results:** There were significant variations in antibiotic resistance patterns of the strains isolated in distinct periods. In 2015, there was a statistically significant increase in rate of resistance to beta-lactams including cefepime (18 %), imipenem (24%), meropenem (42%) and aztreonam (11%). In contrast, there was a decrease in the frequency of resistance to fluoroquinolones (ciprofloxacin and levofloxacin), possibly due to the adoption of measures, because the resistance to this class of antibiotics was increased in 2011. Additionally, there was a decrease in the frequency of multidrug-resistant strains with simultaneous resistance to beta-lactams, aminoglycosides and quinolones (from 28.57 % in 2011 to 14.28% in 2015). There was no significant variation in the rates of resistance to aminoglycosides in 2011 and 2015. **Conclusion:** Probably, this reverse in resistance pattern's *P. aeruginosa* to beta-lactams and quinolones was due to selective pressure by the use of these antibiotics. It is essential, therefore, politics that promote the rational use of these substances in order to optimize antibiotic therapy and prevent the dissemination of resistant or multidrug-resistant strains.

Keywords: nosocomial infections, antibiotic therapy, selective pressure, resistance and multidrug resistance

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