

TITLE: RESISTANCE PROFILE OF *Pseudomonas aeruginosa* ISOLATES FROM INTENSIVE CARE UNIT IN PORTO VELHO, RONDÔNIA STATE, WESTERN BRAZILIAN AMAZON

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ABSTRACT:

Pseudomonas aeruginosa is one of the main infectious agents causing infections associated with health assistance. The aim of the study is to identify, characterize the phenotypic profile and the resistance of antimicrobial isolates collected in an intensive care unit (ICU) in Porto Velho City – RO. Collections were carried out in the ICU of João Paulo II Emergency Assistance Hospital (HPSJPII). In total, 312 samples were collected from hospitalized patients; 44 from blood samples, 47 from urine, 90 from the underarms, 28 from tracheostomies, 13 from secretions/wounds and 90 from the oral cavity. Professionals of the intensive care unit provided 70 samples; 35 from the nails and 35 from the nasal cavity. The samples were taken to the microbiology laboratory of Fiocruz-Rondônia. *P. aeruginosa* specimens were isolated from the selective and differential culture medium Cetrimide agar; subsequently, they were confirmed through 16S Ribosomal RNA sequencing. In total, 2,084 bacterial isolates were collected and 148 of them were identified as *P. aeruginosa*: 109 of them (73.6%) were isolated from the patients, 4 (2.7%) from the ICU professionals and 35 (23.6%) from the hospital structures. The resistance profile of antimicrobials such as Gentamicin, Amikacin, Imipenem, Meropenem, Cefepime, Ciprofloxacin, Levofloxacin, Norfloxacin, Piperacillin-Tazobactam, Aztreonam, Cefotaxime, Ceftriaxone, Ceftazidime, Ampicillin + Sulbactam and Ampicillin was assessed through diffusion method in Kirby & Bauer disks. In total, 30% (27/90) of the 90 patients were colonized by *P. aeruginosa* and only 5.2% (4/76) of the 76 professionals were colonized by it. With respect to the microbial resistance profile, 44% (48/109) of the isolates presented resistance to carbapenems. We have observed that 31.1% (34/109) of the isolates were resistant to 3rd generation cephalosporin and 33.0% (36/109) of them were resistant to quinolones. Based on the present study, 3.6% (4/109) of isolates were resistant to Polymyxin B. Pulsed field gel electrophoresis (PFGE) was the tool used to assess the genetic similarity profile of isolates resistant to carbapenems. There were thirteen distinct clonal clusters and 6 clonal clusters presenting similarity coefficient $\geq 85\%$. This outcome shows dissemination of multi-resistant clones.

Keywords: *Pseudomonas aeruginosa*, Multi-resistance, Genetic Similarity

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