

Title: Bacteriocin production and antibiotic sensibility patterns of *Acinetobacter baumannii-calcoaceticus* isolated from patients admitted to public hospitals: a preliminary epidemiological study

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Acinetobacter baumannii-calcoaceticus is an important opportunistic and environmental pathogen responsible for increasing number of nosocomial infections. The majority of infections have difficult treatment because many strains are resistant to a wide range of antibiotics. Relationships between genotypic and phenotypic diversities in *Acinetobacter baumannii-calcoaceticus* were evaluated in 48 clinical isolates from 47 individuals admitted to public hospitals in Maceió-AL, longitudinally during 12 months. The isolates were submitted to Kirby-Bauer method, bacteriocin typing and AP-PCR assay. Antibiotic susceptibility patterns were evaluated by Kirby-Bauer method, as described by CLSI. The bacteriocin production was detected against 15 indicator strains and the AP-PCR was performed using the arbitrary primers OPA-02 and OPA-13. The Simpson's index of diversity was used to test the discriminatory index of bacteriocin typing and AP-PCR typing. There was high frequency of strains resistant to cephalosporins (94,11%), fluoroquinolones (87,5%), carbapenems (71,79%), penicillins with the β -lactamase inhibitors (69,78%) and aminoglycosides (64%). In addition, 36 (75%) of strains presented MDR profile and resistant to 5 or more antibiotic. About 35% (17/48) of the isolates produced bacteriocin against one or more of the indicator strains and 1 strain produced broad spectrum bacteriocins active against microbial 5 species of medical interests. AP-PCR revealed 46 distinct genotypes against 13 phenotypes typed by Bacteriocin typing and no correlation was observed between inhibitory spectra of bacteriocin and genotypic similarities based on AP-PCR analyses. The discriminatory index of genotypic method (99,80%) was higher than bacteriocin typing (49,61%). According to our results, strains of the same genotype showed different bacteriocin profiles and/or distinct antibiotic susceptibility patterns, suggesting high diversity among them. No cross-infection cases was found. *Acinetobacter baumannii-calcoaceticus* isolates present high rate of resistance to major classes of antibiotics, which reduces the treatment options. The high phenotypic and genotypic diversity among isolates suggest distinct sources in hospital environment and/or overpopulation.

Keywords: nosocomial infections - multidrug-resistant - epidemiological - bacteriocin - genotypes

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