

**TITLE:** MOLECULAR OCCURRENCE OF *ACINETOBACTER BAUMANNII* BETA-LACTAM RESISTANCE ISOLATED FROM HEALTH CARE-RELATED INFECTIONS IN THE PUBLIC AND PRIVATE HOSPITALS OF MACEIÓ / AL.

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**ABSTRACT:**

*Acinetobacter baumannii* is found in Healthcare-Acquired Infections (HAIs) worldwide. According to the World Health Organization (WHO), the occurrence of HAIs caused by carbapenem resistant *A. baumannii* is considered critical. The aim of this study was to analyze the occurrence of *A. baumannii* multidrug-resistant isolates (MDR) during April to December 2018 in two public hospitals (A and B) and one private hospital (C) in Maceió/AL, and also to detect the presence of the carbapenemics resistance genes *bla*<sub>oxa-51-like</sub>, *bla*<sub>oxa-23-like</sub>, *bla*<sub>KPC</sub> and *bla*<sub>VIM</sub>, and the virulence genes *ompA* and *csuE*. The species were confirmed by mass spectrometry (MALDI-TOF). The susceptibility to meropenem and amikacin was determined by the Kirby Bauer technique (CLSI, 2018). Genes were detected by PCR using specific primers described in the literature. From 195 isolates identified with MALDI-TOF (score ≥ 2.00), 41 (21.02%) was confirmed as *Acinetobacter baumannii*, with 24 (58.53%) was from the hospital A, 6 (14.63%) from B and 11 (26.82%) from C. All (100%) isolates from hospitals A and B were resistant to meropenem, while 77.27% (n=17) from hospital A and 83.33% (n=5) from hospital B had resistance to amikacin. For the isolates from hospital C, we detected a rate of 81.81% (n = 9) and 72.72% (n = 8) of resistance to meropenem and amikacin, respectively. For hospital A we found indices of 50%, 11.1%, 5.55%, for *bla*<sub>oxa-23-like</sub>, *bla*<sub>oxa-51-like</sub> and *bla*<sub>VIM</sub>, respectively. The *bla*<sub>KPC</sub> gene was not found. In hospital B, we found the prevalence of 66.6% for the *bla*<sub>oxa-23-like</sub> and *bla*<sub>oxa-51-like</sub> genes, 16.6% for the *bla*<sub>KPC</sub> gene, and 0% for the *bla*<sub>VIM</sub> gene. The prevalence in hospital C for the *bla*<sub>oxa-23-like</sub>, *bla*<sub>oxa-51-like</sub>, *bla*<sub>VIM</sub>, and *bla*<sub>KPC</sub> genes was 54.54%, 45.45%, 9.09% and 36.36%, respectively. Regarding the virulence genes *ompA* and *csuE*, a 100% occurrence was observed in isolates from hospitals B and C, and the occurrence observed in hospital A was 94.4% for *ompA* and 50% for *csuE*. In hospital A, 1 isolate did not carry any of the genes, whereas in hospital C, 1 isolate carried all the genes. Although the incidence of isolates resistant to meropenem and amikacin was higher in public hospitals, they have a lower prevalence of the genes studied. However, the rate of resistance to meropenem presented in this study draws attention to the elaboration of control measures by the health system in the state of Alagoas.

**Keywords:** *Acinetobacter baumannii*, Multidrug-resistant, Antimicrobial, Health-care Associated Infections (HAIs).