

TITLE: BLOODSTREAM INFECTIONS DUE TO CARBAPENEM-RESISTANT
KLEBSIELLA PNEUMONIAE

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ABSTRACT:

Bloodstream infections (BSI) caused by carbapenem-resistant *Klebsiella pneumoniae* (CRKP) is a rising public health threat with a high mortality rate and become a great challenge for antimicrobial stewardship and infection control policymaking. We examined the occurrence, phenotypes and genetic features of CRKP isolated from patients with bloodstream infection at two main private hospitals in the city of Salvador, Bahia, from April 2016 to December 2018. Carbapenemase-encoding genes including *bla*GES, *bla*OXA-48-like, *bla*KPC, *bla*VIM, *bla*IMP, *bla*NDM were investigated by multiplex polymerase chain reaction (PCR) and the clonal relationships among the isolates were investigated using by pulsed-field gel electrophoresis (PFGE). Carbapenem resistance was observed in 62 (49%) of the 126 *K. pneumoniae* isolates. Majority of the resistant isolates were recovered from the patients older than 64 years of age. A total of 88 (69.8%) isolates were MDR. The *bla*KPC and *bla*NDM were identified in 45% (n=28) and 22,5% (n= 14) of the resistant isolates, respectively. The *bla*VIM, *bla*GES and *bla*OXA-48-like were detected in 34% (n=21), 14,5% (n=9) and 3% (n=2) isolates, respectively. The pulsed-field gel electrophoresis yielded 36/37 (97%) different pulsotypes. A total of nine pulsotypes were identified as clusters with two isolates in each type. Based on the similarity coefficient higher than 80%, a total of 19/37 (51%) of the isolates were not related to each other. The knowledge of the bacterial resistance profile is essential for the planning of resistant strains control and in the stimulation of the rational use of antimicrobial therapy, consequently contributing to the reduction of morbimortality rates.

Keywords: *Klebsiella pneumoniae*, carbapenemase; KPC; carbapenem resistance

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