

TITLE: DETECTION OF KPC PRODUCER BACTERIA THROUGH SURVEILLANCE CULTURES IN PATIENTS FROM A INTENSIVE CARE UNIT

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ABSTRACT:

Klebsiella pneumoniae carbapenemase (KPC) is an enzyme produced by Gram negative bacteria that confers resistance to carbapenem antimicrobials, which is a class of drugs widely used due to its broadest spectrum of activity for treatment of serious infections. Surveillance cultures are considered one of the most efficient techniques for early detection KPC infection in hospitalized patients. This study has the purpose of accomplish a screening of KPC producer bacteria through surveillance cultures isolated from patients in an Intensive Care Unit (ICU) at a hospital in Caruaru-PE. It is a cross-sectional descriptive study, carried in 2016, which specimen were obtained by using sterile swabs from nasal, rectal, axillary and hand samples. The identification of the microorganisms occurred through spectrometry masses technique (MALDI-Biotyper®) and the detection of KPC was evaluated by Modified CarbaNP and Aminophenylboronic Acid Enzyme Inhibition (AAEI). Fifty bacterial samples with *Acinetobacter baumannii* and *Klebsiella pneumoniae* were identified resulting in a prevalence of 30% from the total isolates. Others microorganisms were identified as *Enterobacter aerogenes* (16%), *Proteus mirabilis* (12%), *Escherichia coli* (6%), *Serratia rubidaea* (4%) and *Pseudomonas aeruginosa* (2%). KPC detection tests identified 44 (88%) of the samples as KPC producers bacteria, which *Klebsiella pneumoniae* was the most prevalent representing 14 (31.81%), followed by *Acinetobacter baumannii* 13 (29.54%). The high rate of KPC producer bacteria related in this study shows the importance of surveillance cultures, since their use allows the implementation of measures that limit the dissemination of multiresistant microorganisms, as well as

contribute to the reduction of the cross-transmission of resistant pathogens and potential outbreaks infectious in hospital settings. The cooperation between the microbiology laboratory and the Hospital Infection Control Commission (HICC) is fundamental by performing procedures in order to control for resistant pathogens.

Keywords: Antibacterial, Microbiology, Health Surveillance