TITLE: DETECTION OF CTX-M GROUPS IN *Providencia stuartii* ISOLATED FROM VARIOUS INFECTIONS IN A HOSPITAL LOCATED IN NORTHERN PARANÁ, BRAZIL

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ABSTRACT:

The Gram-negative bacterium *Providencia stuartii* is an opportunistic pathogen found in different environments, such as water, soils, and composes the normal intestinal microbiota of many animals. Although found in the environment, this bacterium can be considered an opportunistic pathogen that causes hospital infections. The resistance of these microorganisms to antimicrobials is of great concern, as many of these pathogens carry plasmids that confer resistance to several drugs commonly used in the treatment of infections. This way, the present study aimed to verify the presence of genes encoding extended spectrum beta-lactamases (ESBL) in 45 isolates of *P. stuartii*, of hospital origin, in Londrina-PR, in the period from 2014 to 2017. All isolates analyzed showed positive phenotype for ESBL and were analyzed for the presence of ESBL coding groups of type CTX-M 1, 2, 8, 9 and 25. For the evaluation of these genes, the polymerase chain reaction (PCR) was performed. The investigation of beta-lactamase groups by PCR revealed that all 45 isolates carry the CTX-M-2 gene and 23 of the isolates also had the CTX-M-9 gene. The other genes in the CTX-M group were not found. Antimicrobial resistance is a growing global problem. The presence of these genes in hospital isolates represents a threat to public health. The genes of the CTX-M group encode resistance to several types of antimicrobials, such as cephalosporins and penicillins, making the treatment of infections caused by these pathogens more difficult, thus requiring the use of other drugs, restricting treatment to other classes of antimicrobials. The identification of these genes also reveals another possible problem, the dissemination of these genes within the hospital environment.

Keywords: CTX-M groups; Hospital infection; Public health; Resistence

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