

HIGH PREVALENCE OF *BLA*_{CTX-M}, *BLA*_{SHV} E *BLA*_{TEM} B-LACTAMASES GENES IN *Klebsiella pneumoniae* NOSOCOMIAL STRAINS ISOLATED FROM PATIENTS IN A TERTIARY CARE HOSPITAL IN CEARÁ, BRAZIL

Barbosa, F.C.B. ¹, Rocha, F.R. ¹, Cordeiro-Moura, J. R. ², Fehlberg, L.C.C. ², Brayner, M.M.B. ¹, Gales, A.C. ², Pinto, V.P.T. ¹

¹ UFC – Universidade Federal do Ceará (Av. Comandante Maurocéllo Rocha Ponte, 100 –Derby - 62042-280 - Sobral – CE –), ² UNIFESP - Universidade Federal de São Paulo (Rua Pedro de Toledo, 781 – Vila Clementino - 04039-032 – São Paulo – SP).

Klebsiella pneumoniae is a Gram-negative bacillus responsible for a significant portion of urinary tract infections, respiratory and bloodstream of adults in hospitals, besides infections in neonates in intensive care units (ICUs). Its importance has increased due the emergence of strains producing extended spectrum beta-lactamases (ESBLs). These enzymes are produced by some Gram-negative bacilli and mediate resistance to oxyimino- β -lactams. In this pathogen, most of the identified ESBL are of the types TEM, SHV and CTX-M. In addition, β -lactamases that hydrolyze carbapenems of types KPC and GES has been frequently detected in these isolates. Hospital infection outbreaks caused by multiresistant *K. pneumoniae* have been described in various regions of the country. However, this is the first report of the genetic characterization of isolates of ESBL-producing *K. pneumoniae* in the state of Ceará. This study aimed to detect the main genes responsible for ESBL production in *K. pneumoniae* strains obtained from patients with nosocomial infection admitted to a tertiary support hospital in the northern region of the state of Ceará, from November 2013 to August 2014. Thirty-six clinical isolates of ESBL-producing *K. pneumoniae* were evaluated. The detection of genes *bla*_{CTX-M-1/2}, *bla*_{SHV}-like, *bla*_{TEM}-like, *bla*_{KPC}-like and *bla*_{GES}-like was performed by PCR. The genes *bla*_{CTX-M-1/2} and *bla*_{SHV}-like were detected in 100% of the isolates and *bla*_{TEM}-like gene in 55.6%. In addition, 55.6% of the producers of CTX-M also produced SHV and TEM. No *bla*_{GES}-like and *bla*_{KPC}-like gene was detected. Despite the high incidence of genes *bla*_{SHV}-like and *bla*_{TEM}-like, we could not tell whether they were responsible for ESBL-producing, since some variants of these families such as *bla*_{TEM-1}, *bla*_{TEM-2}, *bla*_{SHV-1} and *bla*_{SHV-11} are narrow-spectrum beta-lactamases that do not have activity against extended-spectrum cephalosporin. The detection of gene *bla*_{CTX-M-1/2} in 100% of the samples suggests that CTX-M enzyme is the major ESBL responsible for multidrug resistance phenotype of the studied isolates.

Keywords: *Klebsiella pneumoniae*, Nosocomial infection, ESBL, CTX-M.

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