

PREVALENCE AND ANTIMICROBIAL SUSCEPTIBILITY OF CARBAPENEM-RESISTANT *Enterobacteriaceae* IN PUBLIC HOSPITALS FROM FORTALEZA, CEARÁ, BRAZIL

Paulo César Pereira de Sousa, Fabiane Angélica Feitosa de Medeiros Batista, Glairta de Souza Costa, Ana Eclésia Moura Rodrigues, Antônio Jaldir Guimarães Vieira, Maria Liduína Pinto Braga, Lus Mário Silva Pereira, Evelyne S Girão, Jorge Luis Nobre, Ila Fernanda Nunes Lima

Walter Cantídio University Hospital, Federal University of Ceará, Brazilian Company of Hospital Services, Fortaleza, Ceará, Brazil

Over the past decade, Carbapenem-resistant *Enterobacteriaceae* (CRE) has become a serious public health problem worldwide, especially due to potential dissemination rates and high mortality associated with these microorganisms. Antibiotic treatment options for CRE are limited and they are usually based on a combination antibiotic therapy, including colistin and aminoglycosides. This study was conducted to evaluate the prevalence of CRE strains isolated in the microbiology laboratory of a public hospital from Fortaleza, Ceará, Brazil, in addition to investigate the percentage of colistin and aminoglycosides-non susceptible isolates. CRE strains were isolated using specific media agar plates and standard microbiological techniques. Biochemical and antimicrobial susceptibility tests were performed using Vitek® 2 Compact System (BioMérieux, France) and Kirby-Bauer disk diffusion method. From January to May 2015, 4428 clinical samples were sent from hospitalized and outpatient department patients for microbiological testing. The positivity rate was 18.88% (836/4428), with a CRE prevalence of 16.99% (142/836). More than 90% (129/142) of CRE isolates were *Klebsiella pneumoniae*. The majority of the isolates were detected in rectal swabs (47.89%, 68/142), followed by urine samples (24.65%, 35/142). Although most of the CRE isolates have been identified in patients from the intensive care unit (39.44%, 56/142), a significant number of them was also detected from the patients submitted to kidney or liver transplants (19.72%, 28/142), hospitalized or outpatients post-surgery. About 20.42% (29/142) of CRE isolates were colistin-resistant, while 21.83% (31/142) and 38.73% (55/142) were non-susceptible to amikacin and gentamicin, respectively. These data show an elevated rate of CRE among patients from the studied hospitals. A significant proportion of these isolates were resistant to some of the few therapeutic options commercially available for the treatment of the infections caused by them, which emphasizes the urgent need for CRE control at the hospital and community levels, and the rational use of antibiotics.

Keywords: Carbapenem-resistant *Enterobacteriaceae*, prevalence, antimicrobial susceptibility