Título: KPC-producing Pseudomonas aeruginosa in two Brazilian states.

.

AUTORES: SANTOS, I. C. O. [1], AGUIAR, T. F.[1], TAVARES, C. B.[1], TAVARES, C. B.[1], LIMA, E. F. C.[1], ASENSI, M. D.[1], CARVALHO-ASSEF, A. P. D.[1]

Instituição: [1] IOC – FIOCRUZ. Instituto Oswaldo Cruz, Fundação Oswaldo Cruz (Av. Brasil No. 4365, Manguinhos - Rio de Janeiro, RJ – Brasil).

Resumo:

Carbapenemase production is an important mechanism of resistance in the world, compromising the therapy by the use beta-lactam. The KPC-type is one of the most widespread carbapenemases, mainly in Enterobacteriaceae. This gene is present in mobile genetic elements that are responsible for its spread among different genera and species associated to healthcare-associated infections. Here we report four KPC-producing *Pseudomonas aeruginosa* isolates from two Brazilian states (3 isolates from Minas Gerais and 1 from Goiás). The antibiotic susceptibility was determined by disc diffusion method as recommended by CLSI 2015. Carbapenemases were detected by hydrolysis of imipenem (CARBA-NP) and PCR to SPM, NDM, IMP, VIM, GES, KPC and OXA-48. The genetic diversity was investigated by PFGE and analysis by BioNumerics. The isolates were recovered in November/2014 from 3 patients with advanced age (>57). From one patient, the isolates were obtained from blood and surgical piece. The other isolates were recovered from tracheal secretion and bronchoalveolar lavage. All isolates were non-susceptible to all beta-lactam tested but showed susceptibility to aminoglycosides (gentamicin and amikacin), levofloxacin and polymyxins. The CARBA-NP test was positive with or without the presence of EDTA and gene bla_{KPC} was detected in all isolates. By PFGE, the isolates belonged to three different clones. The two isolates from the same patient showed different restriction profile. The isolate recovered from blood of this patient belonged to the same clone found in the isolate from the other patient from Minas Gerais. Our study draws attention to spread of bla_{KPC} for different bacterial genera probably by plasmid dissemination. Plasmid outbreaks have been reported and are a problem in disseminating resistance. The first description of bla_{KPC} in *P. aeruginosa* in Brazil was in Recife, in 2012. This work showed the presence this mechanism of resistance in *P. aeruginosa* in other two Brazilian states (Goiás and Minas Gerais), warning of the possible increase in detection of this gene in *P. aeruginosa* in Brazil.

Palavras-chaves: Pseudomonas aeruginosa, KPC, carbapenemases.

Agência de fomento: CAPES, CNPq, FAPERJ.