

TITLE: DETECTION OF OXACILINASES IN GRAM-NEGATIVE BACTERIA ISOLATED FROM PATIENTS WITH PNEUMONIA IN ICUs IN SÃO LUÍS - MA.

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Pneumonia is characterized as an acute and multifactorial respiratory disease, which affects the lung parenchyma and develops inflammation of infectious cause. Some characteristics are progressive infiltrates, fever and leukocyte alterations, characterizing signs of systemic infection. Resistance to antimicrobials is a serious problem, especially in multiresistant bacterial infections, due to its pathogenesis and the presence of resistance-encoding genes. As an example, there are oxacillinases, or Class D beta-lactamases, which are carbapenemases diffused in some Gram-negative species, for example *Acinetobacter baumannii*. Oxacillinase is denominated due to its high hydrolytic activity against oxacillin, cloxacillin and methicillin. The aim of this study is to detect the *bla_{oxa}* gene by molecular methods in Gram-negative bacteria isolated from patients with pneumonia, as well as to determine its antimicrobial susceptibility profile. This work was approved by the Research Ethics Committee of UniCEUMA - protocol 766.690/2014. The study was carried out using tracheal secretion samples from patients hospitalized in the ITU of public and private hospitals in São Luís. Standards culture media, such as blood and MacConkey agar, were used to isolate clinical strains. Automatized Vitek 2 method was used to identification of strains and disc diffusion method (Kirby-Bauer) was performed to determine the antimicrobial susceptibility profile, according to *Clinical and Laboratory Standards Institute*. For the detection of gene, the DNA of the isolates was obtained and used for PCR. Among the 95 Gram-negative analyzed, the most frequent were: *Acinetobacter baumannii* (n=36 / 35%), *Pseudomonas aeruginosa* (n=30 / 29%), *Klebsiella pneumonia*, *Serratia marcescens* and *Proteus* spp. (n=6 / 6%). Regarding the antimicrobial resistance profile, a higher percentage was observed for ampicillin, cephalosporins, ceftazidime and ceftriaxone, ciprofloxacin and piperacilicline / tazobactam. The *bla_{oxa}* gene was detected in isolates of *A. baumannii* and *P. aeruginosa*. *bla_{oxa-51}* variant was present in 36 strains (37.89%) of *A. baumannii*, and *bla_{oxa-23}* was detected in 15 (15,79%). Among *P. aeruginosa* isolates, six isolates harbored *oxa* variants, of which four were positive for *bla_{oxa-51}*, one positive for *bla_{oxa-23}* and one for both variants. The positivity for *bla_{oxa}* was relatively low, therefore, it can be concluded that there is an association of resistance to antimicrobials also to other genes, requiring attention due to the commitment of antibiotic therapy for pneumonia.

Keywords: bacterial pneumonia, molecular diagnosis, antibiotic therapy.

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