

Title: CHARACTERIZATION OF *KLEBSIELLA PNEUMONIAE* FROM TERTIARY PUBLIC HOSPITAL OF CAMPO GRANDE – MS, THROUGH PHENOTYPIC TEST AND RESEARCH GENE *BLA_{KPC}* PRESENCE

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Abstract:

The emergence of multi-resistant bacteria has become a major public health problem. Different antimicrobial resistance mechanisms and the production of carbapenemases enzymes have been described and the most common is *Klebsiella pneumoniae carbapenemase* (KPC). The aim of this study was to evaluate the production of *Klebsiella pneumoniae* carbapenemase in *Klebsiella pneumoniae* (Kpne) isolated from patients treated in three hospitals of Mato Grosso do Sul, Brazil. Were included samples of isolated Kpne of three public hospitals: Associação Beneficente de Campo Grande (ABCG); Hospital Regional de Mato Grosso do Sul "Rosa Pedrossian" (HRMS); Hospital Universitário "Maria Aparecida Pedrossian" of the Federal University of Mato Grosso do Sul (HUMAP), from March 2013 to March 2014. The identification of microorganisms was carried out in microbiology laboratories of hospitals involved and antimicrobial susceptibility held at the Research Laboratory Microbiological-UFMS by disk diffusion method. Phenotypic detection carbapenemase was evaluated by Hodge Modified Test (MHT) and detection of the gene *bla_{KPC}* performed by Polymerase Chain Reaction (PCR). 497 samples of Kpne, not sensitive to carbapenems, were studied. Comparing the results of THM with PCR, we observed a higher positivity in the PCR with HRMS samples (92.03% / 94.93%) and HUMAP (87.30% / 95.24%). Already in samples of ABCG, there was a higher positivity in THM (94.93% / 84.12%) respectively, a fact possibly due to the presence of other enzymes such as extended-spectrum β -lactamases (sample ES β L) combined with loss of porin. Several antimicrobial resistance classes were observed, confirming previous studies that claim that producers carbapenemases microorganisms often lead to other resistance genes. Clinical specimens of greater isolation were urine (30.41% ABCG; 47.83% HRMS; 52.38% HUMAP) and tracheal aspirate (7.09%; 10.8%; 26.98%) respectively. The majority (34.12% ABCG; 26.09% HRMS; HUMAP 44.45%) patients were hospitalized in the Intensive Care Unit (ICU) and were aged above 60 years (40.54%, 56.52%; 58.73%), corroborating the literature that refer elderly patients admitted to the ICU are more susceptible to infections by multidrug-resistant bacteria. We conclude that the gene *bla_{KPC}* is present in *K. pneumoniae* isolated in different hospitals in the state of Mato Grosso do Sul reinforcing the need for preventive measures to control this important pathogen in the hospital setting.

Keywords: *Klebsiella pneumoniae* carbapenemase, Campo Grande – MS, Antimicrobial resistance

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