

TITLE: *Enterobacter* spp. PRODUCING Metallo- β -Lactamase IMP-1 ISOLATED FROM PATIENTS SUBMITTED TO HEMODIALYSIS

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Enterobacter spp is one of the members of Enterobacteriaceae family. This bacterial genus has been recognized as important opportunistic pathogens associated to a wide range of infections in critical patients admitted to hospitals around the globe. An increase of carbapenems resistance by *Enterobacter* spp, mediated by the production of carbapenemases, has been reported in the last decade. Carbapenemases of the Ambler's class B (Metallo- β -lactamases - M β L) have been recently recognized in *Enterobacteriaceae* worldwide. Infections by strains producing M β L characterize a serious public health problem, since it limits therapeutic options and result in increase on mortality rates. In patients with critical health status such as those undergoing hemodialysis, sepsis by resistant microorganisms is a major cause of mortality. Hereby, we report the isolation of *Enterobacter* spp resistant to carbapenems from six patients undergoing hemodialysis that presented bacteremia, in the period between January and February, 2018. All these cases occurred at a tertiary hospital in São José do Rio Preto, São Paulo, Brazil. The identification and the antimicrobial sensitivity test were performed by an automated system. The MIC of meropenem and imipenem were determined by broth microdilution. Identification of resistance genes by PCR, molecular typing by PFGE and sequencing were performed according to previously standardized protocols. The BioNumerics software was used for dendrogram construction and analysis of genetic similarity. All DNA sequences were analyzed by using the Accelrys software. All the six isolates presented similarity coefficient above 90% and were considered as genetically related. The IMP-1 gene was identified in all isolates, that also showed MIC > 32 μ g/mL for meropenem and imipenem. The genetic similarity among these isolates indicates the occurrence of an outbreak by IMP-1 producing *Enterobacter* spp in the hemodialysis unit. Further investigation will be performed to genetic environment of the *bla*_{IMP-1} genes and to reach species identification. The detection of IMP-1 producing *Enterobacter* spp in this institution raises the concern about the epidemic potential and clinical importance of IMP-1-producing *Enterobacter* spp for hospital acquired infections.

Keywords: *Enterobacter* spp; Resistance; Metallo- β -Lactamase; Genetic Similarity