

**TITLE:** INCREASE IN MORTALITY DUE TO CARBAPENEM-RESISTANT *Klebsiella pneumoniae* AND ASSOCIATION WITH COMORBIDITIES - META-ANALYSIS

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**ABSTRACT:**

In the last decade, carbapenem-resistant *Klebsiella pneumoniae* (CRKP) has spread around the world and, therefore, has become a public health problem, due to limited therapeutic options and high morbidity and mortality. Research points to an association among comorbidities and mortality in CRKP-infected patients. This is a systematic review and meta-analysis with data search in PubMed and SciELO. For data extraction, ten studies were selected, six of the cohort type and four of the case-control type. The proportion test was performed, considering the mixed generalized linear model (GLMM), determining the proportion of mortality of patients with CRKP associated with comorbidities. The relative risk of mortality was also assessed, comparing patients with CRKP with patients with CSKP. A 5% threshold for significance was considered. Statistical analyzes were performed using RStudio® 4.0.2 and RevMan® 5.3 softwares. *Klebsiella Pneumoniae* (KP) associated with chronic kidney disease accounted for 26% of 258 deaths, when associated with chronic lung disease it accounted for 28% of 169, Diabetes and KP 31% of 185, liver disease and KP 15% of 262 and heart disease associated with KP 51% of 262 deaths. For CRKP-associated chronic kidney disease 49% of 83 deaths, diabetes with CRKP 29% of 73, liver disease with CRKP 33% of 73 deaths. The risk of deaths from CRKP is twice the number of deaths from CSKP, RR = 2.07 [CI95% = 1.39 to 3.09; I<sup>2</sup> = 83%; p<0.00001]. The present research demonstrated an increase in CRKP mortality when associated with comorbidities.

**Keywords:** Mortality, *Klebsiella pneumoniae*, Carbapenems

**Development Agency:** No development agency