

## RESISTANCE PROFILE OF INFECTIONS CAUSED BY *KLEBSIELLA PNEUMONIAE* IN THE INTENSIVE CARE UNIT IN PARANÁ SOUTHWEST HOSPITAL

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### **Abstract**

Hospital environment exposes patients to a variety of pathogenic bacteria, especially in Intensive Care Units (ICU), where often occur outbreaks with high mortality rates. Among the main causes of infection in ICU it can be mentioned the *Klebsiella pneumoniae*. Therefore, the present study aimed to survey the number of cases of infections caused by *K. pneumoniae* in neonatal ICUs and adults in a hospital of Paraná's Southwestern region. Right after the approval by the Ethics Committee (CAAE 33192114.8.0000.0109) there were raised all cases of infection with *K. pneumoniae* in adult and neonatal ICUs period from 2012-2014, as well as the presence of antimicrobial resistance (ESBL and KPC). There were 13 cases of infection with *K. pneumoniae* in neonatal ICU (11.9% of all infections in the period in this unit) and 21 in the adult (7.3%). In Ponta Grossa, Paraná, there were 8.9% of cases of infection with *K. pneumoniae* in 2007 in the adult ICU, against 10.1% in neonatal, numbers close to those observed in this study. In Fortaleza, Ceará, the highest resistance rates were in ICUs, with 57.4% of *K. pneumoniae* ESBL and KPC 18.9%. It was also observed in the present study 47.1% of ESBL isolates and 23.5% KPC. Carbapenemase cases were only observed in the adult ICU, probably because this population has already been exposed to antibiotics in the past. A systematic review showed that isolation rates of the BGN in ICUs in Brazil ranged from 9 to 12%. In northeastern Brazil, the *K. pneumoniae* emerged as the most prevalent ESBL-producing enterobacteria (50.4%). In these cases carbapenems are the most commonly used antibiotics to treat these infections. However, this BGN was identified as the enterobacter with the higher rates of ESBL in health services in the last 30 years and may play the same role regarded to carbapenemases. This bacteria also had the highest rates of resistance to carbapenems in Santa Maria, RS. The resistance profile of *K. pneumoniae* observed in the hospital studied is similar to that ones found in other regions of the state and in the world. The identification of these cases and the appropriate use of antimicrobial becomes one of the main tools to combat outbreaks, as well as an active surveillance of Infection Control Centers.

**Keywords:** Beta-Lactamase Extended Spectrum, Carbapenemase, *Klebsiella pneumoniae*, Intensive Care Unit.