

TITLE: OCCURRENCE OF *Pseudomonas aeruginosa* RESISTANT TO CARBAPENEMS AND COLISTIN IN A PUBLIC HOSPITAL OF RECIFE

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ABSTRACT:

Clinical isolates of multidrug resistant *Pseudomonas aeruginosa* (MDR) have been reported worldwide, including in Brazil and resistance to carbapenems and colistin is of particular concern. The objective of this study was to evaluate the occurrence of clinical isolates of *P. aeruginosa* resistant to carbapenems and colistin from patients of a public hospital in Recife. Databases of clinical samples (tracheal secretion, blood, urine, soft tissues, surgical wounds) from distinct sectors (ICU, nursery, recovery room, outpatient clinic, isolation sector), collected from different origins of infection, were analyzed. The susceptibility to carbapenems and colistin was determined by the automated method (Vitek®2, bioMérieux) and interpreted according to CLSI 2018. Of the 95 isolates studied, 39 refer to the year 2015 (59% resistant to carbapenems and 15% to colistin) and 56 to 2016 (39% resistant to carbapenems and 21% to colistin). Thus, we observed a 6% increase in the number of isolates resistant to colistin in this period. Most of the resistant isolates studied were related to ICU patients. Regarding to these isolates, in 2015, 83.4% presented resistance to carbapenems while 16.6% were resistant to colistin. In 2016, 94% of the isolates were resistant to carbapenems and 16% were resistant to colistin. Among the resistant samples, the highest number was observed in cultures of tracheal secretion (n = 34/70). Of these samples, in 2015, 26.4% presented resistance to carbapenems and 3% were resistant to colistin. In 2016, it was possible to observe an increase in isolates resistant to carbapenems (55.8%) and colistin (14.7%). In general, we observed that the highest number of cases of *P. aeruginosa* infections with resistance to carbapenems and colistin was associated with the respiratory tract of ICU patients. Moreover, the results showed a tendency to increase the number of these cases, indicating the importance of surveillance and control of antimicrobial use, specially in patients with this profile.

Keywords: Hospital infection, ICU patients, multidrug resistance, polymyxin

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