Multi-hospital point-prevalence survey of health care-associated infections in critical adults in State Minas Gerais

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Abstract

Healthcare-associated infections (HCAIs) represent a real public health problem in developing countries which harbour social inequalities and variations in the complexity of healthcare. In the study, we describe the results of a point prevalence survey conducted in 2016, in adult intensive care units (ICU) of hospitals with differents sizes in the state of Minas Gerais. A one-day point-prevalence survey in 2016 enrolled 28 (84.8%) ICU of hospitals from the twelve mesoregions located in the state of minas gerais, Brazil. hospitals were classified as university hospital with > 400 beds, university hospital with 201-400 beds, university hospital with < 200 leitos, non-university hospital with 201-400 beds and non-university hospital with ≤ 200 beds. HCAIs were defined according to ANVISA. Trained nurses visited each ICU and collected data on HCAIs, antimicrobial use and invasive procedures. univariate method were used for data analysis**.** In total, the hospitals had 371 beds of ICU, of which 303 were occupied at the time of the study. The overall HCAI prevalence was 51.2% (155/303 patients) and the infection rate acquired in the ICU was 79.4%. Of the 188 infected patients, including those with a community infection, 217 episodes were observed, of which 118 presented microbiological criteria, mainly in university

hospitals (71.7%). Most frequent infection sites were lung (53.0%) and blood (27.6%). 147 bacterial isolates were cultured from HCAIs, most frequently non fermenters gram negative, mainly Pseudomonas aeruginosa (20/76 Gram-negative [26.3%]), Acinetobacter baumannii (18/76 [23.7%]) folowed by Staphylococcus aureus (25/61 Gram-positive [41.0%]). The strongest risk factors for HCAI acquired in ICU were use invasive devices, mainly central venous catheter and intubation; exposure to antibiotics and empirical antimicrobial therapy. **A** high prevalence of HAIs was observed, mainly caused by non-fermenting Gram-negative bacteria associated with pneumonia. This in combination with a high rate of antimicrobial use illustrates the urgent need HCAIs must be a priority in the public health agenda of Brazil.

Key words: healthcare-associated infections, ICU, epidemiology, prevalence survey, Brazil