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**Infection control interventional trials**

### **Carbapenem-resistant *Acinetobacter* sp. outbreak in an adult intensive care unit in South Brazil: the importance of surveillance and cleaning technics**

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**Background:** In the last three decades, *Acinetobacter* sp emerged as a relevant pathogen in health-care associated infections (HAIs), specially in critical ill patients. Resistant strains of *Acinetobacter* usually have endemic behavior and great capacity of causing outbreaks due to the ability to persist in wet and dry environments. Hand and environmental hygiene are described as key strategies for the control and prevention of this kind of outbreak. In our city *Acinetobacter* sp is endemic, but not in our institution. From October 1<sup>st</sup> to November 17 2015, we pass through an outbreak of carbapenem-resistant *Acinetobacter* sp in our adult intensive care unit (ICU).

**Material/methods:** After the identification of carbapenem-resistant *Acinetobacter* sp in clinical culture (sputum) of a patient admitted to the adult ICU (index case), all patients undergoing ICU admission performed weekly surveillance cultures for *Acinetobacter* sp research (frontal, inguinal and oral swabs). We also performed environment and medical equipment microbiological analysis using a pre-hydrated sponge with sterile 0.9% saline.

**Results:** We collect surveillance samples from 196 patients from October 6 to November 17. We identified 11 patients colonized by carbapenem-resistant *Acinetobacter* sp, (9 patients identified in October and 2 patients in November). Moreover 3 patients had a new infection caused by carbapenem-resistant *Acinetobacter* sp. All patients colonized/infected were kept in contact isolation in a specific area of the ICU, with cohort of healthcare workers and medical equipment. Environment microbiological analysis showed growth of carbapenem-resistant *Acinetobacter* sp. in ultrasound device and cap of BIPAP. These findings showed that medical and physiotherapy equipments had flaws in hygiene routines. On-site training sessions were conducted with nursing and physiotherapy teams, responsible for the cleaning of the equipments. We reinforced environment hygiene technic with the cleaning staff and also the importance of the practice of hand hygiene in the five moments recommended by the World Health Organization (WHO). After all actions, only one new case of colonization with carbapenem-resistant *Acinetobacter* sp was identified until November 27.

**Conclusions:** The early identification of colonized patients, intensified cleaning of the environment and equipment and high rates of hand hygiene compliance are mandatory to control cross transmission of *Acinetobacter* sp and stop the outbreak.

# Hand Hygiene Compliance and Incidence of Acinetobacter sp in 2015 - Adult ICU

