

**TITLE:** DISTRIBUTION OF *ACINETOBACTER* SPECIES IN AMBIENTS OF A FEDERAL HOSPITAL OF RIO DE JANEIRO.

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**ABSTRACT:**

The influence of air and surfaces in the propagation of pathogenic agents in hospitals has been underestimated. *Acinetobacter baumannii* is an emergent pathogen found in hospital environment. In this study, 6 biweekly collections of air samples (n=60) and surfaces (n=186) in the Intensive Care Unit (ICU), in the post-operative care unit (OCU) and in the lobbies of the Hospital Federal dos Servidores do Estado do Rio de Janeiro, RJ, between January and February 2016. We emphasize that the OCU had been through a drastic cleaning after structural reform before this study. The air collection was made using a one stage Andersen Sampler placed at least 2 meters of the patient's bed. For the surface samples the swab technique was used. The growth mediums used were the Tryptic Soy Agar (TSA) and the MacConkey Agar. The isolated cultures were screened by Triple Sugar Iron agar and oxidase proof. The identification of the cultures was performed by MALDI-TOF technique (Mass Spectrometry for Microorganism Identification-Time of Flight). 42 cultures of *Acinetobacter baumannii* (air = 17 and surfaces = 25) were isolated. The highest incidences of *Acinetobacter* from air occurred in the ICU lobby (n=8), followed by the nursing pre-station (n=5). The highest incidences in surfaces occurred in the OCU's shelves and Mayo's tables (n=7). Among the identified species are *Acinetobacter baumannii* (Surfaces: shelf of the bed 5; breathers of the beds 11 and 17 of the OCU; table of the prescription room; tables of the beds 4 and 5; medication cart. Air: OCU's bed 18; nursing pre-station. Air: building hall; ICU hall) and the *Acinetobacter nosocomialis* (Surface: breather of the OCU's bed 15), *Acinetobacter pittii* (Air: nursing post-station, bed 13 from the OCU). We highlight that these strains were isolated in the OCU even though the area was not habited yet. The increase of the *A. baumannii* incidence in this OCU was noticed in subsequent collections. Continuing this study, the cultures will be subjected to antimicrobial sensibility test (AST) and their identifications will be made by PCR technique (Polymerase Chain Reaction); the results will be compared between each other and with the patient's molecular strains profiles to establish the distribution route. Until the moment, this study conclusion is that unanimated surfaces can harbor bacteria of the *Acinetobacter* genus, and that the air can be a dissemination factor to these microorganisms.

**Keywords:** Air, surface, *Acinetobacter*, nosocomial environment, MALDI-TOF.

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