

TITLE: AERIAL CONTAMINATION BY FILAMENTOUS FUNGI IN CRITICAL HOSPITAL AREAS

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ABSTRACT:

Fungi are ubiquitous microorganisms that can easily be dispersed through the air. In critical hospital areas such as intensive care units (ICUs) and surgical center, air can favor the spread of fungal infections, compromising mainly immunocompromised patients and those with serious diseases. Therefore, the objective of this study was to analyze the fungal contamination of indoor air conditioning in critical hospital areas, verifying the occurrence of possibly pathogenic species. Air collections in ICUs and surgical centers were performed in four private hospitals, one belonging to the state of Pernambuco and three in Alagoas. After the growth, isolation and purification of the colonies, the fungal isolates were identified through morphological analysis of macroscopic and microscopic structures, using identification key.. After the analysis, 11 fungal species were identified: *Acremonium alabamensi*, *Aspergillus flavus*, *Cladosporium cladosporioides*, *Paecilomyces variotii*, *Aspergillus alliaceus*, *Aspergillus tamarrii*, *Aspergillus versicolor*, *Paecilomyces viridis*, *Fusarium oxysporum*, *Aspergillus candidus*, *Aspergillus fumigatus*. Species of *Aspergillus* and *C. cladosporioides* were the most prevalent in the analyzed rooms, which has already been observed in air quality analyzes in some Brazilian hospitals. Some of the identified species are known for their potential to produce mycotoxins and allergens, which represents health risks for those that are present in the analyzed environments, especially those that are more susceptible. Considering the increase in nosocomial infections caused by fungi, the monitoring of these microorganisms in critical areas can help by providing epidemiological data that will be of importance for the elaboration of better strategies to infection control. In critical areas of four private hospitals, indoor air contamination was verified by a considerable fungal diversity, with prevalence of *Aspergillus* and *C. cladosporioides* species.

Keywords: Airborne fungi, indoor air quality, ICU, nosocomial infection, surgical center

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