

## ZYGOMYCETES PRESENT IN THE AIR OF TERTIARY HOSPITAL UNITS IN THE CITY OF FORTALEZA-CE

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### ABSTRACT

Zygomycetes are filamentous fungi that have cenocytic hyphae and are characterized by producing sex spores called zygospores. Some species of this group can cause opportunistic diseases in humans, like gastrointestinal, cutaneous and respiratory diseases. In addition, it can be present in various environment, being one of them of great relevance, the hospital environment. The disease transmission occurs by spores' inhalation in the air and can affect people with weakened immune systems. In this context, the present study monitored the presence of Zygomycetes present in the air in two units of a tertiary hospital in the city of Fortaleza-Ce. The collection of samples occurred during the months of October of 2016 and March of 2017 and the passive sedimentation method was adopted in 150 mm diameter Petri dishes containing Agar Potato Dextrose (Himedia®) culture medium. The Petri dishes were organized 1,5 meters above the ground, for 12 hours. Subsequently, the Petri dishes with the biological samples were sealed and sent to the Laboratory of Microbiology - LAMIC of the Biological Sciences Course of the State University of Ceará - UECE. Arriving to LAMIC/UECE, the Petri dishes were incubated in the temperature of 25 – 27 °C for seven days, making daily observations. From the appearance of fungal colonies, they were counted and identified based on the macro and micro morphologic aspects. The global count was 4,097 UFC.m<sup>-3</sup> in hospital A and 3,492 UFC.m<sup>-3</sup> in hospital B, within which varied fungal colonies were found. Facing the diversity of Zygomycetes, the genera found was *Mucor sp.* (83,33%), *Rhizopus sp.* (50%), *Cunninghamella sp.* (16,66%), e *Mortierella sp.* (16,66%) in hospital A, while in hospital B were *Mucor sp.* (83,33%) e *Rhizopus sp.* (16,66%). Therewith, it was observed that *Mucor sp.* was the most frequent in both hospitals. In humans, the genera *Mucor* is considered a pathogen causing allergies, allergic rhinitis, asthma, and hypersensitivity pneumonitis. From this, it is concluded that there is a need to monitor the air of these sites to know the fungal diversity and the possible pathogenic genera that are present in the air of these units, since these fungi, especially Zygomycetes, can cause illness and be agents of hospital infections.

Keywords: fungi, air quality, hospital infections.

Development Agency: UECE Microbiology Laboratory - LAMIC