

PATHOGENIC FUNGI AND THE AIR QUALITY OF ACCLIMATIZED ENVIRONMENTS OF HOSPITALS OF ALAGOAS

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Abstract:

Nowadays people live about 80% of the time in acclimatized environments. The air of these places can cause aggravates to health if the maintenance of refrigerating systems are precarious or negligent as demonstrated by scientific data and OMS. The quality of the acclimatized air of public and common use is regulated by the Ordinance 3.523/MS and the RE N^o9 ANVISA/2003 according to the quality parameters aiming to avoiding health aggravates. The acclimatized air of health institutions has chemical compounds, physical and biological changes that pose health risks to professionals and patient recovery. The objective of this work was to evaluate the air quality of Surgery Units (SU) and ICU of two private hospitals from the State of Alagoas. This study was developed based on three of the four technical norms NT01, NT02 and NT03 of the RE N^o9/ANVISA from 2003, and CP N^o109/ANVISA from 2003. At Hospital A, a SU with three surgery rooms, and one general ICU were analyzed, and one CC with four surgery rooms at hospital B. Bioaerosols were collected by using an Andersen Impactor with petri dishes containing Sabouraud Dextrose Agar media and 50 mg.L⁻¹ of chloramphenicol, flow of 28,3 liter/minute at 1,5 meters of the floor; the temperature and relative humidity were obtained by a digital multiparameter. The following physical, chemical and biological parameters were found for Hospital A: temperature, 25% (1/4) of the environments were nonstandard above the maximum of the 24°C recommended (surgery room 1); relative humidity, 50% (2/4) of the environments were nonstandard below the minimum recommended of 40% (surgery rooms 1, 3); CO₂, all the environments showed nonstandard above the 1.000 ppm (parts per million); fungi, the surgery rooms 1, 2, and ICU had values above 750 UFC/m³ of air, and showed the pathogenic species *Paecilomyces variotii*, *Aspergillus niger*, *Aspergillus ochraceus* (risk 2), *Penicillium chrysogenum* and *Monilia sitophila*, and the non-pathogenic *Penicillium purpurogenum*. At Hospital B there were nonstandard of 25% (1/4) for T°C (room 4), 25% (1/4) for UR%, and 50% (2/4) for CO₂, with 100% of standard for UFC/m³ of air, which showed the non-pathogenic fungi *Penicillium piceum* and *Acremonium strictum*, and the pathogenic fungi *Aspergillus sydowii*. The Hospital B showed a best air quality. The presence of pathogenic species and non-compliance of physical and chemical parameters increases the risk of health disorders for patients and health professionals.

Keywords: indoor air quality, fungi, acclimatized health environments

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