

TITLE: ISOLATION AND IDENTIFICATION OF ANEMOPHILIC FUNGAL MICROBIOTA AND SURFACES IN AN INTENSIVE CARE UNIT AND ITS SUSCEPTIBILITY TO THE RED PROPOLIS OF ALAGOAS

AUTHORS: CALUMBY, R.J.N.; SILVA, J.A.; MOREIRA, R.T.F.; ALMEIDA, L.M.; DORNELAS, C.B.; NASCIMENTO, T.G.; GRILLO, L. A. M .; ALVINO, V.

INSTITUTION: UNIVERSIDADE FEDERAL DE ALAGOAS, MACEIÓ, AL (AVENIDA LOURIVAL MELO MOTA – TABULEIRO DOS MARTINS , CEP 57072-900, MACEIÓ – AL, BRAZIL)

ABSTRACT:

In recent years, fungal infections of hospital origin, especially in Intensive Care Units (ICUs), have become of great importance because of their gradual increase and the high rates of morbidity and mortality. In addition, these infections are of particular interest in the increasing occurrence of resistance to currently available antifungal medications. Natural products have become sources for the development of new drugs, allowing the advancement in the discovery of therapeutic agents against infections. Based on the above, the objective of this study was to isolate and identify the fungal microbiota from air and ICU surfaces and to evaluate the antifungal activity of Alagoas Red Propolis (ARP) against isolated microorganisms. The technique used to collect samples from the environment was that of spontaneous sedimentation in Petri dishes containing Sabouraud Dextrose Agar (SDA). Surface material was collected using sterile swabs soaked in 0.9% physiological solution, which were seeded by radial scattering on the surface of the SDA medium. For the identification of fungi, the macro and microscopic characteristics of the colonies were compared and the yeasts of the genus *Candida* were identified by inoculation in chromogenic agar. In order to obtain the extracts, the in natura crushed propolis was subjected to cold extraction (maceration). The investigation of the antimicrobial activity was carried out by the broth microdilution. In the quantitative analysis of samples collected from the air, the growth of 114 Colony Forming Units (CFU) was observed. Regarding the samples collected from surfaces, 278 CFU were obtained, especially the air conditioning filter with 204 (73.4%) CFU. *Cladosporium cladosporioides* was the most frequent fungal species both in the environment (21.9%) and in the air conditioning filter (36.3%). Analyzing the results of the antifungal activity, the hydroalcoholic extract and the fractions, tested in isolation, presented Minimum Inhibitory Concentration (MIC) against all strains studied, varying between 0,39 and 25,0 mg/mL. Based on these findings it is concluded that the great diversity and the high frequency of fungal isolation in the ICU are worrying factors, since the immunological condition of the hospitalized patients may imply the involvement of nosocomial infections. It was also verified that the ARP presented activity against the anemophilic microorganisms tested and could be used as a therapeutic alternative.

Keywords: anemophilous fungi, surface fungi, hospital infection, alternative therapeutic, red propolis of Alagoas