

**TITLE:** ASPERGILLUS SPP ISOLATED FROM HOSPITAL ENVIRONMENT: PRELIMINARY DATA

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**ABSTRACT:**

Invasive fungal infections (IFIs) caused by the genus *Aspergillus* (IA) are a growing problem at the hospitals, due to the increase in the susceptible population, such as patients with hematological malignancy under neutropenia, hematopoietic stem cell transplants, solid organ receptors, patients with chronic obstructive pulmonary disease, and intensive care patients. The hospital environment can be an important source of contamination for these patients, and because of that, a better knowledge about this issue can contribute to the control of IA in hospitals. The aim of this study is to evaluate the fungal load of *Aspergillus* spp isolated from the air of hospital sectors and associate with climatic factors. Between 2021 and 2022, air samples were collected in each of the four seasons of the year, in hospitalization units (UIN), of the Hospital das Clínicas of the Botucatu Medical School – UNESP where there were patients susceptible to the development of AI. At the same time of collection, local temperature and humidity were measured. Fungi were isolated and submitted to counting in colony-forming units (CFU), as well as phenotypic identification. The count was presented in median, first and third quartiles, and compared by the Wilcoxon test and the correlations made by Spearman's method. P values lower than 0.05 were considered significant. *Aspergillus* isolation was observed in all periods of the year, being higher in winter than in other seasons, which did not differ from each other [winter = 2.0 [1.0 – 3.0] UFC/UIN vs spring = 0.0 [0.0 – 1.0] UFC/UIN vs summer = 0.0 [0.0 – 0.0] UFC/UIN vs autumn = 0.5 [0.0 – 1.0] UFC/UIN;  $p < 0.01$ ]. The most prevalent species among the isolates identified was *A. flavus* (40.0%) followed by *A. fumigatus* (31.1%) and *A. niger* (28.9%). *A. flavus* was observed predominantly during the winter, which represented 60.9% of the isolates. There was an inverse correlation between fungal load with temperature (Spearman's Coefficient = -0.592;  $p > 0.01$ ) and with the humidity (Spearman's Coefficient = -0.645;  $p > 0.01$ ). These findings draw attention to the predominance of the species *A. flavus* in the hospital environment and the higher fungal load observed in winter, where there is lower temperature and humidity, which may represent a higher risk of incidence of AI.

**Keywords:** *Aspergillus*, immunosuppressed infection, hospital environment