ARQUIVOS DE ASMA, ALERGIA E IMUNOLOGIA

Os efeitos das mudanças climáticas e agentes poluentes na polinose: revisão bibliográfica

Esther Mendonça dos Santos[1], Eclésio Batista de Oliveira Neto[1], Cecile Hora Figueiredo Fortes[1], Jaim Simões de Oliveira[1]

Introdução: O pólen é um transportador de alérgenos e libera mediadores altamente ativos, que têm efeitos pró-inflamatórios e imunomoduladores em doenças alérgicas. Além disso, interage com mudanças climáticas e poluentes atmosféricos. Este estudo visa entender a influência das mudanças climáticas e agentes poluentes no curso da polinose. **Métodos:** Foi utilizado o banco de dados MEDLINE/PubMed, com a estratégia de busca: "Pollen allergy" AND "Climate change". Foram incluídas revisões integrativas e sistemáticas, publicados nos últimos dez anos, condizentes com o tema e objetivo do trabalho. Após a aplicação desses critérios foram selecionados 12 artigos. **Resultados:** A polinose engloba respostas alérgicas, como rinite e asma, e até doenças respiratórias não-alérgicas como a doença pulmonar obstrutiva crônica, infarto do miocárdio, acidente vascular cerebral e até suicídio. As concentrações de pólen ou esporos transportados pelo ar e a duração da exposição a esses alérgenos influenciam a exacerbação dos sintomas alérgicos. As mudanças climáticas, propiciam um aumento da concentração de CO_2 na atmosfera, acelerando o crescimento das plantas e potência alergênica do pólen. Demonstrou-se que essas partículas interagem com os poluentes atmosféricos, alterando a sua morfologia e potencial alergênico. Além disso, produzem inflamação das vias aéreas, ativando a hipersensibilidade do tipo 1 e os poluentes ultrapassam a barreira mucosa, deixando-a suscetível a infecções virais, incluindo SARS-CoV-2, além de poder potencializar as respostas da polinose em pacientes atópicos. **Conclusão:** Portanto, cabe afirmar que tanto as mudanças climáticas quanto os poluentes atmosféricos são capazes de potencializar os efeitos alergênicos dos grãos de pólen. Compreender essas relações é crucial para prevenção e manejo adequado da polinose e outras doenças respiratórias alérgicas.

1. UNIT - Afya - Maceió, AL, Brasil.

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Higher stability of basophil activation test read-out simplifies assay performance and sample logistics

Robinson Figueredo[1], Dominik Vogt[2], Anna Melone[2], Martina Berchtold[2], Michele Romano[2], Michael Schneider[2], Thomas Schuster[2], Christian Gerhold[2], Michael Gerspach[2]

Background: Basophil Activation Tests (BAT) have gained increasing importance in the field of allergy diagnostics, supported by growing scientific evidence for the higher accuracy and clinical relevance over other allergy tests. BAT is a functional allergy test based on viable basophils that are detected by the low-mid throughput flow cytometry technology. Therefore, the appropriate conditions for specimen storage and the management of acquisition of processed samples are crucial for the widely use of BAT testing. **Objective:** To improve logistics, practicability and time management of BAT testing, the novel version of the BAT including a stabilizing agent, has been investigated for stimulated and processed basophils. **Methods:** Two separated studies were performed using whole blood from four normal blood donors. First, the specimen stability of unprocessed EDTA whole blood was assessed by storing fresh blood at different temperatures (2-8 °C and 28 °C) for 0 to 4 days before performing the BAT assay. Second, the stability of processed samples was assessed at different temperatures (2-8 °C and 28 °C) and measured at different time points (0 to 10 days) after cell stimulation and fixation. **Results:** Unprocessed EDTA whole blood samples of all four donors were stable for 48 hours when stored at 2-8 °C and for 24 hours stored at 28 °C before basophil activation with at least 80% recovery. Processed and fixed basophils remained stable for flow cytometry acquisition for at least 10 days at 2-8 °C (min. 80% recovery), while for 28 °C, 48 hours stability could be shown.

1. BUHLMANN - Porto Alegre, RS, Brasil.
2. BUHLMANN Laboratories AG, Suíça.

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Airborne fungi in libraries: a potential risk to the respiratory health of visitors

Maria Anilda dos Santos Araújo[1], Rossana Teotônio de Farias Moreira[2], Rodrigo José Nunes Calumby[2], Davi Porfírio da Silva[2], Jayane Omena de Oliveira[2], Lais Nicolly Ribeiro da Silva[2], Iramirton Figuerêdo Moreira[2]

Introduction: The mycobiota of indoor environments has been the subject of extensive investigations due to its potential impact on respiratory health. Among these enclosed environments, libraries are often identified as locations prone to harboring a diversity of airborne fungi that pose potential health risks, especially in triggering allergic manifestations. Accordingly, the aim of this study was to identify the airborne fungi present in libraries of basic and higher education institutions in the city of Maceió, state of Alagoas, Brazil. **Methods:** Samples of ambient air were collected in three libraries belonging to different educational institutions, using 55 Petri dishes containing Sabouraud agar with chloramphenicol. The plates were strategically positioned in areas of constant access, with an equidistant distance of 8.5 meters between them. The taxonomic identification of the resulting fungal colonies was carried out through macroscopic observation (giant colony technique) and microscopic examination (microculture test), including complementary phenotypic assays when necessary. **Results:** Out of the 55 analyzed samples, 351 colony-forming units (CFUs) were obtained, of which 331 (94.3%) were identified as filamentous fungi, while 20 (5.7%) were classified as yeast-like fungi. The taxonomic identification of filamentous fungi revealed a higher occurrence of *Penicillium spp*. (115 CFUs), followed by *Cladosporium spp.* (79 CFUs), *Alternaria spp.* (20 CFUs), *Aspergillus spp.* (20 CFUs), and *Curvularia spp.* (18 CFUs). **Conclusion:** The results of this study highlight the presence of a wide variety of potentially pathogenic and toxigenic fungi, posing a risk of triggering allergic processes, thus reaffirming the importance of implementing hygiene and disinfection protocols in these environments to promote safer and healthier spaces.

1. CESMAC - Maceió, AL, Brasil.
2. UFAL - Maceió, AL, Brasil.

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