البحث الثانى
(بحث مشترك غير مشتق من رسالة)

عنوان البحث باللغة الانجليزية :

Demonstration of aeroallergenicity of fungal hyphae and hyphal fragments among allergic rhinitis patients using a novel Immunostaining technique .

Background

More than 80 species of fungi are suspected of inducing immunoglobulin E (IgE)-mediated hypersensitivity. Exposure to airborne fungal conidia has been linked to the respiratory symptoms in individuals with fungal allergy; however, the contribution of airborne fungal hyphae and hyphal fragments to allergic diseases is poorly understood.

Objective

We sought to investigate the expression of allergens from airborne fungal hyphae and hyphal fragments using the halogen immunoassay, which uses patients' serum IgE to immunostain immobilized allergens extracted from individual fungal particles.

Materials and methods

Airborne fungi were collected from the nasal cavities of 25 patients and 10 controls using the refined nasal wash technique, fixed on mixed cellulose ester protein-binding membranes, incubated overnight in a humid chamber to promote the germination of conidia, and immunostained with the participants own serum IgE. The samples were examined by means of light microscopy, and positively immunostained fungal particles were classified and counted.

Results

All samples contained fungal particles that expressed soluble allergens and were significantly higher in concentration than counts of conidia of individual well-characterized allergenic genera ($P < 0.05$). Resultant immunostaining of fungal hyphae was heterogeneous, and <27% of all hyphae expressed detectable allergens compared with nonstained hyphae ($P < 0.05$).

Conclusion

This study conclusively demonstrates that fungal hyphae and fragments are underestimated sources of aeroallergens because positively immunostained hyphal fragments were detected in all samples and the number of the detected fungal hyphae in any of the individual protein-binding membranes was significantly higher than the conidial counts in any of the commonly recognized aeroallergenic species.