86 Domestic Allergens in Public Places in Kuwait, a Desert Country

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Allergic diseases and asthma are associated with sensitization to indoor allergens. The indoor environment of public places as well as modern homes contains many antigens that can cause allergic disease in susceptible individuals. We investigated the levels of Der p 1, Der f 1, Fel d 1, Can f 1 and Bla g 2 in the dust from various public buildings in Kuwait. Dust samples were collected by vacuuming a $1m^2$ area of the floors of 20 mosques, 10 restaurants, 15 nurseries, 6 G.P. clinics, 10 cinemas and 12 schools. Der p 1, Der f 1, Fel d 1, Can f 1 and Bla g 2 were assayed using a two-site monoclonal antibody-based ELISA. Der p 1 and Der f 1 were below the limits of detection in all the samples. Fel d 1 was detected in 37 samples and levels ranged between 0.2 and 1.66 µg/g (GM 0.55). Can f 1 was detected only in two samples (0.46 and 0.64 µg/g). Bla g 2 was detected in 10 samples only (range 0.24 - 1.6U/ml). These findings are in strong contrast to domestic allergen levels found in previous studies in the UK and other European countries. The low levels of mite allergens in public buildings are unlikely to be of clinical significance to mite sensitive asthmatic patients. The indoor and outdoor environment of Kuwait with very low relative humidity and high temperature may explain the absence of both Der p1 and Der f 1. In contrast with European countries, the proportion of pet ownership in Kuwait is very low and this is reflected in the comparatively low levels of pet allergens in public buildings. Nevertheless, low levels of cat allergens were detected in one third of samples collected. These data suggest it is factors other than indoor allergens in public places, which are associated with asthma in Kuwait. This is important as it has been assumed that indoor allergens in public places is a contributory factor to raised asthma levels in Europe.

87 Evaluation of Cross-reactivities Among Airborne Fungi Using Monoclonal Antibodies (MABs)

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Fungal allergies and decreased indoor air quality due to fungi have been associated with a variety of adverse health effects in occupational and residential environments. In order to better understand this association, objective and accurate knowledge on the degree of fungal contamination is required. Our approach to obtain such information is based on the detection of fungi using a combination of MABs and quantitative enzyme-linked immunosorbent assays (ELISA). In this study we report the cross-reactivities of 15 MABs raised against spores of *Aspergillus versicolor* (3 MABs), *Penicillium chrysogenum* (7 MABs) and *Stachybotrys chartarum* (5 MABs). The specificities of individual MABs were assessed by direct ELISA by testing spores or mycelium of 48 fungal isolates representing 31 fungal species commonly isolated from indoor environments including species of *Alternaria*, *Aspergillus*, *Aureobasidium*, *Cladosporium*, *Epicoccum*, *Eurotium*, *Fusarium*, *Memnoniella*, *Mucor*, *Myrothecium*, *Paecilomyces*, *Penicillium*, *Rhizopus*, *Stachybotrys*, *Trichoderma*, *Ulocladium* and *Wallemia*. MAB 3E9 which was raised against spores of *A. versicolor* reacted only with spores of *A. versicolor* and *A. sydowii*. It did not, however, react with mycelium of any test fungus. MABs 7E11 and 1E1, also raised against *A. versicolor* reacted with spores and mycelium of most *Aspergillus* and *Eurotium* species as well as with mycelium of *Trichoderma harzianum*. MAB 7E11 also reacted with spores and mycelium of *Fusarium tricinctum* and spores but not mycelium of several *Penicillium* species. All 7 MABs raised against *P. chrysogenum* reacted with spores and mycelium of all *Aspergillus* species, most *Penicillium* species, *Paecilomyces variotii*, *Eurotium amstelodami* and *Wallemia sebi*. In addition, MABs 2B8, 4D2, 6C3 and 10D4 also showed strong reactivity to mycelia of all *Memnoniella* and *Stachybotrys* isolates as well as weak reactivity to spores of some *Stachybotrys* isolates. MAB 2B8 also reacted with mycelium but not spores of *Trichoderma harzianum*. All 5 MABs produced against Stachybotrys chartarum reacted with spores and mycelium of most *Memnoniella* and *Stachybotrys* isolates. MABs 3B2 and 10A5 also reacted with spores and mycelium of *Myrothecium verrucaria* whereas MABs 1D4, 9F9 and 4E12 reacted only with spores of this stachybotrys-related fungal species. In addition, MABs 3B2, 10A5, 9F9 and 4E12 also reacted with spores and mycelium of the genus *Cladosporium* whereas MAB 1D4 instead reacted with spores and mycelium of *Trichoderma harzianum*. In summary, several of the 15 MABs showed widespread cross-reactivities even between phylogenetically distant genera such as *Stachybotrys* and *Aspergillus/Penicillium*. The observed cross-reactivities imply that many fungi express common antigenic determinants with species-specific quantitative expression patterns. Although most MABs reacted with spores and mycelium, some MABs were found to be mycelium-specific or spore-specific which indicates that both types of biomass may express unique antigenic determinants. From a practical point of view, the results emphasis the need for extensive screening of MABs and polyclonal antibodies before they can be successfully and reliably applied for genus or species-specific monitoring of fungi present in environmental samples.

88 Withdrawn

89 Significant Differences of Airborne Allergen Counts (AAC) Within Areas of One City

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AAC are a traditional method to determine exposures of allergic patients to allergens. AAC correlates with symptom severity in seasonal allergic rhinitis(SAR). There is scant information about the intraurban varitions of AAC in a single city. Three AAC sites were established in El Paso 11-13 miles apart. AAC were performed using Rotorod collectors. One set was in a established neighborhood (100yrs),the second (50 years), the third was a new area(10 yrs) AAC was done 5/7 days of week. There were significant differences in AAC between areas. The 100 yr neighborhood showed bermuda grass levels up to 4x the others, The difference was from high AAC(800 p/24hr) to Very Low (<50) on the same day. Similar differences occured with molds where 50 yr site was higher and weeds where 100 yr site was higher. The differences were quantitative not of differing species. The findings suggest that within any one urban area marked differences of AAC and exposure occur with significant clinical importance. Further study is indicated to determine how the varying AAC affects allergy symptoms in the different areas.

90 Depression and Anxiety Associated With Allergic and Irritant Sensitivity

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Numerous studies have found a high prevalence of allergy in patients with depression. A high prevalence of both depression and anxiety has been reported in patients with irritant sensitivity. These studies are confounded by the high coincidence of sensitivity to allergens and irritants. Questions to determine health problems associated with airborne allergens and irritants were included on a random digit dial telephone survey of the general population in 42 counties in eastern North Carolina. In addition, questions validated to diagnose depression and anxiety with the sensitivity and specificity of a psychiatric visit were included in the interview. Trained interviewers and automated data entry were employed. The survey was conducted in the summer of 1998. Statistical analysis was performed using chi square analy-

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