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Abstracts: Concurrent Sessions

To determine the factors associated with cockroach (CR) allergen exposure and sensitization in moderate to severe asthmatic children, we conducted a cohort study on patients presenting to 5 outpatient clinics in Baltimore to include urban and suburban residents of varied socio-economic status. 106 asthmatic children aged 5 to 17 (mean 11.1 ± 2.7 yr) were enrolled from Mar. 1986 to Feb. 1991. There were 78 males, 28 females, 57 whites and 49 non-white. Skin tests were done to CR and RAST to mold. Dust was obtained from 87 homes and assayed for CR, dust mite, cat and mold spores counts from up to 3 locations (bedroom, living/family room floor, couch and kitchen). In the home, there was a high correlation between the presence of CR allergen in the kitchen and the bedroom (r = 0.73, p < 0.0001). There was a strong relation between level of domestic CR allergen exposure and degree of skin test sensitization (r = 0.49, p < 0.0001). CR allergen exposure and sensitization were strongly related to the socio-economic status, race, age, geographical location and mold RAST. However, no association with dust mite and cat allergen and gender. 45% of the urban homes had detectable CR allergens (Dia LLD > 0.8) compared to 14% of the suburban homes. No CR allergen was detected in the higher socio-economic classes irrespective of urban or suburban residence, 26% in the middle class homes and 45% in the lower socio-economic class. The median level of distribution of CR allergens in the urban and suburban homes were similar (Dia 1.6; Ulg, Dia 2.4 Ulg) and suburban (Dia 1.5-6.6 Ulg; EIA 3.5-5.6 Ulg). There was a strong intercorrelation among race, socio-economic status and geographical location. These results suggest that in these populations CR allergen exposure and sensitization more strongly related to socio-economic status than to geographical location.

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86 THE EFFECT OF ALLERGEN AVOIDANCE ON MATTRESS Der p 1 CONTENT AND BRONCHIAL REACTIVITY IN MITE SENSITIVE ASTHMATIC CHILDREN. F. Canwell, A. Razif, J. Oliver, A. Crewes, K. Birmingham, J. Weeks, Institute of Child Health, University of Bristol, England.
Mattress, duvet and pillow covers and benzyl benzoate reputedly reduce mite allergen exposure. We used both in a study of Der p 1 content and non-specific bronchial reactivity to histamine in mite sensitive asthmatic children. 32 boys and 30 girls aged 7-11 years from the Bristol area participated, randomly divided into placebo (n = 34) and actively (n = 28) treated groups. The children’s bedrooms were actively treated with benzyl benzoate and Gortex covers or placebo, supervised by a research nurse. Der p 1 contents and bronchial reactivity expressed as dose response slope (DRS) were determined at baseline, 6 weeks and 6 months. Both groups were similar with regard to their initial mite Der p 1 content and DRS. Six weeks after active treatment, Der p 1 content was significantly lower in the active group, with a mean reduction of 73 % in the active group vs. 21% in the placebo. The mean DRS was also lower in the active group (p = 0.02) at 6 weeks. 6 months after treatment the mean DRS of both groups were not different. This rigorously controlled study does not appear to show as big an improvement in non-specific bronchial reactivity as might have been expected from uncontrolled studies.

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87 DER PI LEVELS IN AIRBORNE AND SURFACE DUST. J. Oliver, K. Birmingham, A. Crewes, A. Razif, J. Weeks, E. Carron, Institute of Child Health, University of Bristol, England.
Airborne allergen samples could indicate the quantity of allergen to which a patient is exposed. They could also relate to the allergen reservoir in the patient's environment. One hundred and ten bedrooms of asthmatic children were sampled. Samples were collected by the following methods: Casella air samplers attached to the pillows collected cumulative samples during a two week period. Dust was vacuumed from mattress, duvet, pillow and bedroom carpet. Samples were assayed for Der p 1 content. Weak correlations were found between air and surface Der p 1 content. Mattress r = 0.27*, Duvet r, 0.22*, Pillow r, 0.41*, Carpet r, 0.18.* (p < 0.05)

As the connection between the surface and airborne Der p 1 is not strong it is difficult to decide which parameter is of particular relevance to the individual in relation to allergen sensitization and/or provocation.

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88 INDOOR ALLERGENS: REGIONAL VARIATION IN SAUDI ARABIA. A.R. Al-Fayh, M.D., S.M. Hassain, Ph.D.; M.O. Gadh-el-Rah, MD; K. Al-Moharek, MD; S.T. Al-Sedary, PhD, Riyadh, Saudi Arabia.
As part of an allergological investigation identifying the role of extrinsic factors in the increasing prevalence of bronchial asthma in children in Saudi Arabia, 400 house dust samples from both asthmatics and control homes were collected from various regions and analyzed immunochromatically using ELISA technique. The results revealed that the mountainous region contained the highest amount of Der p 1 (84,000 ng/g dust) compared to Der f 1 (55 ng/g), while the agricultural region showed very little presence (29 ng/g) of both Der p 1 and Der f 1. Similarly, the coastal region contained high level of Der f 1 (22,945 ng/g) compared to Der p 1 (90 ng/g). The desert region with low humidity (40-50%) also contained very low (106 ng/g) of both Der p 1 and Der f 1. Fd d 1 and Par a 1 analyses revealed no major geographical differences but isolated samples contained up to 69.3 and 46.420 ng/g dust. SPT reactions to indoor allergens in 240 asthmatic patients from these regions also indicated considerable variation in their pattern of reactivity. The study suggests the influence of geography and climate on the growth and concentration of house dust mite species and enhances its sensitization impact in the Kingdom's traditional society where people tend to stay more indoor than in the outdoor environment.