SUNDAY

288 Distribution of Indoor Fungal Spore Levels

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RATIONALE: The subject of airborne fungal spore levels in home living spaces has been of considerable interest to the Allergy community. To study the distribution of fungal spores in typical domestic indoor spaces we conducted the following studies.

METHODS: Data for indoor spore levels from two Healthy Homes Demonstration projects was combined to produce a large database. Airborne indoor fungal spore collections were routinely taken from bedrooms. bathrooms, main living areas, kitchens, basements and outdoors using either an Allergenco or a Bioaire spore trap. Collections were evaluated microscopically for 25 common indoor spore types. Statistical evaluation of results was carried out using SPSS software.

RESULTS: The database contained data from 1055 separate collections taken in 250 individual homes. Mean total spore level for all collections was 4383 per cubic meter of air(M3). The lowest quartile count was 0 to 213 spores /M3 and the highest Quartile was 2128 to 550,395 spores /M3. The highest level recorded was 550,385 spores/M3 and the top 5% of counts were above 10072 spores/M3. Cladosporium appeared most frequently (97%) of collections (median 171 spores/M3) but Aspergillus/Penicillium type spores had the highest mean presence with 2540 spores/M3. Stachybotrys spores were identified in 10% of collections and Aspergillus/Penicillium spores in 40% of collections. The highest spore levels were found in basements (mean 14,030 spores/M3) and the lowest in living/family rooms (mean 1639 spores/M3).

CONCLUSIONS: Domestic airborne fungal spore levels are typically in the low thousands of spores/M3 with a few contaminated areas exceeding hundreds of thousands of spores/M3.

289 The Effect of Increasing Ragweed Pollen Counts On Skin Prick Reactions

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RATIONALE: We previously demonstrated an increasing trend of ragweed counts in the Midwest over the last 13 years with a statistically significant difference between the first five years and the last five years. We hypothesize that increasing ragweed counts and exposure over the last 13 years is associated with an increase in prevalence of clinical reactivity to ragweed demonstrated by skin prick test reactions.

METHODS: Based on previous data of a statistically significant difference between ragweed counts from 1998-2002 and 2006-2010, we performed a retrospective chart review of patients with skin prick testing for these years. A total of 588 charts met inclusion criteria, and skin prick reactions to ragweed were recorded as positive or negative. Positivity was defined as a wheal of 3 mm greater than saline control and erythema of at least 10 mm. SAS software was used for analysis with Cochran-Armitage trend test and chi-square test to determine significance with p value <0.05.

RESULTS: Of the 588 charts reviewed, 575 skin prick tests had results for ragweed. There was no increasing yearly trend of positive skin prick reactions to ragweed (p=0.65). There was also no difference in positive skin prick reactions between the first five years and the last five years [103 (36%) and 112 (39%) respectively, p=0.35].

CONCLUSIONS: Although ragweed counts have steadily been on the rise over the last decade, it is likely that our exposure in the Midwest has always been above average. Increasing counts have not affected the prevalence of clinical reactivity.

290 House Dust Mite – Crustacean-Mollusk-Insect Syndrome (HCMIS) in A Patient Resident of A Tropical ZONE

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RATIONALE: To describe a case of HCMIS in a child resident of a tropical zone.

METHODS: Clinical records review, specific test evaluation, medical follow-up.

RESULTS: A 9 year old child resident of a tropical zone (Colombian coast) with clinical history of asthma, rhinitis, urticarial episodes with the intake of shrimps and pharyngeal pruritus with the intake of crabs. Considering this history, several tests were made, such as an aeroallergen skin prick test, which resulted positive for House Dust Mites (blomia tropicalis, dermatophagoides farinae and pteronyssinus), dog and cat epithelium, cockroach, mosquito and cat flea; a food allergen skin prick test, which was reported as positive for shrimp and, a prick by prick test with crab which was positive as well. Due to high suspicion of a pan-allergen presence, a blood sample was takes for tropomyosin determination, which also resulted positive.

CONCLUSIONS: The house dust mite- crustacean-mollusk syndrome was described in the 90′s, when this association was detected in multiples studies, and was confirmed years later with the detection of anti-tropomyosin antibodies in 80% of the cases, and other proteins named minor allergens in the 20% of the cross reactions remaining. Considering that the tropomyosin and the other minor allergens are present in several species including arthopods and mammals, because of its phylogenetic preservation, an extension of this syndrome is here proposed through the presentation of a clinical case, in order to involve insects as related to the allergens that trigger this disease.

291 Correlation of Yearly Poaceae Pollen and January to July Rainfall

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RATIONALE: Poaceae (grass) pollen is a major outdoor aeroallergen in the United States. To study the impact of seasonal rainfall on yearly grass pollen production we conducted the following.

METHODS: Pollen was collected daily using a Hirst style spore trap positioned atop a 5 story building in a metropolitan area. Slides with collected pollen were mounted and stained using Calberlas stain in glycerin jelly. Pollen presence was evaluated using the 12 transverse method. Pollen numbers were stored using an Access database and weather information was retrieved from an American Weather Service station adjacent to the collector. Data is evaluated as numbers of pollen grains collected per year from 1998 to 2012.

RESULTS: Total yearly grass pollen collected varied from 1205 (2005) to 11237 (2008). Rainfall average for the 6 months (Jan 1 to July 1) was 21.6 inches (SD 5.7 inches). Rainfall for the15 years varied from 10 inches in 2000 to 28 inches in 1999. There was a positive correlation (0.18) between rainfall in the previous 6 months and grass pollen count. There was no correlation (0.06) between rainfall in the previous 12 months and grass pollen count. There was also a positive correlation(0.12) between rainfall in the previous 6 months and the length of grass pollen season and between total grass pollen and the length of grass season (0.29).

CONCLUSIONS: Rainfall during and immediately preceding grass season has a positive impact on the duration and severity of grass pollen production and release.