SATURDAY

## 93 Prevalence of Sensitization to Mold Allergens in Patients with Respiratory Allergy

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**RATIONALE:** Sensitization to fungi is recognized as a risk factor for exacerbations among patients with asthma diagnosis, however, its contribution as a cause of allergic disease is still a subject of debate. The aim of this study is to know the fungal sensitization among patients consulted for respiratory symptoms in a tertiary center of allergy, as well to assess the prevalence by diagnosis, type of fungi and age group.

**METHODS:** A retrospective study was conducted, obtaining data from the records of skin tests of patients attended at an allergy center in Monterrey, Mexico, between January, 2010 and December, 2014. These tests included: *Alternaria alternata, Helminthosporium sativum, Hormodendrum cladosporioides, Penicillium chrysogenum, Rhizopus nigricans, Aspergillus fumigatus*.

**RESULTS:** 5,325 skin test were performed. 877 (16.65%) were positive for fungi. The most prevalent was *Alternaria alternata* with 5.4%. The highest prevalence was identified in the 0 – 10 years age group, with 6.4%, followed by 3.5% in the 11 – 20 years age group. The most prevalent mold in patients with asthma was *Alternatia alternata* with 6.7%. *Aspergillus* sensitization prevalence among patients with asthma was 3%.

**CONCLUSIONS:** The highest prevalence of sensitization was found in the 0 – 10 years age group. The most prevalent mold was *Alternaria Alternata*.

## 94 Association of Aspergillus Monosensitization with Asthma and Rhinosinusitis

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**RATIONALE:** Aspergillus fumigatus is a ubiquitous mold linked to respiratory disease. Previous studies demonstrate conflicting results regarding asthma and rhinitis in patients sensitized to molds. We aim to identify the association of aspergillus monosensitization with severity and control of asthma and rhinosinusitis.

**METHODS:** We performed a retrospective chart review of patients who underwent skin testing from 2012 to 2015. We included patients with negative skin prick tests who underwent intradermal skin testing (IDST).

**RESULTS:** Out of 1467 randomly selected cases, 215 (154 females and 61 males) met inclusion criteria and were grouped based on IDST: 1) negative IDST (n=93); 2) positive aspergillus only (n=34); 3) other positive inhalants (n=88). Mean age was 52.0±15.7 years. Overall asthma rate was 38.1% (29%, 56% and 41% respectively; p<0.05), with no significant difference in asthma severity between groups (p=0.44). 79% of patients in group 2 reported asthma control, compared to <50% in other groups (p=0.06). Overall rhinosinusitis rate was 97.2% (98%, 94% and 98% respectively; p=0.46). 50% of patients in group 2 reported control of rhinosinusitis, compared to 20% in other groups (p<0.05). There was no statistical difference in rhinosinusitis control among patients in groups 1 and 3 (p=0.97).

**CONCLUSIONS:** Monosensitization to Aspergillus was associated with higher asthma rate, but not with increased asthma severity or control. Monosensitization to Aspergillus did not differ in the rate of rhinosinusitis, but was associated with better control compared to the other groups.

## 95 Is There a Temporal Relationship Between Outdoor Alternaria alternata Spore Counts and Specific IgE Alternaria alternata Levels?

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**RATIONALE:** Outdoor spore counts exhibit significant seasonal variation. We hypothesize a temporal relationship between outdoor Alternaria spore levels and measured sIgE levels.

**METHODS:** Data on outdoor spore levels were collected for *Alternaria alternata* between March and November, 1998 to 2012. Collections were made from a fifth floor rooftop in Kansas City. Spores were collected with a Burkard device and slides read by NAB certified counters using the 12 traverse method in four hour increments. Patient Alternaria IgE blood levels were retrieved from a clinical laboratory database from January 2000 to September 2012. IRB approval was obtained. We looked for a relationship for the time period 2000-2012. Patients with sIgE < 0.35 were excluded. Units of time were defined in weeks.

Data was analyzed using SAS. Average weekly Alternaria counts and IgE results were log-transformed. The logarithmic correlation between average counts and sIgE were computed for the same week up to twelve weeks prior. Twelve weeks was chosen as the cutoff, otherwise one would be in part of the season where measurements for three months would have already been made.

**RESULTS:** Correlation between weekly Alternaria spore levels and sIgE levels ranged from -0.009 to +0.205 during the twelve week period. Alternaria counts 2 weeks prior exhibited a significant positive correlation (0.205) with subsequent positive sIgE levels (p <0.001).

**CONCLUSIONS:** There is a correlation between outdoor Alternaria counts two weeks prior and measured sIgE Alternaria levels. This correlation may justify more rigorous studies to determine possible association between Alternaria spore counts and sIgE levels.

## 96 Aerobiology of Yeasts: Viable Colonies and Molecular Identification from Burkard Samples

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**RATIONALE:** Various fungal spores are commonly identified microscopically on Burkard air samples; however, yeasts are not identified on these samples. By contrast, yeast colonies commonly occur on culture-based air samples, but are seldom identified to genus or species. Since several yeasts are known allergens, their atmospheric concentrations should be elucidated. The current study was undertaken to develop molecular markers and methods for detecting the presence of yeast in atmospheric samples.

**METHODS:** One-minute air samples for culturable fungi were collected weekly from February through July 2015 with a single-stage Andersen sampler using malt extract agar. Cultures were identified by microscopy and colony morphology. Samples for molecular analysis were collected using a Burkard volumetric 7-day spore trap and DNA was extracted from samples on four days. The molecular analysis included species-specific primers for *Aureobasidium pullulans* and *Saccharomyces cerevisiae* along with genus-specific primers for *Rhodotorula*. DNA was amplified by conventional PCR.

**RESULTS:** During the 6 months of viable sampling, total yeast concentrations varied from none on 6 February to 954 CFU/$m^3$ on 22 May, when yeasts were 47% of total colonies observed. Additionally, *Rhodotorula* accounted for 777 CFU/$m^3$ on May 22. Molecular markers detected the presence of *Rhodotorula* on the Burkard samples for all four days tested and *Aureobasidium* on three of the days. *Saccharomyces cerevisiae* was not detected on any of the tested samples.

**CONCLUSIONS:** This molecular method using conventional PCR can determine the presence and identity of yeasts from Burkard samples. More work is needed to quantify and determine seasonal trends of these important allergens.