SUNDAY

359 Trends in Tree Pollen in the New York Metropolitan Area

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RATIONALE: Tree pollen is a very prominent aeroallergen in the all areas of the United States with a long seasonal duration clinically. We examined trends in tree pollen with the New York City metropolitan area over an 18 year period. The expected pattern of sequential pollen release for the New York City metropolitan area is that trees pollinate in the spring, predominately between March and June.

METHODS: Pollen was collected using a volumetric sampling device via the National Allergy Bureau standard from 1990 through 2007. Meteorological data was accumulated via review of the National Oceanic Atmospheric Administration records from 1990-2007.

RESULTS: Tree pollen is the dominant pollen from the period of March through August accounting for 95% of the total pollen seen within that time period. Tree pollen levels peaked in May with an average daily pollen count for the 15 year period of 990 grain/m^3 (95% confidence interval). Total tree pollen was found to decline over a 10 year period by 13,348.19 ($p = 0.048$). During this same period, the latest presentation of total tree pollen during the year began to present earlier within the year day 256, day 247, and eventually day 241. This decline was followed by 5 year averages ($R^2 = 0.98$).

CONCLUSIONS: Total tree pollen has declined in total number with an associated earlier onset of the latest presentation of total tree pollen. These changes may be attributed to increased construction in the New York Metropolitan Area, which has decreased the amount of trees present.

360 Post-Katrina Changes in Ragweed Pollen Concentrations and Sensitivity Levels

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RATIONALE: Recovery from Hurricane Katrina in New Orleans has been slow with one-third of all homes still unoccupied after 3 years. Many areas of New Orleans are uncared for and weeds are abundant in the city. This study compared the pre and post-Katrina levels of airborne *Ambrosia* pollen and skin test sensitivity.

METHODS: The atmosphere in New Orleans has been monitored since August 2003 with a Burkard spore trap on the roof of a five-story building at Ochsner Clinic Foundation using standard methods. Pollen concentrations from August through October 2003 to 2007 were compared. Patient charts from Ochsner Clinic Allergy Department were analyzed to determine percent of patients SPT positive to ragweed in the 8 months prior to and one to three years following Hurricane Katrina.

RESULTS: *Ambrosia* pollen level in 2006 and 2007 were greater than pre-Katrina levels. Data from 2003, 2006, and 2007 were used for statistical analysis. Peak concentrations for these years were 178, 360, and 261 pollen grains/m^3, respectively. Analysis of variance showed a significant difference between the ragweed pollen concentrations during these 3 years ($F = 3.11$, $p < 0.05$) with the mean concentration significantly greater in 2006 ($t = 2.91$, $P < 0.05$) and 2007 ($t = 2.12$, $P < 0.05$) than in 2003. Prior to Katrina 14.5% of 359 patients were SPT positive to ragweed, while from August 2006 through July 2008 17.8% of 780 patients were SPT positive.

CONCLUSIONS: Following Katrina aeroallergen levels in New Orleans showed significant increases in *Ambrosia* pollen levels. Skin testing has shown a 23% increase in ragweed pollen sensitivity.

361 Temporal Correlation of Airborne Fungal Spore Concentrations

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RATIONALE: Sensitivity to airborne fungal spores is very common among allergic individuals. Allergy to Aternaria is probably the most frequent fungal allergy. However, many other spore types appear in the air concurrently. To study the temporal correlation of common airborne spore types we conducted the following.

METHODS: Airborne fungal spores were collected onto glass slides from February to November for the years 1998 to 2008. Collections were made continuously atop a 5 story building using a Hurst style spore trap. Slides were stained with Calberlas stain and evaluated microscopically every 6 hours for airborne fungal spore concentrations of 25 common taxa. Spore counts were stored in an Access database. Accumulated data was transferred into SPSS statistical software and evaluated for Pearson correlation.

RESULTS: Analysis indicated that airborne Alternaria was strongly, positively correlated with Botritis (0.26), Cladosporium (0.26), Curvularia (0.58), Dreschlaria (.30) and Epicoccum (0.25). Airborne Alternaria was poorly positively correlated with Stemphilium (-0.08), Torula (0.11), Oidium (-0.24) and Pernospora (0.01). Basidiospores and Ascospores were strongly correlated with each other (0.30) but poorly correlated with Alternaria (0.04 and 0.08 respectively) The strongest positive correlation was between Nigrospora and Curvularia (0.80) and the strongest negative correlation was between Curvularia and Oidium (-0.87).

CONCLUSIONS: Conditions that result in high airborne concentrations of Alternaria also result in high concentrations of other large spore types including Curvularia and Epicoccum. Conditions that result in high concentrations of Ascospores and Basidiosores generally are not conducive for high concentrations of Alternaria.

362 Predicted Pollen *VS* Collected/Sampled Pollen at London ON Canada

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RATIONALE: Members of the allergic community routinely use the Internet to track pollens. According to a Google Canada search for the 2007 season, the NAB ranked second to a commercial weather service. We undertook a comparison of the pollens we collected/sampled to what was predicted.

METHODS: Pollen collected at London ON from April through October 2007 (www.aaaai.org/NAB) were compared to the corresponding daily predictions from www.theweathernetwork.com for tree, grass, and ragweed pollens. The data was analysed based on the percentage of days pollen types were collected & not predicted [C-NP], predicted & not collected [P-NC], and collected & predicted [C&P].

RESULTS: Weeds: C-NP = 29%, P-NC = 71%, C&P = 65%. Trees: C-NP = 84%, P-NC = 52%, C&P = 47%. Grass: C-NP = 3%, P-NC = 45%, C&P = 52%. There were significant variations and differences between pollens collected and predicted ($p = 0.05$).

CONCLUSIONS: Predicted levels reported by the weather service differed significantly with actual counts provided by our NAB station. The public would be better served with actual pollen counts than the commercial predicted pollen model presently in use.