602 Airborne Pollen Reached Severe Levels During the Spring Season in an Underserved Community with High Asthma rates in Jacksonville Florida

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RATIONALE: Duval County, Florida is divided into 6 Health Zones. The most urban is Health Zone 1 (HZN1) of which 75% of its 109,314 residents are African Americans. It has the highest rate of asthma related hospitalization of the 6 health zones. During Spring 2013, we showed significant elevation of serum IgE from 200 random residents of the community of which 14% had levels greater than 10,000 ng/ml. Pollen inhalation is a risk factor for allergic conditions. Therefore, we hypothesized that pollen is a contributing factor for the elevated levels of IgE and the high rate of asthma in HZN1.

METHODS: A 7-day Burkard volumetric sampler was installed on the roof of a 5-story dormitory at Edward Waters University located in HZN1. Pollen grains were collected from 12/3/20 to 6/3/21 and were quantified by microscopy at 400X using the single longitudinal traverse method. The classification of the daily concentration of the grains (m^3) were as specified by the NAB of the AAAAI.

RESULTS: The 3 most prevalent pollen grains detected were from the families: Cupressaceae, Pinaceae and Fagaceae. The cumulative pollen counts fluctuated between absent and low (1-14) from 12/3/20 to 1/20/21 and then attained very high (> 1500/m^3) levels that peaked on 3/28/21 at 6348 per m^3. The allergenic pollen, *Quercus*, was dominant and peaked at 6257 per m^3. The cumulative pollen counts remained high (90-1499) until 5/8/21.

CONCLUSIONS: These severe levels of allergenic pollen observed over HZN1 may be partially responsible for the high rates of allergic symptoms in the community.

603 Annual Comparison of Poaceae Pollination In Lima (Perú) And Bahia Blanca (Argentina)

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RATIONALE: We compared the pollination of Poaceae during a year in the cities of Lima (Perú) and Bahia Blanca (Argentina), in order to know if there are differences, being two cities with geographic differences within the same continent in the Southern Hemisphere.

METHODS: The sampling period was between March 2020 and February 2021. An impact sampler type Rotorod (Argentina) and suction type Hirst (Peru) were used. The data are daily and are expressed in pollen grains/m3 of air.

RESULTS: Poaceae were found for both cities throughout the study period. For Bahía Blanca, the period with the highest concentration of grains/m3 begins in mid-October and ends in early December. In Bahia Blanca, the maximum peak was 93 grains/m3 of air on November 19, and in Lima a peak of 14 grains/m3 on May 10. Observing the monthly averages, the difference in concentrations between the two cities is understood, where in Lima remains almost constant, only decreasing in the months of July and August. On the contrary, in the city of Bahía Blanca, there is a marked increase in the average for the months of October and November.

CONCLUSIONS: This pilot study was useful to know how Poaceae pollen behaves in different geographic locations in the Southern Hemisphere. Similar studies are needed comparing more sites and other types of pollen to know how they can impact the allergy of citizens of the Southern Hemisphere, something that is not well studied.

604 Amaranthaceae is an Underestimated Summer Allergen with Sensitization Often Underappreciated

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RATIONALE: Amaranthaceae pollen causes seasonal allergies in summer, blossoming coincident with the flowering of other weeds of allergenic importance including ragweed and mugwort. Amaranthaceae contribution to seasonal allergic rhinitis (AR) symptoms can be underestimated. This study assesses sensitization to amaranth family plants using molecular allergodiagnostics.

METHODS: Allergen sensitization of Ukrainian population was assessed using 8016 ALEX tests performed in different regions of Ukraine in 2017-2019. Children and adults aged from 1 to 78 years were tested. Sensitization to *Amaranthus retroflexus, Chenopodium album, Salsola kali* and Che a 1 allergen were evaluated. Pollen counts were obtained for the same years used volumetric methods employing a Burkard trap placed at a height of 25 meters above the ground on the roof of Vinnitsa Medical University, Ukraine.

RESULTS: Pollen counts showed that active flowering of Amaranthaceae family members happened from the mid-August until the beginning of September. This coincides well with the most intense flowering of *Ambrosia* in Ukraine. ALEX tests showed that sensitization to *Amaranthus, Chenopodium* extracts and Che a 1 allergen varied from 1.2 to 11 % among assessed Ukrainians, being seen in all geographical regions of Ukraine. However, sensitization to *Salsola kali*', which is atypical for Ukraine's geographic zone, was clearly seen just in the Southern regions of the country, varying from 7 to 11 %.

CONCLUSIONS: Amaranthaceae pollination should be considered for intermittent seasonal AR assessment during the period expected for ragweed and mugwort allergy symptoms.