

birch pollen-allergic patients. Here, we sought to investigate if SLIT with Bet v 1 induced antibodies that prevent IgE-mediated reactions to these homologous pollen allergens.

Method: First, the IgE reactivity to the different homologs ($n = 7$) was measured by means of ELISA for each of the individuals before starting SLIT. Then, we tested the presence of IgG4 antibodies against the different pollen allergens by means of ELISA. Currently, we are performing basophil activation tests to assess the blocking capacity of the cross-reactive IgG4 antibodies.

Results: All individuals displayed IgE reactivity to at least one of the homologous pollen allergens; however, the majority cross-reacted with 4 or more allergens. Overall, SLIT with rBet v 1 induced a significant increase of IgG4 against all Bet v 1 homologous pollen allergens except for Car b 1 and Cor a 1. Sera collected after rBet v 1 SLIT inhibited basophil activation with Bet v 1-homologous pollen allergens.

Conclusion: Sublingual immunotherapy with rBet v 1 for 16 weeks induced a significant increase in IgG4 antibodies which cross-react with Bet v 1-homologous pollen allergens with exception to Car b 1 and Cor a 1. Primary experiments provide evidence of a cross-blocking activity of sera collected post SLIT with rBet v 1.

TP1177 | Impact of non-allergenic components of ragweed pollen on IgE synthesis to allergenic components

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Background: This study investigates the role of non-allergenic components of ragweed pollen in modulation of the specific responses to its allergenic components.

Method: Non-allergenic lectin-like substances (LLS) have been isolated from crude ragweed pollen extracts. Allergen-specific IgE antibodies in sera of F1 (CBAx57BL) mice immunized with the allergen-active fraction (AAF) of ragweed pollen were studied by passive cutaneous anaphylaxis methods. IgE-specific Abs in 7-days culture supernatants of in vitro cultivated mononuclear cells (PBMC) of ragweed sensitive patients were assessed by Phadia CAP assay. The synthesis of IL-1 by mouse peritoneal and splenic macrophages as well as by neutrophils of healthy donors and ragweed-sensitive patients were assayed by ELISA.

Results: Non-allergenic LLS isolated from ragweed pollen induced various immune activities. Intraperitoneal injections of LLS to F1 (CBAx57BL) mice dose-dependently impacted the synthesis of IgE-Ab to AAF. Simultaneous injections of LLS and AAF stimulated the synthesis of IgE-Ab to AAF, at the same time injections of LLS 24-48 hours prior to immunization with AAF leads to inhibition of the synthesis of IgE-Ab. Co-cultivation of PBMC of ragweed-sensitive patients with LLS and AAF increases the synthesis of IgE. LLS provides

multiple immunotropic activities stimulating the production of IgM-PFC more than 1.6-fold; stimulating the phagocytic activity of mice peritoneal and splenic macrophages more than 1.5-fold; and increasing the synthesis of IL-1 by mice peritoneal macrophages as well as by neutrophils of healthy donors and ragweed-sensitive patients.

Conclusion: The existence in extracts, especially in crude forms, of multiple immunoactivity non-allergenic substances may have an impact on the specific response to allergenic molecules used in allergen immunotherapy.

TP1178 | Specificity of mold sensitization among patients with respiratory disease in different settlements in Bulgaria

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Background: It is estimated that approximately 2%-6% of the general population in developed countries is allergic to fungi. In addition, up to 70% of mold-allergic patients have skin test reactivity to *Alternaria*. Studies have demonstrated the frequency of positive skin test varied from country to country. The aim of our study is to assess fungal sensitization among patients from three different settlements (Sofia, Stara Zagora, Krumovgrad). Now we present the data gathered from patients with symptoms of allergy.

Method: Skin tests in 309 patients with following allergen extracts: A1 house dust; A 13- D. Pteronyssinus; E1- Mixed fungal allergen; DII- Mixed fungal allergen; B II Mixed tree allergen; B1 Mixed grass allergen; B29 Mugwort pollen were done. 198 patients show positive skin tests. 111 are negative.

Results: 63 subjects show sensitization to fungal allergens in different combinations: 27- E1- Mixed fungal allergen; 20- E II- Mixed fungal allergen; 16- E1- Mixed fungal allergen and EII- Mixed fungal allergen. 34 patients are sensitized to both seasonal and annual allergens, 38 only to seasonal and 63 to annual allergen. We documented high prevalence of E1 sensitization among patients in Sofia.

Conclusion: Fungal allergy may vary from settlement to settlement.

TP1179 | A numerical evaluation of cat dander levels by safranin-O staining

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Background: Fel d 1 is the primary allergen responsible for allergic symptoms in people allergic to cats. In cat exposure rooms that

replicate home exposure, Fel d 1 levels can vary greatly over time, making it difficult to predict patient exposure. Quantification of allergen level using ELISA assays are effective but time consuming and delay the ability to regulate allergen levels in a timely fashion. The purpose of this study is to investigate dander counting by staining, light microscopy, and image processing and correlate counts to Fel d 1 levels. This could allow more rapid assessment and tighter allergen level control.

Method: Dander samples were obtained using two different methods. First, cat bedding was shaken vigorously for 1 minute every 15 minutes over 1 hour. Dander was collected by gravity for 15 minutes on isopore and glass fiber filters (Millipore) at 30, 45 and 60 minutes. Second, dander samples were collected for (how much time?) using portable air sampling pumps (Gilian 5000) at 4 L/min using 2 µm glass fiber filters and x mm isopore filters after 30 minutes of dander aerosolization using different aerosolization methods. Fel d 1 collected on glass fiber filters was quantified using ELISA (Indoor Biotechnologies). Isopore filters were stained with Safranin-O (0.01%) for a minimum of 60 minutes and visualized by light microscopy (50 × magnification). Ten images were captured on each quadrant of the filter at different locations. Particle count, area and perimeter of detected particles were obtained by computer analysis using ImageJ Software. From these, the approximate particle diameters, size distribution, and particle densities measured by ratio of particle area to filter area and by count/mm² were calculated.

Results: The results obtained from the samples collected by gravity show that the area ratio of particles detected as well as the particle count per mm² increased from 15 minutes to 1 hour. A linear correlation was found between Fel d 1 levels and area ratio ($R^2 = 0.810$). For the dander samples collected using the portable air sampling pumps, a weaker linear correlation was found with a coefficient of determination of $R^2 = 0.45$.

Conclusion: The results of this study could be useful for the real-time monitoring of allergen concentrations in cat challenge chambers.

TP1180 | Feasibility study: Comparison of source and exposure indexes of allergenic pollen trees in Lyon's green spaces with data from the pollen diary (PHD)

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Background: For several years, the number of pollen allergy sufferers has been increasing in France. About 20% of children from 9 years of age and 30% of adults are affected by pollen allergies in France [1]. These pollen allergies (pollinosis) are responsible of many symptoms for sensitive people, like allergenic rhinitis or asthma for the most serious cases. The question of urban green spaces developments is becoming essential, like in the city of Lyon which has different green areas in the heart of the city.

Method: A study was carried out from March to June 2018 on various parks in the city of Lyon in order to help landscape gardeners and local decision-makers for a practice that takes into account the health impact in the choice of species and the maintenance of green spaces. 4 pollen traps were placed in 4 different parks in the city, to analyze the air content of allergen pollen.

In parallel, people allergic to pollens completed a daily pollen diary questionnaire (PHD) on the website: <https://www.pollendiary.com/Phd/fr/start>. The main points of this PHD concern the area of residence, the general state of health, the types of symptoms and their severity as well as elements concerning the medication taken. An extraction of the data from this PHD for allergic people filling it from March to June 2018 and living in Lyon was carried out to be able to link health impact data and pollen data.

Results: The results obtained following this study enable on the one hand to analyse the pollination periods of the different species, and on the other hand to establish source and exposure indices in order to formulate recommendations to those responsible for green spaces on the species whose establishment in urban areas must be limited. One of the main results of the study is the excessive presence of birch trees in the Erevan garden, as well as historical plane trees all around the Tête d'Or Park.

Conclusion: The RNSA made this feasibility study in order to assess the nature and quantity of pollens that users living in and around these urban green spaces breathe every day and compare them with data from the pollen diary (PHD) completed by allergic people living nearby to determine if allergenic pollen peaks correspond to symptom peaks via the PHD. We need to avoid the local pollen sensitization by stopping planting allergenic species with high allergy potency in green areas and better take in consideration the health impact in the choice of vegetal species to implant.