Conclusion: In conclusion, when evaluating relationships between allergy symptoms in the EEC and field studies, many factors should be considered including both the duration of time the subject spends outside daily, and the specific time period during the pollen season that is evaluated. The EEC is a naturalistic allergen challenge model that approximates every day pollen exposure in the field and thereby a good way to examine drug efficacy reliably.

0224 | Validation of cat allergen exposure chamber for patients with perennial allergic rhinitis to cats

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Background: Allergy to cat dander is a common cause of allergic rhinitis. Testing of allergy medications can be facilitated if the exposure to allergen is controlled, the concentration reasonably constant similar to home cat allergen levels to provide a more relevant model of allergy conditions. This work aims to assess the reproducibility of the clinical response in subjects with perennial allergic rhinitis to cat, and in non-allergic subjects, in a controlled environment with stable Fel d1 levels.

Method: Fel d1 in the NEC (volume of 520 ft^2) was measured weekly for 49 weeks to assess allergen levels stability. The walls and floor of the chamber were swabbed using glass fiber filters (Millipore), while airborne allergen was measured using portable air sampling pumps (Gilian 5000) at 4 L/min with glass fiber filters. Fel d1 collected from the filters was quantified using ELISA (Indoor Biotechnologies). In order to test reproducibility of subject allergic response, we will recruit six volunteer participants (4 allergic and 2 non-allergic) for this study. Each subject will undergo two 60-minute cat allergen exposures, 1 week apart, in the NEC. Nasal, ocular and respiratory symptoms will be self-assessed by the subject every 5 minutes, while FEV_1 will be measured every 15 minutes.

Results: Using the standardized blanket shaking technique to aerosolize cat dander, airborne levels of Fel d1 over 7 weeks were found to be 39.5 ± 30.25 ng/m^3, while surface Fel d1 on the chamber walls and floor were 73.91 ± 34.93 ng/m^2 and 1793.91 ± 658.93 ng/m^2, respectively. These results show controlled allergen levels in the chamber and a reservoir on the walls and floor allowing natural subject exposure similar to home environments with cats. These results will be correlated to the nasal ocular and respiratory symptoms of the subjects.

Conclusion: The NEC has a stable Fel d1 level similar to that seen in homes. Using this methodology, the reproducibility of the allergic response in cat allergic subjects will be evaluated. Combining the subject's clinical response to the Fel d1 levels measured will further help validating the NEC for future cat allergy studies.

0225 | Immunization with a heat-inactivated polyvalent bacteria vaccine can prevent tonsillectomy in patients with recurrent tonsillitis

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Background: Recurrent tonsillitis (7 episodes in 1 year, or 5/year in the last 2 years, or 3/year in the past 3 years) induces a high consumption of antimicrobials and leads to a high rate of tonsillectomy, one of the most common surgical procedures performed in the world. Overuse of antibiotics results in potential treatment side effects and selection of multidrug-resistant bacteria, a growing global public health problem. Immune stimulation has been proposed as an alternative approach that could have the potential to prevent infection, avoiding the emergence of resistance. The aim of this study was to assess if the use of an immunostimulant of bacterial origin could reduce the number of acute episodes and avoid tonsillectomy procedures in patients with recurrent tonsillitis.

Method: We performed an 8-year observational retrospective study in 140 patients presenting with a diagnosis of recurrent acute tonsillitis and tonsillectomy criteria between 2008 and 2015. Patients received daily sublingual immunization with a whole-cell heat-inactivated polyvalent vaccine manufactured by Allergy Therapeutics Ibérica (Alcalá de Henares, Spain) containing 4×10^9 CFU/mL of *Streptoccocus pyogenes* 60%, *Haemophilus influenzae* 20%, *Moraxella catarrhalis* 10%, and *Staphylococcus aureus* 10%, for a minimum of 3 months. New acute tonsillitis episodes and need for tonsillectomy were registered.

Results: Data from 140 patients (64% female, 36% male) was gathered from clinical records. The average age of patients was 22 years (range: 3-54 years). 31% of them were 3-14 years old, 41% were 15-30 years old and 28% were older than 30. Treatment duration ranged from 3 months to 12 months (mean 5 months) and the follow-up period lasted 14 months as average. 55% of the patients showed no recurrent tonsillitis criteria, 27.1% presented recurrent tonsillitis and 17.9% were lost during the follow-up. Of 115 patients that could be followed up, 79 (68.7%) did not required subsequent tonsillectomy. There were no significant differences between age groups. Only one patient presented a systemic adverse reaction (moderate rash) and no patient had to stop the treatment due to side effects.

Conclusion: Immune stimulation with a whole-cell heat-inactivated polyvalent bacterial vaccine is safe and capable of prevent acute episodes of tonsillitis and avoid tonsillectomy in children and adults with recurrent tonsillitis.