

229 Allergen-specific Immunotherapy Using A Highly Modified Allergen And The Immunomodulator Polyoxidonium In A Murine Model Of Allergic Asthma

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RATIONALE: To investigate whether allergen-specific immunotherapy (ASIT) using a modified allergen and the immunomodulator Polyoxidonium (P) is effective in a murine model of allergic asthma.

METHODS: BALB/c mice were sensitized by seven daily intra-peritoneal injections of 10 µg OA. Each mouse in the first group of OA-sensitized mice received 16 subcutaneous (SC) doses increasing from 1 µg to 1 mg of OA twice a week for 8 weeks according to a semi-rush ASIT protocol. The second group received 8 SC injections of dosages ranging from 100 µg to 1 mg of OA modified by succinylation (sOA) having 85% modification of ε-lysine groups. The third group received 5 SC injections of sOA in dosages ranging from 100 µg to 1 mg, 3 of the 5 injections accompanied by 50 µg of P. The control group of mice was sham treated with SC injections of a similar volume of saline. Two days after the last injection the animals from each group received intranasal challenge with OA given as 20 µg in 50 ml of saline once daily for 8 days. Two days later airway hyper-responsiveness to intravenous (IV) administration of methacholine (50, 100 and 200 µg/kg) was assessed and eosinophil counts in bronchoalveolar lavage and peripheral blood were calculated. Serum levels of anti-OA IgE and IgG antibodies were detected by passive cutaneous anaphylaxis and ELISA, respectively.

RESULTS: During ASIT an initial rise in serum levels of OA-specific IgE occurred in all groups of mice. After intranasal challenge with OA, the levels of anti-OA IgE were less in the ASIT-treated groups, especially the group treated with sOA-PO, than in the control group. The levels of anti-OA IgG were elevated in the ASIT-treated groups when compared to the control group. The maximum levels of anti-OA IgG in groups treated with OA, sOA and sOA-PO were reached after the sixth, third and second injections, respectively. After ASIT, intranasal challenge of mice with OA revealed in all ASIT-treated groups a reduction of eosinophil counts in both bronchoalveolar lavage and peripheral blood, the greatest reduction seen in the sOA-PO treated group. All ASIT-treated groups had reduced airway hyper-reactivity after IV administration of methacholine compared with the control mice.

CONCLUSIONS: Administration of a highly modified allergen together with an immunomodulator such as P may facilitate ASIT in allergic asthma, rapidly shifting antibody synthesis from allergen specific IgE to IgG production. The benefits of this approach on asthma pathophysiology include rapid reductions in bronchial inflammation and improved airway hyper-reactivity. These mouse asthma model studies of ASIT using 85% allergen succinylation together with the immunomodulator Polyoxidonium may allow for development of new approaches for safe and effective allergen specific immunotherapy for allergic asthma.

230 Immunotherapy with *Dermatophagoides pteronyssinus*. Monitoring with Western-blot technique

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RATIONALE: Mites immunotherapy for the treatment of perennial allergic rhinitis results in improvement in symptoms, a reduction in the early and late phase responses to allergen and decreased tissue eosinophilia. Immunotherapy may act by altering the pattern of cytokine and antibodies production by allergen-specific T cells from a "Th2-type" profile to a "Th1-type" profile. So we set out to determine these changes monitoring the allergen-specific immunotherapy (SIT) through Western blot techniques.

METHODS: 38 patients were selected for immunotherapy according to a history of sensitization to mites (respiratory symptoms), positive skin prick test, positive nasal challenge test and specific IgE levels to mites class ≥ 2 .

Patients received continuous conventional Immunotherapy with *Dermatophagoides pteronyssinus* (DIATER Laboratories, Madrid, Spain). Before and after (five months) the SIT, -specific IgE, IgG4, IgG1 and IgA were examined by Western blot.

RESULTS: Immunoglobulins studied revealed increasing or decreasing recognitions of the *Dermatophagoides pteronyssinus* proteins before and after the SIT.

CONCLUSIONS: The utilization of the immunoblotting in the monitoring of the allergen-specific immunotherapy would provide to the allergologist of another tool for the knowledge of the response allergenic/antigenic-specific with the immunoglobulin participants, on the totality of the proteins of the extract that form a part of a vaccine.

231 Aeroallergens in the Valley of Mexico (Frequency)

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The allergenic flora and fauna in the Valley of Mexico is very diverse and changing. Contrary to what could be expected, this diversity does not obey any profound climatological changes for the reason that the City of Mexico has climatological variations during the course of the whole year that influence vegetation just like what happens in other places. The changes that it undergoes are not cyclical either. They are profound and in most cases irreversible. We consider that they all follow other factors such as overpopulation, indiscriminate invasion of green areas, uncontrolled construction of new buildings, and abuse of natural resources. To all these, we add the changes that the population produces in the types of herbs, tress, grass, saprophyte fungi, pets, etc. We take into account the presence of positive skin tests of 3 crosses in 625 patients with respiratory allergy who visited the Allergy and Immunology Service of Mexico City's Juarez Hospital and dividing them in the following sections: pollens from herbs, trees and grass, fungi spores, and household inhalants. In all the cases we applied the system of the Prick Test with immediate reading and positive and negative controls.

RESULTS: D. farinae 349 (55.84%), house dust concentrate 344 (55.41%), D. pteronyssinus 321 (51.20), german cockroach 135 (21.60%), American cockroach 121 (19.52%) *Betulla occidentalis* 107 (17.10%), fel d1 103 (16.48%) *Quercus vellutina* 100 (16%), *Schinus molle* 62, *agrostis alba* 52.

CONCLUSIONS: Indoor allergens are the most frequent inhalant allergens in Mexico City.

232 IgE Mediated Sensitization to Weeds Pollen in Saudi Arabia

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RATIONALE: Airborne weeds pollens are most prevalent pollen type in Saudi Arabia. Therefore, we conducted Skin Prick Test (SPT) in 500 patients to examine IgE mediated sensitization level to a number of weeds pollen.

METHODS: Routine SPT on 500 asthmatic patients attending allergy clinics in six different regions using commercial extracts was conducted. The selection of allergens was made after an extensive nation wide aerobiological survey using Burkard Volumetric Spore Traps. The major pollen components of the Kingdom's environment were identified as *Amaranthus viridis*, *Atriplex polycarpa*, *Chenopodium album*, *Cyperus rotundus*, *Rumex crispus* and *Plantago spp*.

RESULTS: The SPT data revealed a comparatively higher degree of sensitization to weeds pollen. In the south, mountainous region (Abha), 21.8%, while in an agricultural setting (Gassim) 75.5% patients reacted to weeds pollen. In an another location in the Eastern region (Hofuf) 16.7% of the patients while close to Red Sea region (Gizan) 9% of the patients reacted positively to various weeds pollen, which included *Atriplex polycarpa*, *Chenopodium album*, *Salsola tennifolia* and *Rumex crispus*. Individual pollen releaved *Chenopodium album* with maximum reactivity, 81.8% in agriculture setting (Gassim) followed by *Salsola tennifolia*, 75.5%, 25% (Hofuf), *Rumex crispus* 27.3% (Gassim) and 18.1% (Gizan). Apart from *Cynodon dactylon*, a grass pollen and *Prosopis*