

203 A Tolerated Sting Challenge (SC) in Hymenoptera Venom Allergic Patients on Immunotherapy Is Followed by a Decrease of Serum Levels of Mast Cell Tryptase (T)

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T is a neutral endoprotease specific to mast cells which is secreted into the circulation. A temporarily elevated serum level of T can be used as an indicator of mast cell activation and has been found in anaphylactic reactions. We evaluated the course of T level following a SC in sera of 19 patients on venom immunotherapy for systemic anaphylactic reactions to wasp stings. Four of these patients had baseline T levels elevated above 13.5 µg/l (95 upper percentile in controls), and two of these had cutaneous mastocytosis. T serum levels were measured by a fluoroenzyme immunoassay (UniCAP Tryptase). Blood samples were taken before, 20 min, 90 min, and 18 h after the sting of a living wasp. No patient developed any systemic symptoms. Median T levels before, 20 min/90 min/18 h after the sting were 6.3 (2.0 - 56.3)/4.9 (1.4 - 44.8)/5.9 (1.4 - 48.6)/6.9 (1.9 - 52.3) µg/l. As compared to the T concentration before the SC, in all patients T levels were decreased by 8.3% to 36.7% 20 min after the SC ($p=0.001$). A significant decrease of T levels was still present after 90 min ($p=0.001$), but no longer after 18 h ($p=0.546$). This pattern was also found in the subgroup of patients with elevated baseline levels of T. Thus, allergen exposure of successfully treated Hymenoptera venom allergic patients was associated with a significant decrease of T levels in the circulation. The cause of this is unclear, but may be related to allergen-induced immunologic mechanisms or to psychic effects due to relief after the tolerated SC.

204 Insect Venom Allergy and the Burden of the Treatment (BoT): Epipen vs Venom Immunotherapy (VIT)

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INTRODUCTION: VIT has established efficacy for prevention of repeated anaphylactic reactions in Hymenoptera allergic patients, which also allows patients to discontinue carrying an Epipen®. Despite their merits, both treatments may have negative aspects important to patients. We thus examined the possible negative aspects of these two treatment forms as perceived by patients.

METHODS: Eligible patients (having experienced systemic allergic reactions following a yellow-jacket sting and sensitized to yellow-jacket venom) were randomized to either VIT or Epipen. BoT measurements were carried out after 1 year of treatment with VIT or Epipen. Patients were asked to weigh the advantages and disadvantages of their treatment on a 7-point scale ranging from extremely negative to extremely positive.

RESULTS: Of the 45 patients randomized to the Epipen®, 29.5% were negative about the Epipen®, including extremely negative opinions in 2 patients, and 4 very negative. This in contrast to VIT where no patient was negative about this treatment. Although 47.7% had a positive opinion about the Epipen®, 76% of the patients preferred to start VIT after carrying an Epipen® for one year. Eight patients (24%) preferred to continue to carry the Epipen® as their only treatment (11 patients were lost to follow-up). There was no correlation between a positive overall assessment of the Epipen® as measured by the BoT and patient characteristics (such as gender, general anxiety, quality of life score before and after treatment and time interval since and severity of the reaction), except for age: older persons were more negative in their opinion about the Epipen® ($r=0.31$, $p < 0.042$). Of the 47 patients randomized to VIT, 91.5% was positive about their therapy and this was correlated with a lower pre-treatment VQLQ score ($r = 0.332$, $p < 0.24$) and a greater mean change in VQLQ score ($r = 0.321$, $p < 0.03$).

CONCLUSION: Almost 30% of the patients receiving an Epipen® as their only treatment were (extremely) negative about the Epipen®. In contrast: no patient was negative about VIT. Aside from young age, no factors predicted which patients found the Epipen® an acceptable form of treat-

ment. Even in patients neutral or positive about the Epipen®, most preferred to receive VIT after a year of carrying the Epipen®. Treatment with an Epipen® has been shown to be associated with a deterioration in quality of life (1). These results show that a significant portion of patients feel that the negative aspects of the Epipen® outweigh the positive aspects of this treatment. This suggests that the Epipen® is unsuitable as monotherapy for most insect venom allergic patients. 1. Oude Elberink JNG, et al. Venom immunotherapy (VIT) improves health-related quality of life (HRQL) in patients with allergic reactions following yellow-jacket stings. (Submitted.)

205 Multicolored Asian Ladybeetle (*Harmonia Axyridis*) Sensitivity

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A 67 year-old male developed severe persistent asthma while working in an area infested by Asian ladybeetles (*Harmonia axyridis*). Prick skin testing to a crude extract of *H. axyridis* was positive in the patient. To further examine the nature of his sensitivity, Asian ladybeetles were obtained from Applied Bio-Nomics, Ltd (Sydney, British Columbia, Canada). Twenty insects were frozen in liquid nitrogen and crushed into a powder for a combined weight of .98g. A crude extract was prepared by incubating the powder in 1:10 w/v with phosphate-buffered saline overnight at 4°C. The material was cleared by centrifugation and dialyzed. The protein content was 5.5 mg/mL with the BCA protein assay (Pierce, Rockford, IL). Western blotting using the patient's serum showed IgE binding to 16.6 KD and 30 KD proteins, similar to that previously reported (Yarbrough et al. JACI 1999; 104: 704-5). In addition, IgE binding was observed to proteins with molecular weights between 40 and 80 KD. RAST inhibition studies showed potential cross-reactivity between *H. axyridis* and extracts from common ladybeetles (*Hippodamia convergens*). No cross-reactivity to *Dermatophagoides pyronissinus* was observed. We conclude that *H. axyridis* may be a potential sensitizer in some individuals. Further studies on the nature of the allergy will be investigated. Support: US Department of Veterans' Affairs.

206 Prevalence of Pachycondyla Chinensis—Venom Allergy in the Ant Habitat Area in Korea

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BACKGROUND: Recently, immediate allergic reactions including anaphylaxis after *Pachycondyla chinensis* ant stings have been frequently reported in Korea. However, the prevalence and epidemiology of those reactions are largely unknown.

SUBJECTS AND METHODS: We undertook a visit-questionnaire survey to find out cases of immediate allergic reactions to *P. chinensis* ant sting and to estimate the rate of sensitization among the 327 adult-residents living in the small town of whole 80 households in the ant-infested area. Skin prick tests with 6 common inhalant allergens, 3 bee venom allergens, and *P. chinensis* whole body extract were performed in all subjects who had experienced allergic reactions to ant sting and 86 asymptomatic residents. The specific IgE antibodies to *P. chinensis* extract were determined by ELISA method. Thirty-seven controls outside the area were enrolled.

RESULTS: We found 7 subjects (2.1%) who had experienced systemic allergic reactions to *P. chinensis* stings, 4 of them showed repeated anaphylaxis reactions. Large local reactions had been occurred in additional 5 subjects, so the prevalence of *P. chinensis* sting allergies accounts for approxi-