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EAACI Interest Group

Hymenoptera Venom Allergy

In insect sting allergy, most of the modern dilemmas associated with immunology, pathophysiology, diagnosis and treatment of IgE-mediated anaphylactic reactions are evident. All controversial issues related to allergic diseases can be addressed within the field of Hymenoptera venom allergy, e.g.: What makes an allergen to act as an allergen? Who is at risk to get sensitised and to sustain severe reactions? Who needs immunotherapy? What are the risk factors for a poor outcome (in untreated or in treated patients)? How long does the protective effect of immunotherapy last?

Even if we still do not know how venom immunotherapy (VIT) works, we can state that it is probably the most effective form of immunotherapy, which is currently available. VIT is safe and it does protect patients from later anaphylactic sting reactions thereby improving the patients’ quality of life.

The most recent epidemiological studies continue to reveal that a substantial number of patients with insect sting anaphylaxis, who are admitted to an emergency department had a history of a previous allergic sting reaction. Nevertheless, these patients who were known to be at risk, had not been provided with an emergency kit including auto-injectable epinephrine, and VIT had not been recommended before. This finding indicates a poor awareness of the disease and of the available treatment options not only in the general population, but also among health care workers.

The aims of the Interest Group on Hymenoptera Venom Allergy are:

• To promote the knowledge on epidemiology, natural history and risk factors of insect venom allergy.
• To study new strategies for VIT.
• To endorse further investigation on the immunological mechanisms of the early and long-term efficacy of VIT.
• To increase the safety of specific immunotherapies and to provide safer criteria for stopping them.

The current Hymenoptera Venom Allergy board includes:
Chairman: M. Beatrice Bilò
Secretary: Franziska Ruëff
Members who actively contributed to the last studies: Aberer Werner, Birnbaum Joëlle, Bodzenta-Lukaszyk Anna, Bonifazi Floriano, Bucher Christoph, Campi Paolo, Darsow Ulf, Egger Cornelia, Haeberli Gabrielle, Hawranek Thomas, Körner Michael, Kucharewicz Iwona, Lang Roland, Müller Ulrich, Przybilla Bernhard, Quercia Oliviero, Reider Norbert, Severino Maurizio, Sticherling Michael, Sturm Gunter, Wüthrich Brunello

Related current European projects
Recently, a large prospective observational study was executed by the Interest Group on Insect Venom Hypersensitivity. The study was performed in 14 European departments specialised on the diagnosis and treatment of allergic diseases. The Tryptase in Hymenoptera Venom Allergy Study (TIHVA) examined risk factors for severe sting reactions and for significant side effects during VIT. These parts of the study have been submitted for publication. A third part of the study is still ongoing. This aspect aims to examine the outcome of VIT by analysing sting reactions in patients on and after VIT.

Other scientific activities
Proposals of Task forces
• Task force “Sting challenge test”. We intend to update the position paper (Ruëff F, Przybilla B, Müller U, Mosbech H. The sting challenge test in Hymenoptera venom allergy. Allergy. Allergy 1996; 51:216-225). Those who are interested in an active contribution please contact Franziska Ruëff (This email address is being protected from spambots. You need JavaScript enabled to view it.).
• Task force “Self medication of anaphylactic reactions”. We intend to update the position paper (Müller U, Mosbech H, Blaauw P, Dreborg S.

Planned studies

• Venom immunotherapy despite contraindication (beta-Blocker, ACE-inhibitors, malignant or autoimmune diseases). Those who are interested in an active contribution please contact Franziska Ruëff (This email address is being protected from spambots. You need JavaScript enabled to view it.

• Protective effect of VIT after treatment stop. Prospective observational multi-centre study. Those who are interested in an active contribution please contact M. Beatrice Biló (This email address is being protected from spambots. You need JavaScript enabled to view it.

Related events
Past congresses
The XXVII EAACI Congress took place in Barcelona last June and embraced numerous sessions in the field of Hymenoptera Venom Allergy: Post Graduate Courses, Breakfast seminars, Workshop and Oral Communications Sessions.

Upcoming congresses
The XXVIII EAACI Congress will take place from June 6 – 10, 2009, in Warsaw, Poland. Numerous Insect Venom Allergy events are included in the programme, such as:

Saturday, 6 June 2009: Post Graduate Course
• Prevalence of Hymenoptera venom allergy in the general population.
• Cross-reactivity between plant and insect glycoproteins.
• Improving the diagnosis of venom allergy.
• Mechanisms of venom immunotherapy protection.
• Discontinuing venom immunotherapy.
• Recombinant allergens and insect venom hypersensitivity.

Sunday, 7 June 2009: Venom Hypersensitivity Interest Group – Business Meeting and Session
Pro & Con – Prolonging Interval between VIT Injections: is it safe and effective?

Monday, 8 June 2009: Workshop: What’s new in Venom Hypersensitivity
• Cardiovascular diseases and insect sting anaphylaxis.
• Mast cell diseases and insect sting allergy.
• Venom immunotherapy in Hymenoptera venom allergic patients with immunologic diseases and neoplasms.

Monday, 9 June and Tuesday, 8 June: Oral Communication Sessions, and Poster Presentation sessions

Wednesday, 10 June 2009: Pro & Con session
IgE Negative Anaphylaxis after Hymenoptera Stings: Does it Really Exist?

World Allergy Congress. December 06 –10, 2009, Buenos Aires, Argentina
Main topics: Epidemiology of Venom Anaphylaxis, Regional aspects of Venom Allergy, Venom immunotherapy in Clinical Practice, VIT with recombinant compounds.

Allergy School in Ancona (Italy). September 3 – 6, 2009
This is the 1st EAACI & GA2LEN Allergy School in Hymenoptera Venom Allergy. The aim of this Allergy School is to educate young physicians from all over the Europe who are interested in the diagnosis and treatment of children and adults with Hymenoptera venom allergy. The
Course will include lectures, which communicate basic and advanced knowledge (epidemiology, risk factors, frequent and rare clinical manifestations, diagnostics, indication for treatment, procedure of treatment, efficacy, duration of treatment), interactive practical demonstrations (entomology of Hymenoptera, skin tests and ultra-rush immunotherapy) and discussion of difficult clinical cases.

**Must read recent Journal Articles**

   This study demonstrates that venom immunotherapy is effective to treat IgE-mediated Hymenoptera anaphylaxis in patients with mastocytosis. According to the authors, VIT use is recommended despite a relatively high risk of adverse reactions during the build-up phase, because VIT provides protection from anaphylaxis in around 3/4 of the patients.

The results of this study suggest that dialyzed venom may improve the ability of skin tests to detect yellow jacket allergy.

In patients with hymenoptera venom allergy, diagnostic tests are often positive for honey bee and Vespula venom causing problems in the selection of venoms for immunotherapy. The possibility to detect IgE-antibodies which correspond to species-specific recombinant major allergens (Api m1 for bee venom and Ves v5 for Vespula venom) may improve the diagnosis.

This study shows that honeybee SLIT reduces the extent of LLRs, with a good safety profile. According to the authors, this proof-of-concept study suggests that SLIT deserves further investigation in hymenoptera allergy, and that trials involving systemic reactions and dose-ranging studies are needed.
This letter expresses the position of the Interest Group of the EAACI on Hymenoptera venom allergy with respect to the potential use of sublingual immunotherapy in the field of venom allergy, for which an effective and safe subcutaneous form of immunotherapy is already available.

This study suggests that there is not an association between ACE-I use and increased frequency of systemic reactions to venom immunotherapy.

A comprehensive review of the epidemiology, natural history and risk factors of insect-venom allergy, focusing on the recent research on these aspects of Hymenoptera-sting anaphylactic reactions.

This study underlines that currently there is considerable variation in the diagnosis and management of hymenoptera venom allergy in the United Kingdom, demonstrating that the current international guidelines for the diagnosis and management of hymenoptera venom allergy are not being followed by UK allergy practitioners.

44 of 379 consecutive patients (11.6 %) with systemic sting reactions had increased baseline serum tryptase levels (>11.4 µg/l). Bone marrow biopsy was performed in 34 subjects with increased trypitase level. The diagnosis was indolent systemic mastocytosis in 21 (61.7%) of 34 subjects and monoclonal MC activation syndrome in 9 (26.5%) of 34 subjects. Thus, 5.5 % of consecutive patients with insect sting anaphylaxis were identified to have systemic mastocytosis.

10. Oude Elberink JN, van der Heide S, Guyatt GH, Dubois AE. Immunotherapy improves health-related quality of life of adult patients with dermal reactions following yellow jacket stings. Clin
Exp Allergy. 2009 Apr 2. Epub ahead of print

This study underlines that venom immunotherapy results in a clinically significant improvement of health-related quality of life (HRQL) in most patients with reactions limited to the skin following yellow jacket stings. Prescription of an EpiPen in patients not choosing this treatment is associated with deterioration in HRQL and should therefore be avoided as definitive treatment in these patients.