



4-years observational study of patients with honey bee venom allergy treated by venom immunotherapy

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INTRODUCTION:

Honey bee (HB) sting is one of the most frequent causes of anaphylaxis and venom immunotherapy (VIT) is the only causative treatment. Changes in levels of specific IgE and IgG4 against HB venom or its major allergen Api m1 (PLA2) and changes in activation of basophiles after stimulation by HB venom are expected during VIT and may reflect the reactivity of the organism to this therapy.

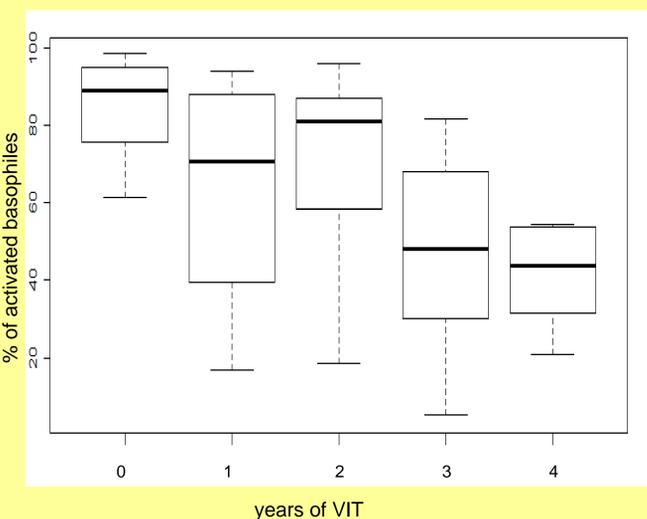
METHODS:

We followed a group of 33 patients with proven allergy to HB venom who undergo VIT (Alutard SQ, ALK-Abello) since 2006. The indication of VIT was based on their clinical history, results of skin tests and positivity of specific IgE. Before VIT and after each year of treatment we examined specific IgE and IgG4 against HB venom (UniCap, Phadia) and rApi m1 (Uni Cap, Phadia; ELISA), basophile activation test (BAT) at concentrations 1.0 and 0.1 $\mu\text{g/ml}$ of HB venom. We recorded information about HB field stings and consequent clinical reactions. For statistical evaluation of changes in followed parameters Wilcoxon paired test and T-test were used.

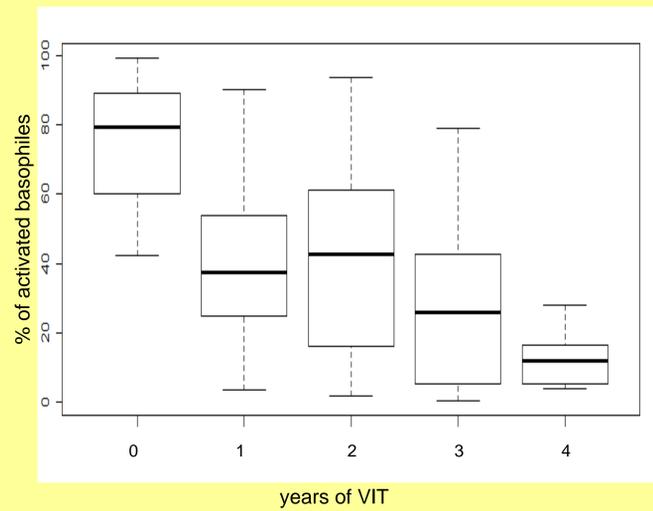
RESULTS:

We observed a significant decrease in the percentage of activated basophiles at concentrations 1.0 as well as 0.1 $\mu\text{g/ml}$ of HB venom (before therapy median 89.61% resp. 79.49%), already after the 1st (70.63 resp. 37.40), 2nd (80.53 resp. 42.61), and more profound decrease after the 3rd (48.20 resp. 25.90) and 4th year of VIT (43.9 resp. 11.90).

BAT HB venom 1,0 $\mu\text{g/ml}$

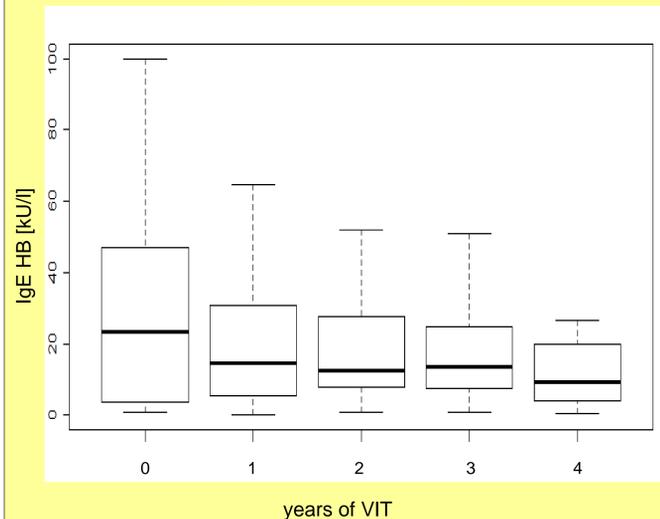


BAT HB venom 0,1 $\mu\text{g/ml}$



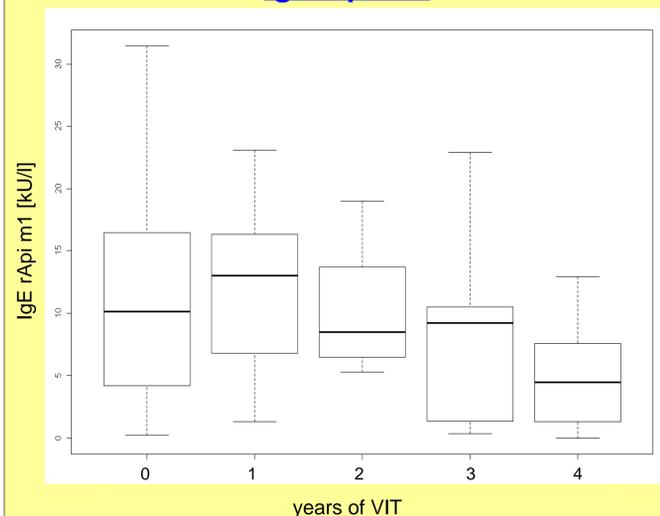
We observed also significant decrease in specific IgE against HB venom (before therapy median 23.30 kU/l) after the 2nd (12.25), 3rd (13.40) and 4th year of VIT (9.37).

IgE HB venom



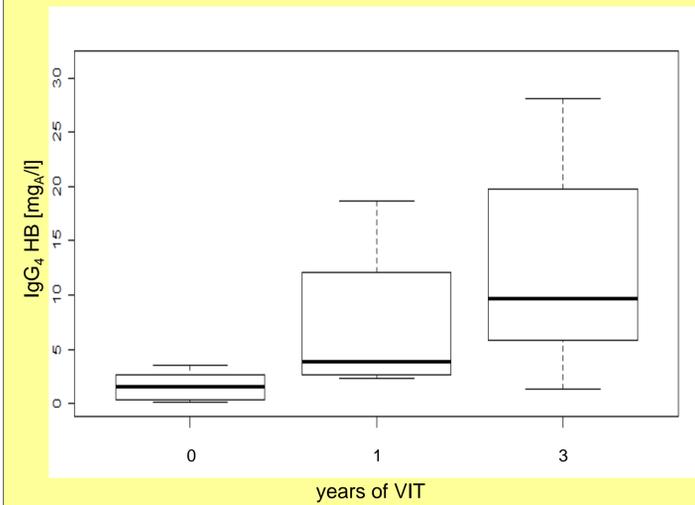
Significant decrease was found also in IgE against rApi m1 (before therapy median 10.28 kU/l) but only after the 4th year of VIT (4.48).

IgE rApi m1



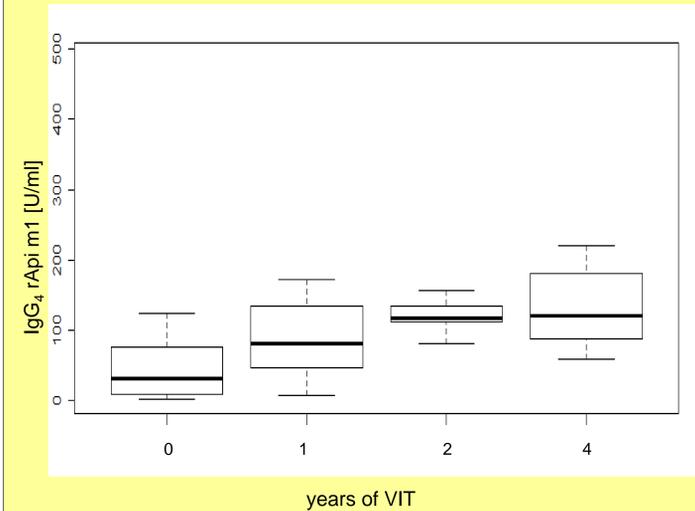
We observed significant increase in IgG4 against HB venom (before therapy median 1.55 mg_A/l) after the 1st (3.85) and 3rd year of VIT (9.85).

IgG4 HB venom



Increase in IgG4 against rApi m1 (before therapy median 31.15 U/ml) after the 1st (81.10), 2nd (118.0) and 4th year of VIT (120.43) was also significant.

IgG4 rApi m1



CONCLUSION:

We confirmed the expected changes in levels of specific antibodies during VIT in our group of patients. We showed also the decrease in activation of basophiles after stimulation by HB venom, changes being more pronounced if the lower concentration of HB venom was used (0.1 $\mu\text{g/ml}$). Due to low number of patients with field stings (all without reaction) during or after VIT, we could not demonstrate any difference between these patients and patients who were not stung or patients who suffered from severe reaction after sting. The observation of the group continues.

References:

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