In vitro basophil activation using CD63 expression in patients with bee and wasp venom allergy.

Abstract: The diagnosis of insect venom allergy and the indication for specific immunotherapy is based on history, skin tests and demonstration of hymenoptera venom-specific IgE-antibodies. Cellular tests can add useful information but the role of basophil activation tests for the different venoms has to be elucidated further. We evaluated positive reactions in a basophil activation test using CD63 expression as marker independently for bee or wasp venom in patients with hymenoptera allergy. Fifty-seven patients with a history of insect venom anaphylaxis were examined (12 x bee venom, 39 x wasp venom, 6 x bee plus wasp venom). Skin tests and determination of specific IgE-antibodies were performed. Basophil activation test (BAT) using CD63 expression was performed after stimulation with different concentrations of bee and wasp venom. The BAT is based on double staining with anti-IgE antibodies and anti-CD63 and subsequent determination of the percentage of activated basophils by flow cytometry. In patients with bee venom allergy, BAT was positive in 100% to bee venom and 75% to wasp venom. In patients with bee and wasp venom allergy, positive reactions for both venoms were found in 100%. In patients with wasp venom allergy, 97% reacted positive to wasp venom and only 56% to bee venom. These results show the reliability of the basophil activation test as a cellular
test in the in vitro diagnosis in patients with bee and wasp venom allergy. They also show that positive reactions in the basophil activation test reflect both sensitization status and cross-reactivity between venom species.

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