Comparison of basophil activation tests using CD63 or CD203c expression in patients with insect venom allergy.

BACKGROUND: Flow cytometric basophil activation tests have been developed as cellular tests for in vitro diagnosis of IgE-mediated reactions. Different activation markers (CD63 or CD203c) with distinct ways of regulation have been used after stimulation with various allergens.

OBJECTIVE: It was the aim of the present study to compare basophil activation tests by measuring both CD63 and CD203c upregulation in patients with insect venom allergy.

MATERIALS AND METHODS: 43 patients with a history of insect venom anaphylaxis were examined. A careful allergy history was taken, and skin tests and determination of specific IgE-antibodies were performed. Basophil activation tests (BAT) using CD63 or CD203c expression were done after stimulation with different concentrations of bee and wasp venom extracts. 25 healthy subjects with negative history of insect venom allergy were studied as controls.

RESULTS: The CD203c protocol showed a slightly higher sensitivity than the CD63 protocol (97% vs. 89%) with regard to patients’ history. The magnitude of basophil response was higher with CD203c in comparison to CD63 for both insect venoms. Specificity was 100% for the CD63 protocol and 89% for the CD203c protocol with regard to controls with negative history and negative RAST.

CONCLUSION: These results support the reliability of basophil activation tests using either CD63 or CD203c as
cellular tests in the in vitro diagnosis of patients with bee or wasp venom allergy with a slightly higher sensitivity for the CD203c protocol.