

Letter to the editor

Predicting side-effects in venom immunotherapy by basophil activation: basophil sensitivity vs maximal response

Eberlein-König et al. (1) reported re-evaluation of their recently published data (2) on basophil activation with CD63 in 57 patients with hymenoptera allergy, in which they re-calculated the basophil 0.1/1 sensitivity ratio (3) and controlled for side-effects during the first week of immunotherapy. The 0.1/1 sensitivity ratio in 14 patients with side-effects was 81.4% and in 43 patients without side-effects was 75.4%. They found no significant difference between those two groups.

Our recent approach (3) was directed to evaluate basophil sensitivity to allergen-specific *in vitro* stimulation. Therefore, we calculated the ratio of basophil CD63 expression between a value on the plateau of the dose-response curve and a value on the steep part of the curve. The ratio between those two selected allergen concentrations (in our method 0.1 and 1 µg/ml, i.e. 0.1/1

sensitivity ratio) was representing the shift of the increasing dose-dependent basophil activation curve (median response at 0.1 was 50% of the response at 1). Of course, even more accurate approaches to measuring basophil sensitivity to the allergen exist, like concentrations giving 50% of maximum CD63 upregulation, as described in the article by Nopp et al. (4).

Obviously, in the article of Eberlein-König et al. the allergen concentration of 0.1 µg/ml was close to the plateau of the dose-response curve. Eberlein-König used the 'BASOTEST' method (Orpegen Pharma) and ALK allergens. For 'BASOTEST', Erdmann et al. (5) showed even slightly higher mean basophil CD63 response at 0.1 than at 1 µg/ml of venom concentration in 50 wasp allergic patients. For that reason, re-calculations of Eberlein-König probably better represent basophil maximal response

(ratio at the top of dose-response) than basophil sensitivity. Another reason which precludes direct comparison of results at certain allergen concentrations was the method used for gating basophils. Eberlein-König used anti-IgE and we used CD123 and HLA-DR as markers of basophils.

MacGlashan (6) showed that basophil sensitivity is an independent intrinsic property which does not correlate with maximal response. Therefore, sensitivity measured by a basophil activation test should be specifically evaluated for each clinical and/or research application.

P. Korosec, M. Kosnik
Laboratory of Clinical Immunology &
Molecular Genetics, University Clinic of
Respiratory and Allergic Diseases, Golnik
36, Golnik 4204, Slovenia

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