Skin prick test and development of tolerance in children with egg allergy
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Aim: The aim of our study was to examine whether the loss of positive skin prick test (SPT) reactions to egg white or egg yolk predicted the development of spontaneous clinical tolerance in children with egg allergy.

Method: We recruited children with egg allergy, as positive oral food challenge with egg (OFC) or suggestive history and positive SPT reactions to yolk egg and/or egg white. All children underwent SPTs with egg white and yolk extracts. Children whose SPT results to both egg white and egg yolk became negative during follow-up were included in group 1, those with persistent positive SPT results in group 2. The acquisition of tolerance to hen’s egg was ascertained by open OFC in both groups with escalating doses every 20 minutes of hard-boiled egg. The adverse reactions were considered immediate when they appeared within 2 hours and delayed after 2 hours. In case of negative TPO, the egg was administered at home for 4 days, with control of any adverse reactions. In case of unclear symptoms to TPO, it was performed a double-blind test, placebo-controlled trial.

Results: Seventy-five egg-allergic children (44 males), aged 3-78 months, were enrolled. Among them 23 were assigned to group 1 (negative SPT to yolk and egg white) and 52 in group 2 (positive SPT for yolk and/or egg white). In group 1, a child (4.3%) experienced positive OFC, in group 2, 13 children (25%) did not pass OFC (p < 0.03). In all cases manifestations were immediate, most frequently cutaneous (78%). Persistence of positive SPT was significantly associated with allergic symptoms (atopic dermatitis, ocularrhinitis, other food allergies). There was no correlation between persistence of positive SPT, age at first or last egg reaction, time interval between the last clinical response and OFC, time interval between the first and last SPT performance, type of symptoms. The diagnostic accuracy of SPT showed best results for sensitivity (0.92) and negative predictive value (0.95).

Conclusion: Children with egg allergy are more likely to tolerate the egg in case of negative SPT, compared to subjects with persistently positive SPT. So, loss of positive SPT may be a predictive marker of tolerance and reduce the need for OFC. However, 1 of 23 children with negative SPT had reactions during OFC (4%). Larger population studies are therefore needed to examine possible mild reactions at OFC in case of negative SPT.