STUDY POPULATION. A double-blind, randomized placebo-controlled study of 55 children, 5 to 11 years of age, sensitive to egg, with 40 receiving OIT and 15 placebo.

METHODS. Initial dose escalation and buildup, maintenance phases up to 2 g of egg protein (one-third egg). This was followed by an oral food challenge with egg white powder at 10 months and 22 months. Children who successfully passed the challenge at 22 months discontinued OIT and avoided egg consumption for 4 to 6 weeks. At 24 months, these children had oral food challenge with egg powder and a cooked egg to test for unresponsiveness.

RESULTS. After 10 months of therapy, none of the children who received placebo and 55% of those who received OIT passed an oral food challenge of up to 5 g of egg protein and were considered desensitized. At 22 months, 75% of children in the OIT group were desensitized and tolerated up to 10 g of egg protein. In the OIT group, 28% passed the oral food challenge at 24 months and were considered to have sustained unresponsiveness. At 30 to 36 months, all children who had passed the oral food challenge at 24 months were consuming egg without restrictions.

CONCLUSIONS. This study shows that OIT can desensitize a high proportion of children with egg allergy and induce sustained unresponsiveness.

REVIEWER COMMENTS. This landmark study shows that desensitization, an increased threshold while on daily treatment, to egg protein can be achieved in most patients with a 1% rate of more than mild reactions during OIT. Having 28% achieve sustained unresponsiveness off daily treatment is encouraging, but more studies are needed to determine if this observation reflects a treatment “cure” or natural course of the allergy. Overall, this study provides a step forward to help patients with significant egg sensitivity to not only ensure safety but also allow ingestion of egg protein.

Sublingual Immunotherapy for Peanut Allergy: A Randomized, Double-Blind, Placebo-Controlled Multicenter Trial


PURPOSE OF THE STUDY. To determine the safety and efficacy of sublingual immunotherapy (SLIT) for inducing desensitization in subjects with peanut allergy.

STUDY POPULATION. The study population consisted of 40 subjects (ages 12–37 years) from 5 US sites with peanut allergy defined by clinical history or physician diagnosis, positive skin-prick test or peanut-specific immunoglobulin E (Pn-IgE; ≥0.35 kU/L), and a positive double-blind, placebo-controlled oral food challenge (OFC) to ≤2 g of peanut powder. Patients with a history of severe anaphylaxis to peanut were excluded.

METHODS. Subjects were randomly assigned 1:1 to peanut (Pn) or placebo (Pb) SLIT groups. Subjects started with an initial daily SLIT dose (peanut = 0.000165 μg), with dose escalation every 2 weeks up to a maximum dose of 1386 μg. A 5-g OFC to peanut powder (2.5 g of peanut protein) was conducted at week 44. Subjects in the Pb-SLIT group crossed over to high-dose-peanut SLIT (3696-μg target dose) and received a 5-g OFC after 44 weeks, whereas Pn-SLIT subjects continued dosing until a 10-g OFC at 68 weeks. Responders were defined as those able to consume 5 g of peanut powder or a 10-fold increase over baseline OFC. Total IgE levels, Pn-IgE, Pn-immunoglobulin G4 (IgG4), and basophil activation were monitored at baseline and during the study.

RESULTS. Subjects in the Pn-SLIT group showed a significantly higher response at 44 weeks compared with those in the Pb-SLIT group (70% vs 15%, respectively; P < .001), with a successfully consumed dose (SCD) that was higher in the Pn-SLIT group compared with the Pb-SLIT group (371 vs 21 mg, respectively; P = .01). After 68 weeks of Pn-SLIT, the median SCD further increased to 996 mg (P = .05). The median SCD in the week 44 crossover OFC was higher than baseline (603 vs 71 mg; P = .02). From baseline to week 44, 99.4% of the placebo group was symptom-free compared with 59.9% of the Pn-SLIT group. Pn-IgE and Pn-IgG4 in the Pn-SLIT group increased between baseline and week 44 only (P = .035). No statistical difference in Pn-IgE or Pn-IgG4 was found at week 44 between Pb-SLIT and Pn-SLIT, Pn-SLIT responders and non-responders, or the crossover high-dose group and the Pn-SLIT group. Basophil activation was significantly lower in the Pn-SLIT group compared with the Pb-SLIT group. The Pn-SLIT responders showed a reduction in skin-prick test compared with nonresponders at week 44 (P = .03).

CONCLUSIONS. This study reveals a significant effect of Pn-SLIT in inducing desensitization. During 10,885 doses of Pn-SLIT, 95.3% of subjects were symptom-free at week 44 when oropharyngeal symptoms were excluded.

REVIEWER COMMENTS. This was the first multicenter, randomized, placebo-controlled trial to examine SLIT in peanut-allergic subjects. This trial demonstrates a significant degree of desensitization in peanut-allergic subjects by using a treatment with a low side-effect profile. Whereas there are limitations highlighted in this study, this is an important development in therapy for peanut allergies that necessitates further investigation.
Effect of Oral Immunotherapy to Peanut on Food-Specific Quality of Life


PURPOSE OF THE STUDY. The purpose of this study was to evaluate the effect of peanut oral immunotherapy on food-specific quality of life.

STUDY POPULATION. The study enrolled 100 children, 5 to 18 years of age, with suspected or known peanut allergy based on history, elevated specific immunoglobulin E to peanut, and skin testing. If a subject did not meet inclusion criteria (eg, skin-prick wheal ≤7 mm, no anaphylaxis, reaction more than 1 year ago, or peanut immunoglobulin E <15), a single blind food challenge was performed to confirm allergy before enrollment.

METHODS. A desensitization protocol was performed starting with 0.1 mg of peanut protein and doubling in the amount given every 30 minutes to a maximum of 6 mg on day 1 (maximum cumulative dose of 12 mg). On day 2, subjects returned and were given the maximum tolerated dose from the previous day. If tolerated, subjects were discharged with instructions to continue this daily dosing at home. Subjects returned every 2 weeks for increases in daily dosing to a maximum of 450 mg per day. Food allergy quality of life questionnaires were given to the parents of the youngest subjects, as well as subjects 8 to 12 years old, and adolescents 13 to 18 years old on entry to the study, and again when maintenance dosing was achieved.

RESULTS. A total of 90 subjects reached a maintenance dose of 450 mg peanut protein per day (equal to 3 peanut M&Ms) and completed pre- and postdesensitization quality of life questionnaires. Excluded were 3 subjects still advancing to maintenance at the time of publication, and 7 who dropped out during the build-up phase (4 of them had gastrointestinal symptoms). There was significant improvement in the following areas of the quality of life by questionnaire: allergen avoidance, dietary restriction, risk of accidental exposure, food-related anxiety, and social and dietary limitations. Emotional impact was not noted to have a significant difference in the adolescents’ survey, but was significant in the other age groups. Furthermore, quality of life was significantly improved for the youngest group (with parents filling out the questionnaire), as well as for the early teen (8–12) and adolescent groups filling out their own questionnaires.

CONCLUSIONS. The results of this study showed that there is an improvement in the quality of life in children and adolescents with peanut allergy after desensitization.

Frequent Baked Egg Ingestion Was Not Associated With Change in Rate of Decline in Egg Skin-Prick Test in Children With Challenge-Confirmed Egg Allergy


PURPOSE OF THE STUDY. To determine if the natural history of egg allergy would be altered by the frequent ingestion of baked egg in food challenge–confirmed egg-allergic children.

STUDY POPULATION. A retrospective clinical cohort study of 125 children from the Department of Allergy and Immunology, Royal Children’s Hospital, Victoria, Australia, was completed. Participants from 1996 to 2005 with challenge-proven egg allergy were included, providing they had at least 2 egg skin-prick tests performed within this period.

METHODS. A telephone questionnaire was conducted to assess the frequency of baked egg ingestion as follows: (1) frequent (more than once per week), (2) regular (more than once every 3 months, up to once per week or less), or (3) strict avoidance (once every 3 months or less). A multiple linear regression analysis, adjusting for possible confounders, was used to examine the relationship between frequency of baked egg ingestion and the rate of decline in egg skin-prick test size.

RESULTS. The mean rate of decline in egg skin-prick test size in all children was 0.7 mm per year (95% confidence interval [CI] 0.5–1.0 mm per year). The frequency of baked egg ingestion did not affect the rate of decline in egg skin-prick test size (P = .57). Individual results for each group were as follows: frequent ingestion (n = 21, mean 0.4 mm per year, 95% CI 0.3–1.2 mm per year), regular ingestion (n = 37, mean 0.9 mm per year, 95% CI 0.4–1.4 mm per year), and strict avoidance (n = 67, mean 0.7 mm per year, 95% CI 0.4–1.1 mm per year).

CONCLUSIONS. Frequent baked egg ingestion was not associated with a different rate of decline in egg skin-prick test compared with strict avoidance in egg-allergic children.

REVIEWER COMMENTS. This study shows the psychosocial impact that peanut desensitization can make in the lives of children with peanut allergy. The authors are forthcoming in pointing out that the desensitized population was not compared with a matched, nondesensitized group and further research is warranted.
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