

Randomised controlled trial

Early introduction of peanut to infants at high allergic risk can reduce peanut allergy at age 5 years

10.1136/ebmed-2015-110201

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Commentary on: Du Toit G, Roberts G, Sayre PH, *et al.*, LEAP Study Team. Randomized trial of peanut consumption in infants at risk for peanut allergy. *N Engl J Med* 2015;372:803–13.

Context

Peanut allergy has tripled among children in the USA; now affecting over 1%.¹ The reason for this increase is unknown. Ingestion of a potential allergen should induce oral tolerance. One theory suggests environmental exposure to food, through an impaired skin barrier such as eczema, could provoke allergy if the food is not being ingested.² The authors of this study previously observed a rate of peanut allergy 10-fold higher among Jewish children in the UK compared with Jewish children in Israel.³ The notable difference is the virtual lack of peanut ingestion among infants in the UK compared with modest consumption in Israeli infants. The authors hypothesised that early introduction of peanut to high risk infants could prevent peanut allergy.

Methods

Potential participants in this randomised trial were infants aged 4–11 months at high risk for developing peanut allergy as defined by having severe eczema, egg allergy or both. Infants were skin tested with peanut and those with large wheal responses (over 4 mm) were excluded on the assumption they were already allergic to peanut. Two cohorts were identified: those with negative peanut skin tests (not sensitised) and those with skin test wheals 1–4 mm (sensitised). Infants were randomised 1:1 for avoidance or early consumption (6 g peanut protein/week). Initial ingestion was under physician supervision. The primary outcome was peanut allergy at 5 years, determined primarily by medically supervised feeding tests.

Findings

The study randomised 640 infants; 542 were not sensitised to peanut at enrolment. Among the non-sensitised cohort, 13.7% in the avoidance group and 1.9% in the consumption group had peanut allergy at age 5 years ($p<0.001$), an 86% reduction. In the sensitised group, the corresponding rates were 35.3% and 10.6%, respectively ($p=0.004$), a 70% reduction. Overall, those randomised to early ingestion experienced a relative risk reduction of 80% with a number needed to treat of 7. Seven

of 319 infants randomised to consumption reacted at their initial supervised feeding.

Commentary

This landmark study suggests that early introduction of peanut to infants at risk can significantly reduce the rate of peanut allergy. The results are potentially so impactful that a 'Consensus Communication'⁴ was released from 10 professional medical organisations/societies that essentially advises that infants living in countries with a higher prevalence of peanut allergy, and meeting criteria similar to that of the trial, undergo allergy testing and supervised peanut feeding, essentially mimicking the study. There are caveats, however, in translating this study to practice. Allergy skin testing and medically supervised feeding requires expertise. Serum peanut allergy tests, more widely available, were evaluated in the study but were misleading compared to skin tests. Peanuts and peanut butter are choking hazards for infants, so caution is needed in selecting appropriate foods. The study advised a specific high rate of peanut protein consumption and adherence was excellent. It is unknown yet if discontinuation of peanut unmasks an allergy in some infants and there are no data to address alternate doses, the necessary length of treatment or risks of sporadic feeding. More research is needed to know if the principle of early introduction should be applied to other foods or different risk groups. Forthcoming guidance from expert panels convened by the National Institute of Allergy and Infectious Diseases and others is expected in early 2016 to address generalising this approach to other foods and lower risk populations.

Implications for practice

Currently, expert guidance does not suggest delaying introduction of food allergens, peanut included, from otherwise healthy infants.^{5 6} This study clearly suggests that infants already showing signs of atopic disease, as described in the study, could benefit from evaluation by an allergist, or physician trained in management of allergic diseases in this age group to diagnose current food allergy and implement early feeding of peanut, if possible.⁴

Competing interests None declared.

Provenance and peer review Commissioned; internally peer reviewed.

References

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