

SUPPLEMENTARY INFORMATION

Low frequency of soya allergy in peanut-allergic children: relevance to allergen labelling on medicines

Nandinee Patel,¹ Marta Vazquez-Ortiz,¹ Sarah Lindsley,¹ Dianne E. Campbell,² Paul J. Turner^{1,2}

¹Section of Paediatrics, Imperial College London, London, UK

²Discipline of Child and Adolescent Health, University of Sydney, Sydney, NSW 2145, Australia

Corresponding author:

Dr Paul Turner

Section of Paediatrics (Allergy & Immunology)

Imperial College London

Norfolk Place

London, W2 1PG

United Kingdom

Phone: +44 20 3312 7754

Email: p.turner@imperial.ac.uk

SHORT TITLE: Soya allergy in peanut-allergic children

SUPPLEMENTARY METHODS

We assessed peanut and soya allergy in young people (age 8-16 years) undergoing screening for enrolment in a single-centre, open label, randomised study examining oral peanut immunotherapy (the BOPI study, Clinical Trials.gov identifier NCT02149719). A requirement of the study protocol was to confirm peanut allergy at in-hospital DBPCFC; the challenge matrix used to blind peanut was soya-based, therefore all participants underwent an oral food challenge to soya at screening. The study was approved by the NHS Human Research Authority (reference 15/LO/0287).

Participants

Participants with a diagnosis of peanut allergy were recruited from local allergy clinics, and nationally (through a patient support group, the Anaphylaxis Campaign). Informed written consent was obtained from the parent/guardian, together with written assent from the young person.

Participants were excluded if they had a clinically significant chronic illness (other than asthma, eczema, or allergic rhinitis); current use of anti-IgE therapy; on immunosuppression, beta-blockers, or ACE-inhibitors; poorly controlled asthma within the previous 3 months; or a previous intensive care admission for management of anaphylaxis. Participants with a prior history of anaphylaxis (not requiring intensive care) were not excluded.

Procedures

Skin prick testing (SPT) was performed to commercially available extracts of peanut, soya and birch pollen (ALK-Abello, Hørsholm, Denmark) using single-point lancets, according to national guidelines. Histamine (10 mg/mL, Stallergenes, UK) was used as a positive control. A positive SPT was defined as a wheal size of at least 3 mm greater than a saline control read at 15 min. Total and allergen-specific IgE was measured with the ImmunoCap system (Thermo Fisher, Uppsala, Sweden).

DBPCFC were conducted according international PRACTALL consensus criteria.²⁰ Prior to peanut DBPCFC, participants underwent an open challenge to roasted soya (WOW butter, Hilton Whole Grain Millers Ltd, Canada), to a cumulative of 4.1 g soya protein. Participants experiencing symptoms at the open soya challenge underwent a DBPCFC to roasted soya, to confirm clinical reactivity. Subjects underwent peanut DBPCFC challenge over two separate days, at least 14 days apart. On each day, subjects received increasing doses, every 30 minutes, of peanut protein (or placebo) at the following doses: 3 mg, 10 mg, 30 mg, 100 mg, 300 mg, 1000 mg and 3000 mg until stopping criteria were met (as per PRACTALL consensus). The order of DBPCFC challenges was determined by a computer-generated randomisation table (<http://www.randomization.com>). All members of the research team were blinded as to the challenge assignment, aside from the technician preparing the challenge material.

Table S1: Characteristics of the 2 patients allergic to both peanut and soya

	Patient 1	Patient 2
Age (years)	13.8	10.3
Gender	Female	Female
Pollen Food Allergy Syndrome	No	No
Allergic Rhinitis	No	Yes
Sensitisation on birch pollen on SPT	3	5
Known allergy to another legume	No	No
Peanut		
• Prior dietary exposure	Previous anaphylaxis	Local reaction only
• Mean Skin Prick Test (mm)	11	10
• IgE to Peanut IgE (kUA/L)	>100	>100
• IgE to Ara h 1 (kUA/L)	34.8	>100
• IgE to Ara h 2 (kUA/L)	96.5	>100
• IgE to Ara h 3 (kUA/L)	43.5	79.3
• IgE to Ara h 8 (kUA/L)	<0.1	6.14
• Eliciting Dose at DBPCFC (mg protein)	443	3
• Anaphylaxis at DBPCFC	No	No
Soya		
• Prior dietary exposure	No prior reaction to soya Tolerated soya yoghurt, soya milk Not avoiding soya in diet	No prior reaction to soya Not avoiding soya in diet
• Mean Skin Prick Test (mm)	3	3
• Soya IgE (kUA/L)	12.2	30.7
• IgE to Gly m 4 (kUA/L)	<0.1	6.13
• Eliciting Dose at DBPCFC (mg protein)	1000	1000
• Anaphylaxis at challenge	No	No