NUT FPIES – An increasing phenomenon

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Introduction

Food protein induced enterocolitis syndrome (FPIES) is a non-IgE mediated food allergy. The syndrome, typically presenting in infants, is characterised by delayed profuse vomiting (1-4 hours after a newly introduced food), and is often associated with pallor and floppiness. The most common triggers include grains (rice and oats), cow's milk and egg. Peanuts, although a common cause of IgE mediated allergy, rarely triggers FPIES. In an Australian population based study of 230 children, rice/oats accounted for 54% of FPIES cases , whilst peanut only triggered a single case (0.4%)[1]. At Epworth Allergy Specialists, we have noted a recent rise in referrals of children with peanut FPIES.

Aims

To describe the characteristics of a cohort of 10 infants with nut FPIES referred to Epworth Allergy Specialist's, Melbourne, over a 12 months period.

Methodology

All infants were referred to Epworth Allergy Specialists, and fulfilled the International Consensus diagnostic criteria for FPIES.

Following ethics approval, parents were contacted by phone to collect relevant demographic, clinical and laboratory (skin prick test and/or serum specific IgE, ssIgE) information .

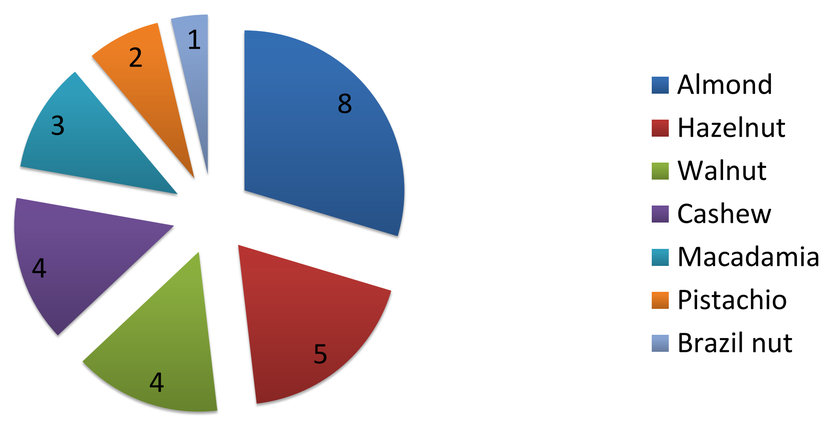
Results

- 10 infants with nut FPIES (9 peanut, 1 hazelnut) were identified over a 12 month period (Table 1)
- 7 were male, all were < 12 months of age at their initial reaction, and had a family history of atopy (4 had siblings and none had had FPIES)
- Eczema was common, but concomitant IgE mediated food allergy (to egg/peanut) occurred in only one infant (with hazelnut FPIES)
- 8 children had had at least two FPIES reactions to the triggering nut (7 with peanut, 1 hazelnut)
- 4 children with peanut FPIES had had FPIES to one other food (rice/oats n=1, avocado n=1, banana n=1, fish n=1)
- 9 had a negative SPT/ssIgE to triggering nut (8 peanut, 1 hazelnut); one child did not have allergy testing at the time of diagnosis.
- No child had had FPIES or an IgE mediated reaction to another introduced nut (Figure 1). Of those with peanut FPIES all had at least one other treenut introduced without reaction (8 tolerated almond, 5 hazelnut, 4 walnut, 4 cashew, 3 macadamia, 2 pistachio and 1 brazil nut). The child with hazelnut FPIES has tolerated peanut, almond, brazil and pistachio.
- No child has yet had a food challenge the triggering nut to ascertain tolerance

Table 1: Characteristics of infants with nut FPIES n=10)

Characteristics	Number
Sex: Male, female	7, 3
Term at birth	10
Born vaginally	10
Ever breastfed	9
Family history of atopy	10
Atopy at time of initial reaction - Eczema - IgE mediated food allergy	 6 1
FPIES to another food	4
Negative SPT/ssIgE to trigger nut	9 (*1 did not have testing)

Figure 1: Treenuts introduced and tolerated in those with peanut FPIES (n=9)



Conclusions

- We report 10 cases of nut FPIES referred to our Allergy clinic over a 12 month period.
- All infants were < 12 months of age at presentation, 4 had had FPIES to another food, whilst co-associated IgE mediated food allergy was rare. No child had had FPIES to another introduced nut, with all having had at least one other nut introduced and tolerated.
- One Australian population based study only reported a single case of peanut FPIES over 2 years (2012-2014)[1]. In contrast we report 10 cases from a single institution over 12 months. The LEAP study, published a year later, found early introduction of peanut (between the ages 4-11 months) reduced the risk of subsequent IgE mediated peanut allergy[2]. Since the publication of this study, Australian Clinical Society of Clinical Immunology and Allergy, and International Allergy bodies, changed their feeding guidelines, actively promoting the early introduction of nuts in infants < 12 months of age. Thus one potential reason for rise in peanut FPIES, is the shift towards early nut introduction by the the early promotion of peanut into the diet of infants.
- Further research into this cohort will be conducted to better understand their rate of IgE mediated transformation and tolerance.

References:
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2. Toit Du G, Roberts G, Sayre PH, et al. Identifying infants at high risk of peanut allergy: the Learning Early About Peanut Allergy (LEAP) screening study. J Allergy Clin Immunol. 2013 Jan;131(1):135–43.e1–12.