Sublingual Immunotherapy for Peanut Allergy

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Rationale

Food Allergy Prevalence

- Food allergy affects 8% of US children[1] and prevalence increasing[2]
- Approximately 40% of food allergic children in the US have suffered at least one severe food-induced reaction[1]
- Treatment options for allergic children are limited
- Standard practice for individuals with food allergy is to avoid their allergen at all costs[3]
  - Invoking food restrictions
  - Impacting the daily lives and well-being of both children and adults

Sublingual Immunotherapy Protocol

- Clinic treats patients with environmental and food allergy with sublingual immunotherapy standard protocol
- Treatment consists of threshold dose of allergen adjusted to dilution based on skin/blood test results
- Doses self-administered 3 times/day via metered-dose pump bottle
- Treatment contains all allergens to which patient is sensitized to address total load

Study Objective

The objective of this study was to describe the clinical and caregiver-reported outcomes for pediatric patients with peanut allergy undergoing SLIT between 2006 and 2015.

Research Methodology

- 121 pediatric patients with peanut allergy included in clinical record review
- Between ages of 2-18 with ≥3 peanut specific IgE (PsIgE) values between 2006-2015
- Caregiver surveys distributed to all included families through clinic's patient portal
- Survey examines accidental exposure to allergen, Quality of life, and experience with SLIT since beginning treatment
- Clinical and survey results analyzed for trends

Results

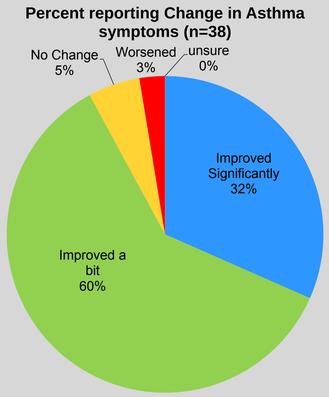
Retrospective Chart Review

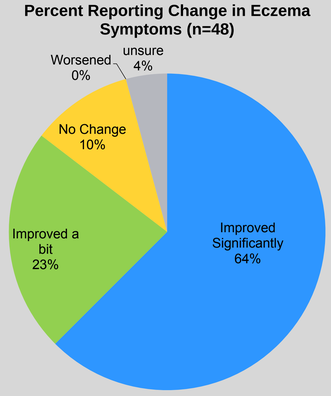
- Patients ranged from 2-18 yrs old (Mean age = 8.5) were predominantly male (63%) and White (80%).
- Mean PsIgE at baseline was 95.67 (SD =140.35)
- Positive results for Peanut Ara h 2 (≥0.35) seen in 93% of patients
- 45% of patients showed decrease in PsIgE over course of analysis
  - Of those who decreased mean overall drop was 42.2kU/L (SD= 57.38).

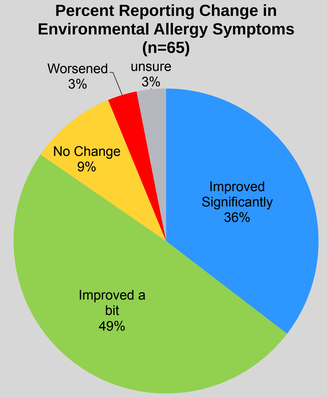
Survey Respondents

- 73 patients responded to the survey (60% response rate)
  - 88% self-reported severe peanut allergy
- 22 respondents reported accidental exposures since beginning SLIT (31%)
  - 13.6% of accidental exposures treated with epinephrine
  - 27% of accidental exposures resulted in ED visits
  - 0 hospitalizations or ICU admissions
- Daily compliance reported by 92%
- Resistance to taking the drops from children was minimal (81% report none & 15% report occasional)

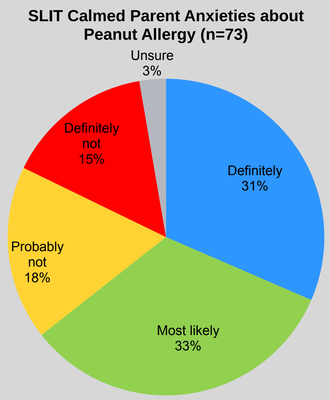
Comorbidities

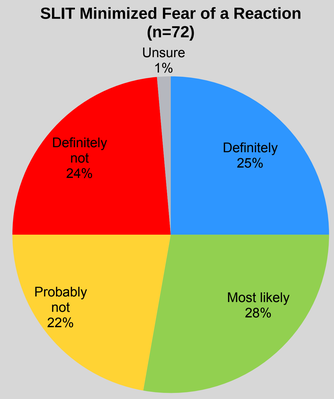


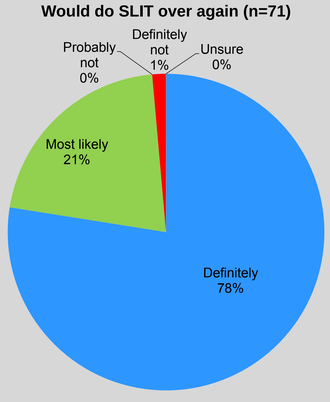




Quality of Life







Conclusions and Future Directions

Conclusions

- SLIT is a potentially beneficial treatment for children with food allergy
- Less invasive and more feasible than other currently available treatments
  - Caregivers reported high level of adherence
  - Caregivers reported high level of satisfaction with treatment and improvement in comorbidities and quality of life
- Almost all participants would undergo treatment again

Future Directions

- Examine trends in lab values over the course of treatment associations between survey responses and clinical data
- Associations may indicate ideal candidates for successful SLIT treatment for peanut allergy
- Second study in progress to examine SLIT treatment of other food allergens
- Expand clinic capabilities to allow food challenges and conduct RCT with SLIT protocol

Limitations

- Patient population is predominantly white and not nationally representative
- Clinic not set up to perform food challenges to determine baseline or acquired tolerance

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References

1. Gupta RS, Springston EE, Warrier MR, et al. The prevalence, severity, and distribution of childhood food allergy in the United States. Pediatrics. 2011;128:e9-e17.
2. Branum, A. M. and S. L. Lukacs (2009). "Food Allergy Among Children in the United States." Pediatrics 124(6): 1549-1555.
3. Boyce JA, Assa'ad A, Burks AW, et al. Guidelines for the diagnosis and management of food allergy in the United States: report of the NIAID-sponsored expert panel. J Allergy Clin Immunol. 2010;126(6 suppl):S1-S58