

Clinical Communications

Parent report of food allergy management by pediatricians and allergists

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Clinical Implications

- This assessment of parental report of food allergy management from pediatricians and allergists illustrates that although parents trust their physicians, they do not recall all guideline recommendations being followed. We suggest possible ways to improve communication of management guidelines to patients.

TO THE EDITOR:

Childhood food allergy is a serious and growing health problem¹ affecting 8% of children in the United States.² Patient-physician relationship, communication, and guideline-directed management are critical to keep children with food allergies safe.³ Management based on the National Institute of Allergy and Infectious Diseases guidelines involves making an accurate diagnosis, prescribing medications including epinephrine auto-injectors (EAs), explaining how and when to use medications, and counseling.³ With recent changes in guidelines, physician food allergy knowledge, beliefs, and practice style may play a role in patient care. The goal of this study was to describe the experiences of parents of food-allergic children with management by both pediatricians and allergists.

METHODS

The 859 families included in this study were enrolled in the Children's Memorial Hospital Food Allergy Questionnaire. Eligible families for this study had at least 1 child with a food allergy. The Institutional Review Board of the Children's Memorial Hospital approved the study protocol. Food allergy status was determined by a previously validated method for evaluating clinical reaction history, specific IgE, and skin prick testing.⁴ To assess parents' satisfaction with care and the delivery of care from pediatricians and allergists, research staff administered a structured interview to each parent. Parents reported on physicians explaining when and how to use an EA, providing a written emergency care plan, and discussing long-term management. We describe the frequency of reported satisfaction with care and guideline steps followed. Multiple regression models adjusted for clustering within families and were used to investigate associations between child and respondent characteristics and reported management steps.

RESULTS

Respondent characteristics are reported in Table I. Peanut allergy was the most commonly reported food allergy, affecting 403 children (47%), followed by milk (38%), egg (29%), and

tree nut (19%) allergies. Of children with a food allergy, 71% experienced a severe allergic reaction.

Parents reported the quality of their health care to be very positive (Table II). Almost all parents felt that they were treated with courtesy and respect by their child's pediatrician (97%) and allergist (93%). Parents also felt that their children's pediatricians (96%) and allergists (93%) listened to their questions and concerns. Nearly all parents felt that their pediatrician (89%) and allergist (92%) showed respect for what they had to say about their child's food allergies. Parents also reported that their child's pediatrician (75%) and allergist (91%) explained food allergy in a way they could understand. Similarly, parents reported that their pediatrician (76%) and allergist (83%) showed concern for the impact of their child's food allergy on their family.

According to parent report, in the previous 6 months 68% of allergists and 37% of pediatricians explained when to use epinephrine. Only 47% of allergists and 20% of pediatricians explained how to use epinephrine. Parents reported that 56% of allergists and 24% of pediatricians provided a written emergency health care plan. Meanwhile, parents reported that 59% of allergists and 26% of pediatricians discussed the long-term management or prognosis of their child's food allergies.

After adjusting for subject characteristics, there was a significant association between the increasing age of children and the decreasing odds of parents reporting that allergists explained when and how to use epinephrine. Parents of children with egg and milk allergy had lower odds of reporting that their pediatricians explained when or how to use epinephrine than did parents of children with peanut allergies. Additional regression results are presented in Table E1 in this article's Online Repository at www.jaci-inpractice.org.

DISCUSSION

This study is the first to assess the parental perception of care for food allergy in a large sample of parents. Parents reported the quality of their health care to be very positive. However, parents reported that many allergists and pediatricians had not explained the essential steps of when and how to use EAs. Not all physicians prescribe epinephrine for all food allergy diagnoses. Previous research shows that recommendations to decide which patients to prescribe EAs are subjective and some clinicians feel that EAs are not always required.⁵ Recent research has shown that many pediatricians are not adequately trained on how to use EAs and do not feel comfortable showing patients how to use the devices.⁶

Providing families with an individualized written emergency action plan is a crucial step in the management of food allergy.³ In our study, one-third of the parents reported that their allergists and two-thirds reported that their pediatricians did not provide an action plan. Although it is possible that physicians may have provided an action plan or training at a previous visit, it is critical that at each visit training in EA use and action plans are updated.⁷ Although pediatricians might be relying on allergists to deliver these steps, with the rise in food allergies, guidelines recommend that pediatricians conduct these steps and not rely solely on the allergist.^{3,7}

TABLE I. Sociodemographic factors

Characteristic	n	%
All	859	
Age (y) (n = 859)		
0-1	98	11.4
2-5	412	48.0
6-10	249	29.0
11-13	63	7.3
14-20	37	4.3
Sex (n = 859)		
Female	308	35.9
Male	551	64.1
Race/ethnicity (n = 859)		
Non-Hispanic white	657	76.5
Non-Hispanic black	29	3.4
Hispanic	80	9.3
Asian	21	2.4
Other	72	8.4
Family structure (n = 859)		
Married	812	94.5
Single	47	5.5
Number of siblings (n = 859)		
0	216	25.2
1	445	51.8
2	164	19.1
>3	34	4.0
Family history of food allergy (n = 859)		
Mother affected	163	19.1
Father affected	162	19.2
Sibling affected	122	13.2
Household income (\$) (n = 859)		
<50K	59	6.9
50K-99K	235	27.4
≥100 K	531	61.8
Don't know	34	4.0
Education of mother (n = 858)		
No college	31	3.6
Some college	82	9.6
College degree	406	47.3
Graduate degree	262	30.5
Postgraduate	77	9.0
Education of father (n = 848)		
No college	40	4.7
Some college	75	8.8
College degree	374	44.1
Graduate degree	259	30.5
Postgraduate	100	11.8
History of severe allergic reaction (n = 859)		
No	247	28.8
Yes	612	71.3
Type of food allergy (n = 859)		
Peanut	403	46.9
Milk	325	37.8
Egg	245	28.5
Tree nut	165	19.2
Fish	20	2.3
Shellfish	20	2.3
Wheat	39	4.5
Soy	46	5.4
Seed	45	5.2
Other	145	11.0

TABLE II. Parent-reported health care quality (within the last 6 mo)

	Allergist		Pediatrician	
	No. of parents responding	%	No. of parents responding	%
Parents with children with food allergy report				
Treated with courtesy and respect	739	93.4	853	96.8
Listened carefully	715	93.0	849	96.1
Treated your view with respect	719	91.7	834	89.3
Concerned for impact on life	738	82.7	872	75.7
Explained food allergy	715	90.6	843	75.3
Explained when to use epinephrine	810	68.1	950	36.9
Explained how to use epinephrine	812	47.0	904	19.8
Provided a written plan	824	55.8	906	23.7
Explained long-term prognosis	863	58.7	946	25.8

Parents of children with milk and egg allergies in our study were significantly less likely to report that their pediatricians explained when and how to use epinephrine. This may indicate that pediatricians see peanut as an increased risk for anaphylactic reaction over other foods. However, although older studies often recommended a prescription of epinephrine for a food allergy only if there was a history of anaphylaxis, recent guidelines suggest prescribing an EA to all individuals with IgE-mediated food allergy.^{3,7} It is critical for families with children with any confirmed food allergy to carry 2 EAs and to know how to administer epinephrine.^{3,7}

Although physicians may follow guidelines for the management of chronic conditions, families may not receive the message. The concept of teach-back, asking patients to restate the information presented, has been emphasized in clinical settings to improve patient comprehension and recall of messages from their clinicians.⁸ In addition to teach-back and improved communication, implementation of a clinical decision support tool integrated into the electronic health record has been shown to improve disease management.⁹ These methods may allow physicians to more closely follow the National Institute of Allergy and Infectious Diseases guidelines and improve care. With our understanding of food allergy and anaphylaxis constantly evolving, guidelines and recommendations for how and when to give epinephrine and the need for an action plan need to be reinforced by physicians.

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TABLE E1. Logistic regression of parent report of food allergy management steps*

Characteristic	OR (95% CI)							
	When to use epinephrine (pediatrician)	When to use epinephrine (allergist)	How to use epinephrine (pediatrician)	How to use epinephrine (allergist)	Gave action plan (pediatrician)	Gave action plan (allergist)	Prognosis (pediatrician)	Prognosis (allergist)
Type of food allergy								
Peanut	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Tree nut	0.99 (0.70-1.41)	0.99 (0.66-1.53)	0.96 (0.61-1.50)	1.11 (0.76-1.62)	1.20 (0.83-1.75)	0.97 (0.66-1.42)	0.95 (0.65-1.38)	0.93 (0.65-1.32)
Milk	0.69† (0.52-0.91)	0.67‡ (0.49-0.92)	0.61† (0.42-0.88)	0.64† (0.47-0.86)	0.72‡ (0.52-0.99)	0.76 (0.56-1.02)	0.73 (0.54-1.00)	0.87 (0.65-1.16)
Egg	0.75‡ (0.56-1.00)	0.83 (0.60-1.16)	0.52† (0.35-0.80)	0.67‡ (0.49-0.91)	0.94 (0.66-1.34)	0.94 (0.690-1.27)	0.96 (0.69-1.34)	0.93 (0.70-1.23)
Other food allergies	0.70 (0.47-1.03)	0.85 (0.57-1.29)	0.71 (0.42-1.19)	0.70 (0.48-1.03)	1.02 (0.67-1.53)	0.98 (0.66-1.42)	0.73 (0.47-1.12)	0.91 (0.64-1.28)
Age (y)								
0-1	1.06 (0.68-1.66)	1.70‡ (1.01-2.86)	1.51 (0.89-2.54)	2.94§ (1.85-4.68)	0.55 (0.30-1.02)	1.31 (0.83-2.07)	1.28 (0.80-2.04)	1.15 (0.76-1.76)
2-5	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
6-10	0.77 (0.57-1.05)	0.54§ (0.38-0.77)	0.59‡ (0.39-0.90)	0.64† (0.45-0.89)	1.55 (1.10-2.18)	1.26 (0.91-1.74)	1.13 (0.81-1.59)	0.89 (0.66-1.21)
11-13	0.77 (0.45-1.38)	0.39† (0.21-0.71)	0.86 (0.46-1.60)	0.53‡ (0.31-0.92)	1.90‡ (1.10-3.27)	0.66 (0.37-1.17)	1.55 (0.89-2.72)	1.10 (0.61-1.98)
≥14	0.47 (0.21-1.05)	0.27§ (0.12-0.57)	0.26‡ (0.08-0.88)	0.31‡ (0.12-0.78)	2.01 (0.99-4.10)	0.63 (0.29-1.38)	1.15 (0.54-2.47)	0.54 (0.26-1.09)
History of severe reaction								
Mild	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Severe	1.16 (0.85-1.54)	1.24 (0.88-1.74)	1.20 (0.83-1.76)	1.16 (0.84-1.60)	1.32 (0.93-1.88)	0.99 (0.72-1.36)	1.48‡ (1.04-2.09)	1.12 (0.82-1.51)
Parent								
Father	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Mother	0.59§ (0.47-0.74)	1.35‡ (1.04-1.76)	0.47§ (0.35-0.63)	1.11 (0.88-1.41)	1.03 (0.76-1.39)	2.12§ (1.68-2.69)	0.48§ (0.36-0.62)	0.92 (0.72-1.17)
Race/ethnicity								
Non-Hispanic white/ Asian/other	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
Black	1.22 (0.48-2.75)	0.50 (0.20-1.28)	2.41 (0.97-5.98)	1.24 (0.49-3.13)	1.50 (0.72-3.12)	0.56 (0.23-1.40)	2.80* (1.18-6.59)	0.90 (0.34-2.36)
Hispanic	1.20 (0.77-1.86)	0.99 (0.61-1.61)	1.70‡ (1.02-2.82)	1.78‡ (1.10-2.88)	1.27 (0.77-2.07)	0.99 (0.61-1.61)	1.24 (0.76-2.01)	0.97 (0.63-1.51)
Household income (\$)								
<50K	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
50K-99K	0.64 (0.35-1.17)	0.91 (0.45-1.82)	0.56 (0.27-1.14)	0.72 (0.38-1.35)	0.62 (0.34-1.13)	1.21 (0.65-2.22)	0.61 (0.32-1.13)	1.30 (0.77-2.20)
≥100K	0.63 (0.35-1.13)	0.92 (0.47-1.77)	0.45‡ (0.22-0.89)	0.85 (0.47-1.56)	0.46† (0.26-0.80)	1.29 (0.73-2.29)	0.55 (0.30-1.00)	1.52 (0.92-2.50)
Don't know	0.93 (0.37-2.32)	1.35 (0.48-3.85)	1.30 (0.46-3.71)	1.37 (0.49-3.82)	0.95 (0.41-2.18)	1.48 (0.62-3.53)	0.80 (0.32-2.00)	0.94 (0.45-1.97)

Ref, Reference.

*Odds ratios from logistic regression models control for type of food allergy, age, history of severe reaction, parent responding, race/ethnicity, and household income of family.

†Odds ratio with significance at the $P \leq 0.01$ level.‡Odds ratio with significance at the $P \leq 0.05$ level.§Odds ratio with significance at the $P \leq 0.001$ level