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Exploring barriers to commercial peanut oral immunotherapy treatment during COVID-19

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Clinical Implications

Expanding real-world access to peanut oral immunotherapy through a US Food and Drug Administration–approved approach may be primarily limited by challenges inherent in peanut oral immunotherapy, including time commitment and lifestyle modifications.

Among children in the United States, the prevalence of peanut allergy has continued to rise and contributes substantially to the mortality and morbidity associated with food allergies.[1-3] Although the standard of care for peanut allergy is strict allergen avoidance in addition to early use of rescue medications, accidental ingestions often occur and can result in severe allergic reactions across the life span.[4,5] Despite significant patient and caregiver motivation to reduce the risk for these accidental reactions, treatment options for peanut allergy have not been widely accessible until recently.[6]

On January 31, 2020, the first food allergy treatment, a biologic drug used in peanut oral immunotherapy (OIT) (Palforzia, Aimmune Therapeutics, Brisbane Calif), was approved by the US Food and Drug Administration (FDA).[7] Palforzia offers protection to peanut-allergic patients by producing desensitization and modulation of the immune response to peanut protein.[8] In addition, the use of Palforzia has been associated with improvement in patient-reported quality of life.[8] However, it is well-recognized that Palforzia also involves burdens common to OIT, including daily dosing and required lifestyle modifications.

This new therapy represents a paradigm shift in peanut allergy treatment because it is scalable and creates opportunities for more patients to access peanut OIT. Further research is needed to understand how this treatment translates into real-world clinical practice. Most studies about caregiver knowledge, preferences, and expectations of treatment were conducted in highly selected populations participating in clinical trials, or in community-based settings that used non–FDA-approved approaches to OIT.[9] We performed a qualitative study to identify barriers to initiating Palforzia treatment perceived by real-world patients and caregivers in our academic pediatric allergy clinic.

Before the anticipated FDA approval of Palforzia, we created a peanut OIT waiting list to capture all families who expressed interest in therapy during a routine clinic visit. After Palforzia's approval and the resumption of clinic operations amidst the COVID-19 pandemic, we contacted all 67 established patients on the waiting list from June 2020 to January 2021. An electronic Research Electronic Data Capture survey was sent to each guardian by e-mail, and the guardian was provided the American College of Allergy, Asthma, and Immunology's shared decision-making (SDM) tool regarding Palforzia for review. After reviewing this document, the guardian had the opportunity to decline therapy before being contacted for a consult and to document the reason for declining. The survey listed six reasons for declining, including potential cost, safety concerns, too many office visits, comfortable with avoidance and did not see the benefit of treatment, already receiving peanut OIT elsewhere, or the child was allergic to multiple foods; there was also an "other" option and a free text box available to outline the rationale for declining. All remaining families were then contacted to schedule an hour-long in-person consultation to discuss benefits, risks, alternatives, and therapy requirements to answer all questions and facilitate SDM before starting therapy. Whereas a few chose to opt out through the survey, data presented here were primarily collected through direct verbal communication between the caregiver and the provider. Providers followed up after each consult visit to assess readiness to start therapy. If the family declined to schedule a consult or start therapy, the guardian was asked an open-ended question regarding the reason for declining and the provider recorded the response. The authors reviewed all qualitative answers and sorted them into general thematic categories.

TABLE I. Patient demographics in clinical peanut oral immunotherapy program

Characteristic	Initial waiting list (n = 67)	Active therapy (n = 12)
Sex, n (%)		
Male	35 (52)	8 (66)
Female	32 (47)	4 (33)
Age group, y (n [%])		
3-7	35 (52)	8 (66)
8-11	15 (22)	1 (8)
12-16	15 (22)	2 (16)
17-19	2 (3)	1 (8)
Race, n (%)		
Asian	4 (5)	0
Black	15 (22)	0
White	48 (71)	12 (100)
Insurance coverage, n (%)		
Private insurance	56 (83.5)	12 (100)
Medicaid or state insurance plan	9 (13.5)	0
Tricare	1 (1.5)	0
Self-pay	1 (1.5)	0

Table I lists patient demographics. For patients on the peanut OIT waiting list, including those who ultimately elected to begin therapy, most were White (48 [71%] and 12 [100%], respectively) and held private insurance (56 [83.5%] and 12 [100%], respectively). Figure 1 shows the disposition of the 67 patients contacted. Nineteen declined therapy before consult (28%) and 32 completed consults (48%); of these 32 patients, 12 began therapy (18%) and 15 declined therapy (22%) after consult. In addition, two were referred for a peanut oral food challenge after the consult; both passed the challenge. One was ineligible to start therapy owing to a medical comorbidity (uncontrolled asthma),

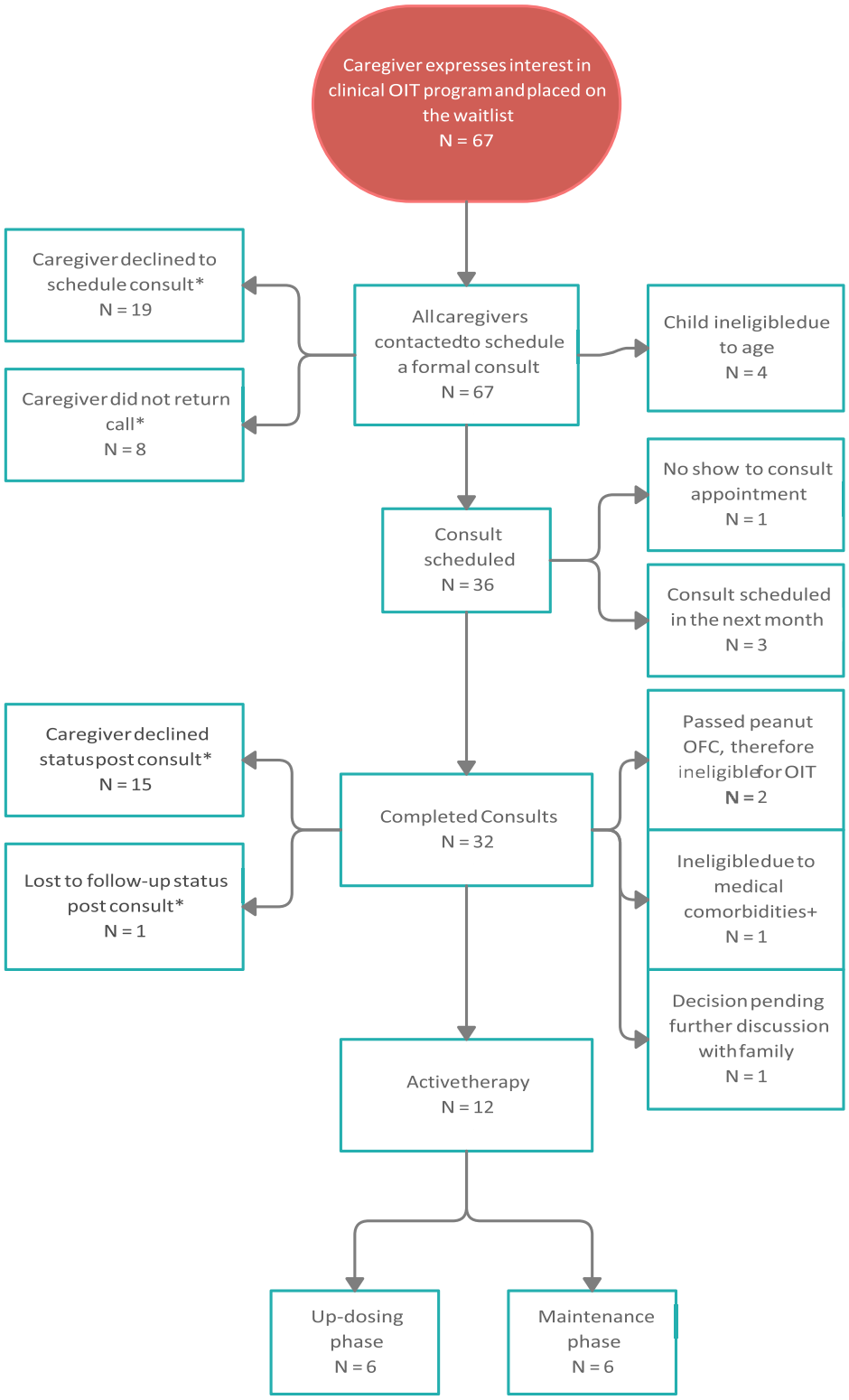

FIGURE 1. Medical comorbidity that excluded patient participation in oral immunotherapy: uncontrolled asthma. * indicates Figure E1.

one was lost to follow-up after consult, and one remained undecided after consult. Of the 16 remaining patients, at the time of this writing, three were scheduled for future consults; eight had not returned multiple phone calls, one did not show up for the consult visit, and four were ineligible owing to their age. As shown in Figure E1 (in this article's Online Repository at www.jaci-inpractice.org), the most common rationales for declining therapy before and after consult, respectively, were the time

burden associated with therapy and the daily lifestyle modifications required to dose safely. In total, 35 of 67 patients declined therapy (52%), citing the primary barriers of time burden (10 [28.5%]), lifestyle modifications (nine [25%]), multiple food allergies (three [8.5%]), COVID-19 concerns (three [8.5%]), family circumstances (eg, pregnancy, relocation) (three [8.5%]), previous peanut OIT failures at an outside practice (two [6%]), anxiety (two [6%]), safety concerns (one [3%]), cost of therapy (one [3%]), and unknown (lost to follow up after consult) (one [3%]).

Over half of the waiting list population declined therapy; structural issues inherent in OIT dosing, such as lifestyle modifications and the time burden associated with therapy, were the most common reasons for patients to decline. This has important implications for SDM in the general population, because these considerations are intrinsic to therapy and generally inflexible. We dosed the first patient with Palforzia on March 13, 2020, 2 days after the World Health Organization declared SARS-CoV-2 to be a global pandemic. As such, these data represent some of the earliest known insights into how the pandemic has affected the rollout of commercial OIT treatment programs. Interestingly, we observed that few families reported the pandemic to be a reason for declining treatment. However, COVID-19 concerns may be underreported in this population, because families with such concerns may have chosen not to engage with our team at this time. Anxiety or other mental health concerns were also not widely cited as a reason for declining, although this may also be underreported owing to stigma. Additional limitations of this quality improvement project include delivery of the survey to caregivers directly by the provider, which may inadvertently have influenced respondents' answers; the single-site and academic setting of the project; preselection of participants through a clinic waiting list; skewing of the population toward White race and private insurance; and loss to follow-up.

The practice of OIT continues to grow, and the widespread availability of a highly effective, reimbursable standardized product will continue to shape the evolving standard of care. As these trends continue, access to OIT will increasingly include the general population of food allergy patients, which may differ in important ways from the highly motivated and resourced early adopter populations profiled in prior studies. The current data suggest that half or more of patients and families who initially express interest may ultimately decline, and that the lifestyle and time commitments required for OIT may represent more important barriers than safety, mental health concerns, or even the COVID-19 pandemic. Much more work is needed to understand underlying factors that drive treatment decisions in food allergy, and to ensure equitable access regardless of background or income.

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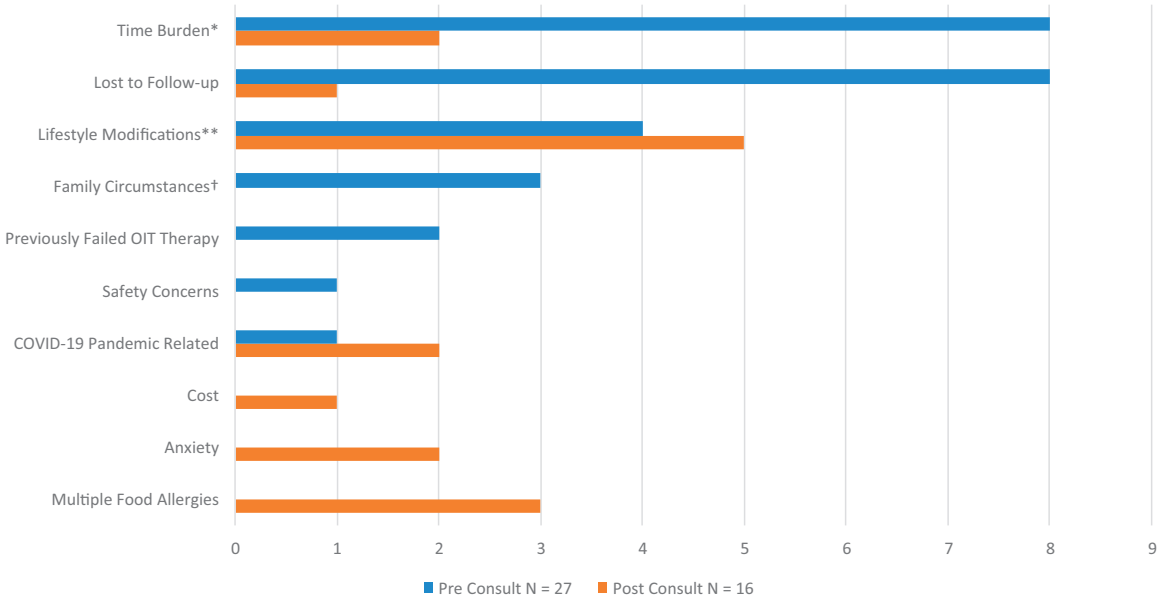

FIGURE E1. Caregiver reported reasons for declining clinical peanut oral immunotherapy (OIT). *Time burden includes travel distance to clinic, number of clinic visits during up-dosing, and therapy considered to be lifelong treatment. **Lifestyle modifications required with therapy include physical activity limitations, daily dosing, dosing with mealtimes, and required observation period. †Family circumstances include one family with plans to relocate and two families with a pregnant caregiver. Both families with a pregnant caregiver expressed that they would reconsider therapy in 1 or 2 years after the arrival of a new sibling.