

➤ DRUG HIGHLIGHT: Emerging Treatments for Peanut Allergies

Much of this article is sourced from an 01/28/2019 document from IPD Analytics, which supports Confidio with timely clinical information. Confidio has updated and added content to reflect recent FDA and manufacturer related news.

Introduction

Several therapeutic approaches to managing peanut allergy are currently being studied, and one has now received FDA approval. These approaches have focused on mitigating the allergic response to peanuts by using peanut extracts administered in various forms and routes of delivery to gradually desensitize patients to peanut allergen. Monoclonal antibodies targeting the antibody-mediated response to peanut allergens are also being studied as monotherapy and in combination with oral immunotherapy.

Incidence / Prevalence of Peanut Allergy

Results from two studies presented at the American College of Allergy, Asthma, & Immunology Scientific Meeting in October 2018 estimated that 2.2% of children and adolescents (approximately 1.25 million) in the United States have a peanut allergy, an approximate increase of 21% since 2010. The study authors also reported increased annual incidence in newborns from 2001 (a rate of 1.7%, 66,000 babies) to 2017 (5.2%, 210,000 babies).

The FDA has stated that only a fifth of children with a peanut allergy will outgrow the allergy.

Current Use of Oral Immunotherapy (OIT) for Food Allergies

Non-FDA approved OIT therapy has been used to treat peanut allergy by a relatively small number of allergists, both in academic and non-academic medical settings. However, due to lack



DRUG HIGHLIGHT: Emerging Treatments for Peanut Allergies

of standardization in OIT treatment and safety concerns, its use has not been widespread. In 2014, the Updated Food Allergy Practice Parameter advised against performing OIT in routine clinical practice, citing inadequate evidence supporting therapeutic benefit over risks of therapy.

Peanut Allergy Drug Approval History and Status

Product	Route of administration	FDA filing status	FDA approval status
AR-101 (Palforzia)/Aimmune	Oral Immunotherapy (OIT)	BLA filed December 2018	Approved January 2020
Viaskin Peanut/DBV	Epicutaneous Immunotherapy (EPIT)	BLA refiled August, 2019*	FDA target action date is August 5, 2020

**The BLA for Viaskin Peanut was resubmitted on August 6, 2019 and comes after the company withdrew a previous BLA in December 2018. The manufacturer pulled the aforementioned BLA when the FDA requested additional data on its manufacturing procedures and quality controls.*

Palforzia AR-101/Aimmune Therapeutics

The US Food and Drug Administration (FDA) has approved the first drug to combat peanut allergy in children (Palforzia, Aimmune Therapeutics), although those who take it must continue to avoid peanuts in their diets. Palforzia is not a cure, but it mitigates allergic reactions (including anaphylaxis) that may occur with accidental exposure to peanuts, the FDA said in a news release.

Treatment with the oral powder, which is mixed into semisolid food, can be started in children aged 4 through 17 years who have a confirmed peanut allergy and then continued as a maintenance medication. The initial dose phase is given on a single day, while up-dosing consists of 11 increasing doses over several months.

If the patient tolerates the first dose of an increased dose level, they may continue that dose daily at home. Daily maintenance begins after the completion of all up-dosing levels.

If the patient does not tolerate the increased dose level, this allergic reaction may lead the patient to discontinue use of the product, or worse, cause a life-threatening reaction called anaphylaxis. In fact, the drug will carry a boxed warning on the risk of anaphylaxis with the drug, and the FDA is requiring a Risk Evaluation and Mitigation Strategy (REMS).

Palforzia will be available only through specially certified healthcare providers, healthcare settings, and pharmacies to patients enrolled in the REMS program, the agency said. Also, the initial dose escalation and first dose of each up dosing level can be given only in a certified setting.



DRUG HIGHLIGHT: Emerging Treatments for Peanut Allergies

Viaskin Peanut / DBV Technologies

Viaskin Peanut is a transdermal patch used to deliver epicutaneous immunotherapy (EPIT).. Unlike OIT, EPIT provides continuous antigen exposure at the same dose rather than gradual dose escalation. The Viaskin Peanut technology delivers peanut allergen protein to specific epidermal dendritic cells (Langerhans cells) which allows for drug delivery directly to lymph nodes without entry to the bloodstream. It is believed that this contributes to a better safety profile for Viaskin Peanut compared with OIT.

Viaskin Peanut is considered a biologic drug, which will impact the approval pathway and potential for future competition (as the competition would need to be in the form of biosimilars, which are much more difficult than generics to develop and market).

Monoclonal Antibody Therapy

Monoclonal antibodies that reduce the antibody-mediated allergic response associated with various food allergies (e.g. tree nuts, peanuts, milk, egg) are an area of current interest. An appealing aspect of monoclonal antibody therapy is that it is non-specific and can potentially reduce the allergic response to multiple food allergies and other associated conditions such as asthma and eczema.

The monoclonal antibody Xolair (omalizumab) was granted Breakthrough Therapy status in August 2018 for the prevention of severe food allergy reactions based on seven trials over the past decade assessing efficacy and safety versus various food allergens such as peanut, milk, and egg. Small trials combining it with OIT have demonstrated improved tolerability of OIT treatment.

Another monoclonal antibody, dupilumab (Dupixent) is being tested in a phase 2 trial in which it is combined with AR-101. This clinical trial is currently ongoing.

Potential Managed Care Considerations

The below are utilization management considerations that Confidio clinicians foresee PBMs will be debating through each PBMs Pharmacy and Therapeutics Committee process.

1. Palforzia and Viaskin Peanut will likely both have appeal based on dosage form preferences, labeling, and efficacy/safety profiles. Palforzia appears to have better efficacy but with a higher incidence of adverse effects. Viaskin Peanut appears to be less effective but safer. Palforzia will be used in patients 4-17 years old while Viaskin Peanut will only be used in patients 4-11
 - a. Require prescribing by or in consultation with an Allergist due to complexity and need for safety monitoring
 - b. Restrict age based on manufacturer labeling



DRUG HIGHLIGHT: Emerging Treatments for Peanut Allergies

years old.

- c. Definitive documentation of a peanut allergy should be required. Although clinical trials required screening using an oral food challenge, plans may want to consider alternative documentation to establish the peanut allergy diagnosis (e.g. clinical history confirmed with IgE levels, skin prick testing).

2. Prior Authorization Considerations

2. Prior Authorization Considerations (*cont.*)

3. Maintenance of the desensitization will require a continuation of the maintenance dose of OIT or EPIT for an indefinite period for most patients. Plans will need to consider whether to cover maintenance therapy for an indefinite period and if so, establish reauthorization timepoints with appropriate criteria for confirming the benefit of ongoing therapy for each patient.

4. Include in coverage policies that coadministration of OIT with a monoclonal antibody (e.g. omalizumab, dupilumab) for purposes of improving tolerability of OIT should be considered investigational until the monoclonal antibody has been clearly shown to be safe and effective for this indication. Real world clinical experience with Palforzia and results from ongoing trials will determine the demand for coadministration of a monoclonal antibody with OIT in the future.

Potential Budget Impact

Aimmune set the list price of Palforzia at \$890 per month, or nearly \$11,000 per year. Since Viaskin Peanut has not been approved by the FDA, pricing has not been established for it, making it difficult to assess budget impact at this time.

Since these are new treatments with potential for long-term use in any patient between 4-17 years old with peanut allergy (approximately 1.25 million patients), there could potentially be a substantial impact on drug budgets. The potential for concurrent use of monoclonal antibodies in the future would potentially add to this impact. From an overall budget perspective, a potential cost offset may be a decrease in the rate of emergency room visits/hospitalizations related to severe peanut allergy reactions. Quality of life measures will also be an important consideration in determining the value of these therapies.

References

1. Andorf S, Purington N, Block WM, et al. Anti-IgE Treatment with oral immunotherapy in multifeed allergic participants: a double-blind, randomized, controlled trial. *The Lancet Gastroenterology & Hepatology*, December 11, 2017
2. Ault A. FDA OKs Palforzia, First Drug for Peanut Allergy in Children. *MedScape*, January 31, 2020. Retrieved on February 7, 2020 from: <https://www.mdedge.com/pediatrics/article/216509/asthma/fda-okays-palforzia-first-drug-peanut-allergy-children>
3. Fleischer, DM, Sussman GL, Begin, P, et al. Effect of epicutaneous immunotherapy on inducing peanut desensitization in peanut-allergic children: Topline peanut epicutaneous immunotherapy efficacy and safety (PEPITES) randomized clinical trial results. *Journal of Allergy and Clinical Immunology*, Vol 141, Issue 2, AB410.
4. Greenhawt MJ, Vickery BP. Allergist-reported trends in the practice of food allergen oral immunotherapy. *J Allergy Clin Immunol Pract*, Vol 3, Number 1.
5. Jiang J, Bushara O, Ponczek J, et al. Updated pediatric peanut allergy prevalence in the United States. *Annals of Allergy, Asthma, and Immunology*, Vol 121, issue 5, suppl, Nov 2018; S14.
6. Lieberman J, Sublett J, Ali Y. Increased incidence and prevalence of peanut allergy in children and adolescents in the United States. *Annals of Allergy, Asthma, and Immunology*, vol 121, issue 5, suppl, Nov 2018; S13.
7. Nowak-Wegrzyn A. Investigational therapies for food allergy: Immunotherapy and nonspecific therapies. In: UpToDate, Sicherer SH, TePas E (Ed), UpToDate, Waltham, MA, 2019
8. Peanut Allergies: Emerging Treatments. IPD Analytics, 1/28/2019.
9. Protocol for: The PALISADE Group of Clinical Investigators. AR101 oral immunotherapy for peanut allergy. *N Engl J Med* 2018; 379:1991-2001.
10. Sampson, H, Aceves S, Bock A, et al. Food Allergy: A practice parameter update – 2014. *J Allergy Clin Immunol*, Vol 134, Number 5.
11. Vickery BP, Vereda A, Casale T, et al. AR101 Oral Immunotherapy for Peanut Allergy. *NEJM*, November 18, 2018
12. Wang JW. Peanut, tree nut, and seed allergy: Diagnosis, In: UpToDate, Sicherer SH, TePas E (Ed), UpToDate, Waltham, MA, 2019.

Confidio
502 Washington Avenue
Suite 450
Towson, MD 21204
443-767-7200

confidio.com