Palforzia™ (peanut [*Arachis hypogaea*] allergen powder-dnfp) – New drug approval

- On January 31, 2020, the FDA announced the approval of Aimmune Therapeutics' Palforzia (peanut [Arachis hypogaea] allergen powder-dnfp), for the mitigation of allergic reactions, including anaphylaxis, that may occur with accidental exposure to peanut. Palforzia is approved for use in patients with a confirmed diagnosis of peanut allergy.

    - Initial dose escalation may be administered to patients aged 4 through 17 years. Up-dosing and maintenance may be continued in patients 4 years of age and older.
    - Palforzia is to be used in conjunction with a peanut-avoidant diet.
    - Palforzia is not indicated for the emergency treatment of allergic reactions, including anaphylaxis.

- Peanut allergy affects approximately 1 million children in the U.S. and only 1 out of 5 of these children will outgrow their allergy. There is no cure for peanut allergy and allergic individuals must strictly avoid exposure to prevent severe and potentially life-threatening reactions. Even with strict avoidance, inadvertent exposures can and do occur.

- Palforzia is the first oral immunotherapy approved for peanut allergy. Palforzia is a powder that is manufactured from defatted peanut flour. With oral immunotherapy, specific allergenic proteins are ingested initially in very small quantities, followed by incrementally increasing amounts, resulting in the ability to mitigate allergic reactions to the allergen over time.

- The efficacy of Palforzia for the mitigation of allergic reactions, including anaphylaxis, was established in a randomized, placebo-controlled study in patients with peanut allergy. The primary analysis population consisted of 496 patients aged 4 through 17 years. After an initial dose escalation ranging from 0.5 mg to 6 mg on day 1 and confirmation of tolerability of the 3 mg dose on day 2, patients underwent up-dosing for 20 to 40 weeks starting at 3 mg until the 300 mg dose was reached. Patients then underwent 24 to 28 weeks of maintenance therapy with 300 mg Palforzia. The primary efficacy endpoint was the proportion of patients who tolerated a dose of at least 600 mg of peanut protein with no more than mild allergy symptoms in an exit food challenge at the end of the maintenance period.

    - At the exit food challenge, 67.2% of patients treated with Palforzia were able to ingest a dose of 600 mg or more of peanut protein, with no more than mild allergy symptoms vs. 4.0% of patients treated with placebo (treatment difference: 63.2%; 95% CI: 53.0, 73.3; $p < 0.0001$).
    - During the exit food challenge, the maximum severity of symptoms was "moderate" in 25.3% of the participants in the Palforzia group vs. 58.9% of those in the placebo group and "severe" in 5.1% and 10.5%, respectively.

- Palforzia carries a boxed warning for anaphylaxis.

- Palforzia is contraindicated in patients with uncontrolled asthma or a history of eosinophilic esophagitis and other eosinophilic gastrointestinal disease.

- Additional warnings and precautions for Palforzia include the Palforzia REMS program, asthma, eosinophilic gastrointestinal disease, and gastrointestinal adverse reactions.

- Palforzia will only be available through specially certified healthcare providers, health care settings, and pharmacies to patients who are enrolled in the Palforzia REMS program.

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  - The FDA is requiring that healthcare providers who prescribe Palforzia - and healthcare settings that dispense and administer Palforzia - are educated on the risk of anaphylaxis associated with its use.
  - In addition, the initial dose escalation phase and first dose of each up-dosing level must only be administered to patients in a certified healthcare setting equipped to monitor patients and to identify and manage anaphylaxis.
  - Patients and their parents or caregivers must also be counseled on the need for the patients to have injectable epinephrine available for immediate use at all times, the need for continued dietary peanut avoidance, and how to recognize the signs and symptoms of anaphylaxis.

- The most common adverse reactions (incidence ≥ 5% and at least 5 percentage points greater than that reported in patients treated with placebo) with Palforzia use were abdominal pain, vomiting, nausea, oral pruritus, oral paresthesia, throat irritation, cough, rhinorrhea, sneezing, throat tightness, wheezing, dyspnea, pruritus, urticaria, anaphylactic reaction, and ear pruritus.

- Palforzia is administered orally. The capsule(s) or sachet are opened and the entire dose of Palforzia powder is emptied onto a few spoonfuls of refrigerated or room temperature semisolid food (eg, applesauce, yogurt, pudding). Treatment with Palforzia is administered in 3 sequential phases: initial dose escalation (single day dose escalation), up-dosing (dose is gradually increased from 3 mg to 300 mg over approximately 6 months), and maintenance (300 mg per day).

  - Refer to the Palforzia drug label for complete dosing and administration recommendations.

- Palforzia will be priced at $890 per month or approximately $11,000 per year.

- Aimmune Therapeutics' launch plans for Palforzia are pending. Palforzia will be available as a powder for oral administration in 0.5 mg 1 mg, 10 mg, 20 mg and 100 mg capsules or 300 mg sachets.