

**Scholarly Dialogs**

**SD1(1-5)**

# Can food allergy be cured?

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## Abstract

Food allergy(FA) is emerging as a global social issue. It is a potentially life threatening condition with a negative impact on quality of life of patients and their families. However, the current standard approach is relegated to the strict avoidance of triggering food(s) and the use of rescue medication in the case an allergic reaction occurs.

Oral Immunotherapy (OIT) represent an effective, active treatment for FA, able to increase the amount of food that the patient can intake without reaction during treatment (i.e desensitization) and reduces the risk of potential of severe allergic reaction in the event of accidental ingestion. The key messages of the Guidelines of the European Academy of Allergy and Clinical Immunology (EAACI) suggest that OIT should be considered for children from around 4-5 years of age with symptoms suggestive of persistent IgE mediated food allergy. Caused by cow's milk, hen's egg or peanut.

Currently, for OIT the use of fresh food or native food is advisable. OIT represents a typical hospital treatment administered by competent personnel i.e doctors and nurses. At present time there are just fresh food or native food available for OIT. During many decades, the supportive management of food allergy consisted of avoidance of offending food and early recognition and treatment of anaphylaxis. Nowadays, looking into this matter, the time is ripe for practice of OIT in selected medical centers and under medical supervision with the goal of improving quality of life of patients and their families.

**Key Words:** Food, Allergy, Immunotherapy

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*This Review article is based on the Lecture in memoriam of Filippo De Luca (1949-2019), MD, Professor of Pediatrics*

## Introduction

Food allergy(FA) is emerging as a global social issue. It is a potentially life threatening condition with a negative impact on quality of life of patients and their families. However, the current standard approach is relegated to the strict avoidance of triggering food(s) and the use of rescue medication in the case an allergic reaction occurs. Notwithstanding, an elimination diet may be difficult and frustrating, in particular for common foods (e.g. milk egg and peanut).

Oral Immunotherapy (OIT) represent an effective, active treatment for FA, able to increase the amount of food that the patient can intake without reaction during treatment (i.e desensitization) and reduces the risk of potential of severe allergic reaction in the event of accidental ingestion, In 2018 for the first time

the European guidelines have stated ,”OIT Can Be recommended as a treatment option to increase the threshold od reaction in children with persistent cow’s milk, egg, or peanut allergy”. For such a promising curative treatment, well designed large studies are awaited in order to meet the current needs.

### **Allergen Immunotherapy for food allergy (FA-AIT).**

AIT for food allergy refers to give to an allergic individual an increasing amount of an allergen (milk, egg, or peanut) in order to reduce symptoms due to the ingestion of previously offending allergic food. The three most frequent methods and routes are oral immunotherapy, sublingual (SLIT), and epicutaneous immunotherapy (EPIT). OIT consists of the immediate swallowing of the food allergen with the administration of increasing amount until it is tolerated at usual dose. OIT has the largest body of evidence among emerging therapy for persistent IgE mediated food allergy. SLIT patients take increased drops of no standardized extract that are placed under the tongue for few minutes and then swallow. SLIT doses are limited. Therefore, this method is safer but less effective than OIT: it may be related to the lack of standardization of available sublingual extract(s). In EPIT an allergen – containing patch is applied to the skin surface of the patients. Currently the results of preliminary studies regarding the safety are encouraging. EPIT offers a good safety profile. However, the prolonged (some days) application of patch containing food could be uncomfortable for patients. Overall, current data showing that efficacy of EPIT for the active treatment of persistentIgE mediated food allergy, still appears lower than what is achieved with OIT.

### **The efficacy of oral Immunotherapy (OIT).**

Efficacy in clinical trials has typically defined by induction of desensitized state. Desensitization refers to the improvement in food challenge outcomes after therapy and relies on ongoing exposure to the allergen. The desensitization’s schedules for milk, egg or peanut had been shown to desensitize up to 80% of patients with IgE mediated food allergy. However, the pivotal clinical issue is represented by the post – desensitization strategy. In fact the development of both immunological tolerance and clinical effectiveness, after successful desensitization with OIT, has not been defined to date. It is assumed that the post desensitization strategy could be different for each food. In other words, patients allergic to milk or egg in whom the natural history of the disease is “per se” favourable, are responders; hence OIT showing long- standing efficacy. On the other hand for patient allergic to peanut od tree nuts with natural history of food allergy less favorable: the therapies in their current form are unlikely to produce long-standing immunologic changes.

### **The need to bridge the gap between active treatment (OIT) and real life issues.**

The key messages of the Guidelines of the European Academy of Allergy and Clinical Immunology (EAACI) suggest that OIT should be considered for children form around 4-5 years of age with

symptoms suggestive of persistent IgE mediated food allergy. Caused by cow's milk, hen's egg or peanut. Currently, for OIT the use of fresh food or native food is advisable. The initial dosage of each increasing dose during build-up phase should be performed in clinical setting. Therefore, OIT represents a typical hospital treatment administered by competent personnel i.e. doctors and nurses. Because the length of the protocol, patients and their families must be extremely compliant, reliable and committed to treatment. In addition, for the fact that some important questions, included the appearance of adverse events during OIT up-dosing regimen, require ongoing study, oral immunotherapy needs to be performed, currently, in clinical setting.

### **The need to bridge the gap between active treatment (OIT) and real life issues.**

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### **Adverse Events**

In all immunotherapy trials safety is of the paramount importance. Mild reactions such as abdominal pain, Throat pruritus, gritty eyes, watery eyes, transient erythema and sneezing, usually do not require stopping desensitization. On the contrary, when rhinitis, dyspnea, asthma, generalized urticarial and hypotension occur alone or in combination OIT should be stopped and reevaluated. Thus far, no fatality has been reported in the literature; some risk factors i.e. physical exercise, infections, menses are known to increase the risk of reaction(s) especially during the maintenance phase of OIT. The appearance of eosinophilic esophagitis (EoE) is reported, however it is quite uncommon. In this context, before starting OIT the individual and familiar clinical history should be negative regarding persistent, severe esophagus and gastrointestinal diseases.

### **Future Developments**

A biologics license application has been submitted to Food & Drug Administration (FDA) at the end of 2018 for standardized OIT peanut products. A similar application has been announced in Europe for European Medicines Agency (EMA). At present time there are just fresh food or native food available

for OIT. During many decades, the supportive management of food allergy consisted of avoidance of offending food and early recognition and treatment of anaphylaxis. Nowadays, looking into this matter, the time is ripe for practice of OIT in selected medical centers and under medical supervision with the goal of improving quality of life of patients and their families. Ultimately, the choice to giving hope and optimism to patient with persistent IgE mediated food allergy, represents in this field a decisive step forward.

**Conflicts of Interest:** There is no potential conflict of interest, and the authors have nothing to disclose. This work was not supported by any grant

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*Communicated and received May 28, 2019 , revised Sept 29, 2019, published on line Nov 11, 2019*