

Oral and Sublingual Immunotherapy in Pediatric Patients

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Abstract and Introduction

Abstract

Purpose of Review: Sublingual immunotherapy is becoming a routine treatment for respiratory allergy in several countries and it has been validated in international documents. This article will review the available literature on oral and sublingual immunotherapy, discussing the possible use of sublingual immunotherapy in paediatric patients.

Recent Findings: As oral immunotherapy was found to be poorly effective in clinical trials, its use has been discontinued. In contrast, several controlled studies have shown the efficacy of sublingual immunotherapy in children with allergic asthma and rhinitis, and a postmarketing survey has confirmed its safety. Moreover, new data on the long-lasting efficacy of this treatment and on the absence of local immunological effects have recently been published.

Summary: The clinical efficacy and the optimal safety profile of sublingual immunotherapy make it a good candidate for treating respiratory allergy in children. Some aspects, such as the dose-response relationship and preventive effect, will be a research challenge for future developments and better definition of indications in children.

Introduction

Allergen-specific immunotherapy, together with drug therapy and allergen avoidance, is a cornerstone in the management of respiratory allergy in both adults and children. At variance with drugs, immunotherapy affects the immunological response towards allergens at its earliest stages,^[1] and therefore it can be regarded as a biological response modifier. This means that immunotherapy can reduce symptoms and the need for rescue medications, but it can also alter to some extent the natural history of allergic disease. This fact has been well demonstrated during the last decade in several experimental studies. In particular, it has been shown that immunotherapy can prevent the inception of new sensitizations^[2, 3] and the onset of asthma in children with allergic rhinitis.^[4*] Furthermore, it was shown that immunotherapy could maintain its clinical efficacy for several years after discontinuation.^[5, 6*] Based on these observations, it is reasonable to regard immunotherapy as a particularly advantageous treatment in paediatric patients. In contrast, the traditional subcutaneous immunotherapy (SCIT) is burdened with the risk for severe adverse events, ranging from asthma and urticaria to anaphylaxis.^[7*] The safety aspect was the major boost for the studies with noninjection or local immunotherapy, in particular those administered orally. The rationale for giving the allergen orally is that the gastrointestinal tract has an abundant mucosal immune system

(gut associated lymphoid tissue) and therefore an effective antigen presentation can be expected.^[8] There are two modalities for administering the allergen orally: the oral route (oral immunotherapy, OIT) and the sublingual route (sublingual immunotherapy, SLIT). With SLIT, the extract is kept under the tongue for 1-2 min and then swallowed (sublingual swallow). whereas in OIT the allergen is immediately swallowed. The common aim of these methods is obviously to improve the safety and make the treatment more acceptable for the patients.

Starting from the mid-1980s, a conspicuous number of controlled studies with OIT and SLIT were published. In 1998, a panel of experts of the World Health Organization,^[9] based on an extensive review of the available literature, concluded that SLIT is a viable alternative to the injection route, at least in adults, whereas OIT proved to be poorly effective. These conclusions were confirmed in a position paper of the European Academy of Allergology and Clinical Immunology.^[10] Subsequently, clinical trials and postmarketing surveillance studies were conducted in paediatric patients, and in 2001 the review on 'Allergic rhinitis and its impact on asthma'^[11]**] extended the indication of SLIT to paediatric patients.

We will review herein the available experimental data concerning the efficacy and safety of OIT and SLIT, with particular attention to paediatric patients.

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