Abstract and Introduction

Abstract

Purpose of review Sublingual immunotherapy (SLIT) is indicated for the use in pediatric patients suffering from allergic rhinitis or allergic rhinoconjunctivitis caused by environmental allergens, such as ragweed pollen, grass pollen, and dust mite. This review focuses on recent and relevant studies associated with the use of SLIT for these allergens in children by examining efficacy, safety, and immunological data in comparison to subcutaneous immunotherapy, therapeutic treatments, and placebo.

Recent findings In several of the case studies examined in this article, involving mainly grass and dust mite allergic patients, SLIT has been shown to have similar efficacy to subcutaneous immunotherapy. SLIT has been proven as a safer therapy. In comparing the adverse events related to both therapies, SLIT has fewer cases of anaphylaxis and fewer incidents of local reactions of mild-to-moderate severity. In comparison to therapeutic treatments and placebo, SLIT significantly improved symptom and medication scores. In addition to allergic rhinitis and allergic rhinoconjunctivitis, additional uses for SLIT in pediatric patients, such as asthma, atopic dermatitis, and food allergies, are under development.

Summary SLIT treatment is a well tolerated and effective approach to treat allergic rhinitis and allergic rhinoconjunctivitis in pediatric patients. Three SLIT tablets are currently approved by the US Food and Drug Administration to treat grass and ragweed allergies. The research discussed in this review will further the knowledge of physicians searching for an alternative treatment for their pediatric patients.

Introduction

Sublingual immunotherapy (SLIT) is a type of specific immunotherapy utilized to treat allergic rhinitis or allergic rhinoconjunctivitis (ARC). SLIT is ideally suited for use in children because it is needleless and convenient (given at home). Over 75 clinical research studies have been performed to prove the clinical efficacy of SLIT with at least 20 of those trials including only children. SLIT has become recognized as
a low-risk, high-benefit option for adults and children suffering from allergic rhinitis or ARC, and more recently, clinical trials have begun to demonstrate efficacy in diseases such as asthma, atopic dermatitis, and food allergies. \[3\] The most-studied SLIT allergens for pediatrics are dust mite and grass. Currently, three nature-based tablets have gained approval by the US Food and Drug Administration (FDA), two grass (Oralair and Grastek) and one ragweed (Ragwitek). \[4\] No SLIT dust mite tablets have been approved in the US. Grastek (Merck Sharp & Dohme Corp. Whitehouse Station, New Jersey, USA) is approved by FDA for individuals 5–65 years old, Oralair (Stallergenes S.A., Antony, France) is approved for individuals 10–65 years old, and Ragwitek (Merck Sharp & Dohme Corp. Whitehouse Station, New Jersey, USA) is approved for individuals 18–65 years old. Twenty-eight research trials conducted from 2009 to 2012 included children. \[4\] SLIT has been proven as a well tolerated therapy for not only adults but also children. \[5\] Specifically, children did not have any more adverse events than adults in any SLIT studies. \[3\] The use, benefit, and safety of SLIT in children and recent, relevant clinical trials, which are presented in \textbf{Table 1} \[6,7–20\] will be discussed.
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