

Subcutaneous Immunotherapy and Sublingual Immunotherapy Comparative Efficacy, Current and Potential Indications, and Warnings—United States Versus Europe

Harold S. Nelson, MD^{a,*}, Melina Makatsori, MD^b,
Moises A. Calderon, MD, PhD^{b,c}

KEYWORDS

• SCIT • SLIT • AIT • Immunotherapy • Allergic rhinitis • Allergic asthma

KEY POINTS

- Both SCIT and SLIT are of proven effectiveness in the treatment of allergic rhinitis and allergic asthma with some evidence that both are helpful in selected patients with atopic dermatitis.
- Both SCIT and SLIT modify the underlying immune process resulting in persisting benefits after cessation of treatment.
- The lesser frequency and severity of systemic reactions allows SLIT to be home administered after the first dose.
- SCIT but not SLIT has been demonstrated to be effective using mixtures of multiple, unrelated allergen extracts.
- Although good comparative studies are lacking, available evidence suggests superior short-term efficacy with SCIT.

Disclosure statement: Consultant to Merck and Circassia; grant support from Circassia (H.S. Nelson). Lecture Fees: ALK, Stallergenes, Merck, and Allergopharma, Consultancy Fees: ALK, Stallergenes, Merck, and Hal Allergy (M.A. Calderon).

^a National Jewish Health and University of Colorado Denver School of Medicine, 1400 Jackson Street, Denver, CO 80206, USA; ^b Section of Allergy and Clinical Immunology, Royal Brompton and Harefield Hospital NHS Trust, National Heart and Lung Institute, Imperial College London, Dovehouse Street, London SW3 6LY, UK; ^c Department of Internal Medicine and Allergy, Faculty of Medicine, University of Costa Rica, San Jose, Costa Rica, USA

* Corresponding author.

E-mail address: nelsonh@njhealth.org

Immunol Allergy Clin N Am 36 (2016) 13–24

<http://dx.doi.org/10.1016/j.iac.2015.08.005>

immunology.theclinics.com

0889-8561/16\$ – see front matter © 2016 Elsevier Inc. All rights reserved.

INTRODUCTION

Allergy immunotherapy (AIT) was introduced more than a century ago by Leonard Noon as a treatment of allergic rhinitis caused by grass pollen.¹ The subcutaneous injection of increasing and eventually maintenance doses of various seasonal and perennial allergens (subcutaneous immunotherapy [SCIT]) came into widespread use for the treatment of allergic rhinitis, allergic asthma, and allergic sensitization to insect venoms. Although of proved efficacy in allergic rhinitis,² allergic bronchial asthma,³ and Hymenoptera venom sensitivity,⁴ the use of SCIT for allergic rhinitis and allergic asthma has been limited by the long course of treatment requiring numerous visits to physicians' offices, by cost, and to some extent by the possibility of local and systemic reactions to the injections. As a result, alternative methods of AIT have been investigated that aim to avoid these SCIT drawbacks by greatly shortening the course of treatment, allowing home administration, or both. Alternatives under active investigation include administering the extract in a limited number of injections intralymphatically, applying the extracts incorporated in a patch (epicutaneously), or treating with modified extracts that are hypoallergenic so that a few large doses are sufficient for a course of treatment.⁵ The one alternative approach that has been studied the most and is now an accepted clinical practice is to administer the extract as a liquid or a rapidly dissolving tablet (sublingual immunotherapy [SLIT]).

SCIT and SLIT are directed at modifying immune response to the allergen to which the patient is sensitized and therefore the responses to treatment with these two approaches share many features (Box 1). Both have been shown to be effective for allergic rhinitis and allergic asthma and with some support for use in selected patients with atopic dermatitis.⁶ There are defined effective doses for most standardized extracts for SCIT, for the SLIT tablets, and liquid ragweed. The sequence of immunologic

Box 1

Shared and differing attributes of SCIT and SLIT

Shared

1. Effective treatment of allergic rhinitis and allergic asthma, with some support for use in selected patients with atopic dermatitis.
2. Defined optimal doses for standardized liquid extracts (SCIT) and SLIT tablets.
3. Underlying immunologic response
 - a. Early induction of regulatory T cells.
 - b. Later immunodeviation from a predominant Th2 to a Th1 response to the administered allergen.
 - c. Suppression of Th17 responses.
4. Evidence for disease modification
 - a. Reduction of additional sensitization in monosensitized patients.
 - b. Reduction in the development of asthma in patients with allergic rhinitis.
 - c. Persisting benefit after stopping an effective course of treatment.

Differing

1. Frequency and severity of systemic reactions (favors SLIT).
2. Clinical efficacy with Hymenoptera venom (favors SCIT) and for food allergy (favors SLIT).
3. Lack of defined optimal doses for SLIT liquids (favors SCIT).
4. Proven effectiveness of multiple allergen mixes with SCIT but not SLIT (favors SCIT).
5. Clinical efficacy (currently available studies favor SCIT).

Download English Version:

<https://daneshyari.com/en/article/3354557>

Download Persian Version:

<https://daneshyari.com/article/3354557>

[Daneshyari.com](https://daneshyari.com)