Selection of Patients for Sublingual versus Subcutaneous Immunotherapy

Learning objectives:

Identify how stratification of patients by allergen sensitization as well as by therapeutic response opens up new ways of selecting patients for SIT and SLIT.

Recognize the improved safety of SLIT over SIT and its use outside healthcare settings will be emphasized as well as its role early in life and in older children.

Review evidence of experts' experience with SIT in patients with medical conditions historically considered contraindications for SIT (e.g. cancer in remision, HIV seropositivity, e.o.)

References:

Larenas-Linnemann, D. E., et al. (2011). "Evidence of effect of subcutaneous immunotherapy in children: complete and updated review from 2006 onward." Ann Allergy Asthma Immunol **107**(5): 407-416 e411.

OBJECTIVE: To update the scientific evidence of subcutaneous immunotherapy (SCIT) in children. DATA SOURCES: PubMed, EMBASE, and known articles. STUDY SELECTION: All publications on SCIT in pediatric patients from January 2006 to April 2011. Study design was not a restriction. The articles were analyzed according to their outcomes and evaluated on their scientific quality using the Grading of Recommendations Assessment, Development, and Evaluation and Jadad tools. Clinical, safety, and immunologic data were gathered. RESULTS: The scientific evidence produced by the 31 articles analyzed showed that there is high-quality evidence that grass pollen SCIT causes a reduction in the combined symptom-medication score and increases the threshold of the conjunctival provocation test, immediately and 7 years after termination of SCIT, as well as the threshold of the specific bronchial provocation test and the skin prick test reactivity. Alternaria SCIT improves medication scores, combined symptom-medication scores, and quality of life. It augments the threshold in the nasal provocation test. High-quality evidence of house dust mite SCIT shows that asthma symptom and medication scores improve and emergency department visits and skin reactivity are reduced; moderate evidence indicates improvement in pulmonary function tests. Pollen SCIT prevents asthma (moderate evidence); evidence for long-term benefit of pollen SCIT (7-12 years after termination) is low to moderate. There is inconclusive evidence for SCIT reducing new sensitizations. CONCLUSION: There is acceptable evidence that shows that grass pollen, Alternaria, and house dust mite SCIT is beneficial in allergic children.

Larenas-Linnemann, D., et al. (2013). "Pediatric sublingual immunotherapy efficacy: evidence analysis, 2009-2012." Ann Allergy Asthma Immunol **110**(6): 402-415 e409.

OBJECTIVE: To perform a structured analysis of the latest scientific evidence obtained for the clinical efficacy of sublingual immunotherapy (SLIT) in children. DATA SOURCES: PubMed, Embase, reference lists from reviews, and personal databases were reviewed for original articles on clinical trials with SLIT in patients younger than 18 years published from January 1, 2009, through December 31, 2012, using broad search and medical subject heading terms. STUDY SELECTIONS: Clinical trials, irrespective of their design, of SLIT in the treatment of respiratory and food allergy in patients 18 years or younger were selected. Clinical outcomes (symptom scores, medication use, provocation tests, pulmonary function tests, skin prick tests, and adverse events) and immunologic changes were tabulated. Quality of each trial and total quality of compounded evidence was analyzed with the Grading of Recommendations Assessment, Development and Evaluation system. RESULTS: Of 56 articles, 29 met the inclusion criteria. New evidence is robust for the precoseasonal tablet and drop grass pollen SLIT efficacy in allergic rhinitis and scarce for seasonal asthma. Some evidence for Alternaria SLIT efficacy is appearing. For house dust mite (HDM) SLIT in asthma, there is high-quality evidence for medication reduction while maintaining symptom control; evidence for HDM SLIT efficacy in allergic rhinitis

is of moderate-low quality. There is moderate evidence for efficacy of dual grass pollen-HDM SLIT after 12 months of treatment and 1 year after discontinuation. Specific provocation test results (nasal, skin) improve with grass pollen and HDM SLIT but nonspecific bronchial provocation testing does not. Food oral immunotherapy is more promising than food SLIT. Possible new surrogate markers have been reported. No anaphylaxis was found among 2469 treated children. CONCLUSION: Evidence for efficacy of SLIT in children with respiratory or food allergy is growing.

Baena-Cagnani, C. E., et al. (2013). "Will Sublingual Immunotherapy Offer Benefit for Asthma?" Curr Allergy Asthma Rep.

Evidence shows that sublingual immunotherapy (SLIT) is indicated in patients with allergic rhinitis (AR). In this article we discuss whether SLIT could offer benefit for children and adults with asthma. We reviewed individual trials on SLIT in asthmatic patients, but also asthma data reported in some SLIT trials conducted in AR patients. Findings were complemented with data from systematic reviews and meta-analysis on the subject since 2000 and some guidelines that mention immunotherapy for asthma treatment. In AR patients with concomitant persistent asthma, SLIT reduces medication needs while maintaining symptom control. This holds especially true for house dust mite SLIT. Data on pollen SLIT and lung symptom improvement with SLIT, however, are less convincing. Therefore, we suggest SLIT should be added as an optional add-on therapy for patients with asthma whenever a causative allergen has been demonstrated and AR is associated with asthma. For the future, SLIT should be studied in specifically designed asthma studies in allergic asthmatics without AR.