

Respiratory Allergy in Elderly: The Role of Specific Immunotherapy

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ABSTRACT

The role of specific immunotherapy (AIT) in elderly allergic patients is still debated. Very few studies specifically addressing the efficacy of AIT in the elderly can be found in the medical literature. On the basis of these trials, injection AIT (SCIT) can be considered an effective therapeutic option in otherwise healthy older patients with a short disease duration whose symptoms cannot be adequately controlled by drug therapies alone. Equally sublingual AIT (SLIT) reduces symptoms, drug consumption and the progression of the disease in both young and elderly allergic subjects with persistent rhinitis and mild bronchial asthma as long as the disease had started fairly recently.

Keywords: Elderly patients; Subcutaneous immunotherapy; Sublingual immunotherapy; Respiratory allergy; Allergic march

INTRODUCTION

Whether Specific Immunotherapy (AIT) may be considered as a therapeutic option also in older patients is still debated. Very few studies have evaluated the effects of Subcutaneous (SCIT) and Sublingual (SLIT) Immunotherapy in elderly adults with either rhinitis or bronchial asthma [1]. The natural history of the atopic march has changed significantly over the last few decades, especially in Europe with emerging pollinoses from allergens as birch and ragweed [2-4]. In atopic children the disease initially arises as atopic dermatitis and food allergies, which subsequently evolve into rhinitis and asthma [5]. Skin manifestations are less frequent in patients whose symptoms started during adulthood, but the march from rhinitis to asthma proceeds nevertheless, together with the possibility of new sensitizations [6]. Often the adult patients sensitized to birch and ragweed pollen does not present with a background of atopic constitution, the average age is higher than for other pollinoses, and the onset is after 45 years of age in up to 20% of cases; in some patients the symptoms first appear even after the age of 70. These patients often started an Allergen-specific Immunotherapy (AIT) on account of the severity of the symptoms and inadequacy of control with standard drug therapy. Although AIT is deemed the only treatment that can at least partly modify the natural course of the disease during its initial stages, it is obvious that AIT is less indicated for elderly patients with a long history of allergic respiratory diseases due to remodelling of the

respiratory tract, which produces chronic and irreversible ultrastructural changes in nasal and bronchial mucosa. However, elderly patients with a recent history of allergies seem to be ideal candidates for investigating the efficacy of AIT during their last decades [7].

SCIT AND SLIT IN ELDERLY PATIENTS: WHEN AND WHY?

Very few studies specifically evaluating the efficacy of AIT in the elderly are reported in the medical literature. This is probably for two reasons: firstly, most patients attending the reference allergy centers are children, adolescents and young adults and, secondly, many of the older patients who come in for an allergic evaluation have a history of allergic respiratory disease that has persisted for many years which is generally held-renders them ineligible for allergen-specific immunotherapy [8]. Nonetheless, in a study carried out in Florida, otherwise healthy patients >60 years and controls <60 years showed a similar, favourable response to AIT, suggesting that age alone should not be a decisional factor in the initiation of AIT in the elderly; unfortunately, in that study disease duration was not reported. In a second study the effect of injection AIT (SCIT) was assessed in 39 older patients (age>54, median 59) monosensitized to birch (n=20) and ragweed (n=19); 33 younger subjects and 37 subjects >54 years old (all of them monosensitized to ragweed or birch) who refused to undergo SCIT were enrolled as positive and negative controls, respectively. At the end of the study,

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Received: November 9, 2020; **Accepted:** November 23, 2020; **Published:** November 30, 2020

Citation: Marogna M. (2020) Respiratory Allergy in Elderly: The Role of Specific Immunotherapy. J Allergy Ther 11: 230.

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37/39 (95%) older patients versus 32/33 (97%) younger control patients submitted to SCIT reported a symptom reduction >50% after 1-5 years of SCIT (nonsignificant). The median clinical efficacy of SCIT was 80% in both groups (nonsignificant). 27/37 controls not submitted to SCIT did not report any change in symptom severity at the follow-up visits, whereas 10/37 reported a more severe disease (4 subjects reported the appearance of seasonal asthma) ($p < 0.001$ vs. patients submitted to SCIT). Patients treated with SCIT used less frequently cetirizine ($p < 0.001$) and/or salbutamol ($p < 0.05$) than controls not submitted to SCIT. Finally, in a third trial, one hundred and sixty seven patients with persistent rhinitis and mild asthma, selected from 573 subjects allergic to house-dust mites, were treated with either standard chronic pharmacotherapy or Sublingual AIT (SLIT) plus drugs on demand. Monthly symptom/drug scores, respiratory function, methacholine (MCh) challenge and nasal eosinophil count were scheduled at the beginning and at the end of the study. Two age groups (18-28 years, 49 patients and 55-65 years, 40 patients) were analysed. At the end of treatment, SLIT achieved improvement in all variables ($p < 0.001$) in both age groups, but the global symptoms were lower in the younger patients ($p = 0.002$). There were also fewer new sensitizations in the SLIT group ($p = 0.03$) than in the "control" patients given standard pharmacotherapy, but with no relation to age. Asthma became worse only in the control groups, regardless of age [9,10].

CONCLUSIONS

SCIT can be considered an effective therapeutic option in otherwise healthy elderly patients with a short disease duration whose symptoms cannot be adequately controlled by drug therapies alone. Equally, SLIT was found effective in both young and elderly patients as long as the disease had started fairly recently. Long-term compliance (three years) was also very good (only five spontaneous drop-outs out of 57 patients). Any appreciable side effects was found, this can probably be ascribed to the type of SLIT utilised (a modified allergoid) and the relatively low dosage. Double-blind, placebo-controlled trials would certainly have been a more appropriate tool to assess the indication for SCIT and SLIT in elderly patients. In the trial above mentioned, a similar real-life evaluation during normal clinical practice would create ethical problems, particularly as regards the randomization of active treatments and placebo, and also because of the need to conduct the study for at least three years in order to verify specific changes in the patients' clinical, immunological, cytological and functional profiles. We therefore believe that a rigorously conducted retrospective evaluation

comparing two treatments (SLIT or SCIT versus standard drug therapy) can nevertheless provide useful information on a practical allergological level to define the benefits of AIT in elderly patients. Like the younger patients, elderly subjects treated with AIT enjoyed significant improvement in their symptoms and a reduction in the use of drugs on demand. In patients using SLIT was also observed a tendency to improvement in respiratory function parameters and a decrease in eosinophil infiltration in the nasal mucosa, as well as a higher aspecific bronchoreactivity threshold to MCh challenge. Lastly, like in the younger patients, there was some prevention of the progression of the respiratory allergic disease, with few new sensitizations and less worsening of asthma. Based on these considerations, SLIT and SCIT can probably be considered a valid therapeutic option in elderly patients, as long as their history of disease is relatively short.

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