

The Real Value of IgG4 Determination in Immunotherapy Follow-Up

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Key Words

IgG4, antigen-specific · Immunotherapy follow-up ·
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Introduction

It is extremely important in immunotherapy follow-up to count with a reliable parameter which assesses and justifies the favourable clinical evolution subsequent to immunotherapy.

Several authors have tried to study the possible alterations of very different interleukins or changes in the cellular response in T₂ helper lymphocytes [1–4]. In previous studies we proved IgG subclass modifications among asthmatic patients with *Dermatophagoides pteronyssinus* and grass pollen sensitisation in short periods of immunotherapy [5, 6]. Nevertheless, we decided to perform a similar study in both patient groups in a 6-year immunotherapy period.

Materials and Methods

We studied 134 patients with asthma (72.8%) and/or rhinosinusitis (27.2%), 53 of whom were sensitive to *Lolium* and 81 were sensitive to *D. pteronyssinus*. The mean age was 27.2±1.2 years with a slight predominance of males (57%).

We performed skin tests, total IgE, antigen-specific IgE, histamine release test and IgG4 determinations. Patients followed immunotherapy at three different concentrations, depending on the sensitisa-

tion degree. The standard concentration was used in the first group (n = 37; 27.2%); the second group (n = 30; 22.5%), consisting of patients with high values in RAST and the histamine release test was given the concentration 1:2 and the third group of patients (n = 67; 50.3%), who presented the highest sensitisation both in vivo and in vitro, was given the concentration 1:10.

Regarding the clinical follow-up, the following score was used: (1) fair (<50% symptomatology); (2) good (<70% symptomatology); (3) very good (intermittent symptomatology, <85%); (4) asymptomatic.

Results

The skin test, total IgE, antigen-specific IgE and histamine release test showed no significant modifications in any of the three groups for patients with allergy to mites or pollen, in spite of the very positive clinical evolution during the 6 years.

Regarding IgG4 follow-up in pollinic patients, a very significant increase was observed, reaching its highest value after 5 years, at standard concentration and with an increase of 49.4% (fig. 1). In the group of patients with sensitisation to *D. pteronyssinus* the results were lower than the ones obtained against grass pollen, with an increase of 22.9% at standard concentration.

The IgG4 increase depends on the concentration of the allergenic extract used in the immunotherapy.

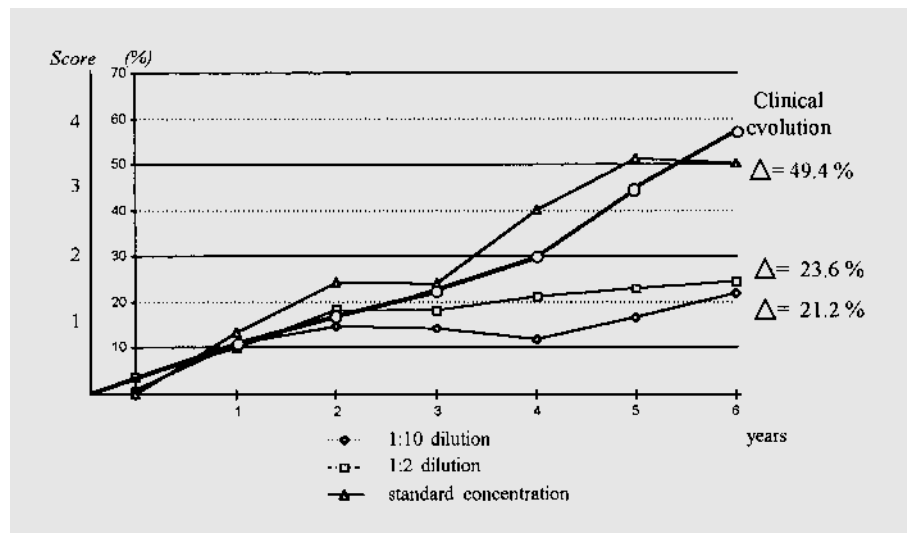


Fig. 1. IgG4 follow-up in pollinic patients.

Conclusion

Antigen-specific IgG4 determination is the only in vitro parameter which has been demonstrated to get modified along the immunotherapy treatment as the patient's clinical improvement takes place.

In the formation of the 'blocking antibodies' subsequent to immunotherapy, the allergen concentration plays a very important role.

We believe that today antigen-specific IgG4 is the only standardised suitable parameter for immunotherapy follow-up.

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