Specific immunotherapy in children: past and present

A. CANTANI

Department of Pediatrics, Allergy and Clinical Immunology Division, "La Sapienza" University - Rome (Italy)

Abstract. – Specific immunotherapy (SIT) in children is usually completely neglected. Pediatric SIT being not an optional treatment should be administered as soon as possible, also in children aged 2-3 years, due to the very early asthma and rhinitis onset, contrary to a recent publication that continues to stress the danger of anaphylactic reactions without displaying reliable data. On the other hand drugs represent only a symptomatic treatment, therefore SIT is the only treatment which can alter the natural course of respiratory diseases.

Key Words: Pediatric SIT, Pediatric asthma, Allergic rhinitis, Very early onset.

Introduction

A recent Position Paper1, an International Conference on Allergic Rhinitis in Childhood2, and a Symposium on Specific Allergy3 all seem to have disregarded that SIT has been performed in 29 studies encompassing 2,024 children with asthma and/or allergic rhinitis (AR), and as many controls, 27 of which highly positive (p < 0.0001)4. Some children were even aged 2-3 years4-6, but all had a young age of 6.3 years (mean)4. Moreover, the same considerations for diagnosis in adults may apply to children1, but treatment not at all. Children tolerate adrenalin therapy much better than adults, and any other treatment may be favored by the attitude of parents most often accompanying children, parents who supervise their babies better than themselves7.

We have never found that SIT for children is more complicated because of their age1; instead, daily drug dependence could have a negative impact on children quality of life, in perspective directing them toward a condition of "undertreatment"8, while stopping drug treatment in children with asthma results in clinical deterioration9, with the obvious conclusion that the nature of drug treatment is suppressive rather than curative.

Hitherto we have demonstrated that anaphylactic reactions are extremely rare in children: a fatal reaction with no known error occurred only in three children10, while in the 1,313 children with asthma or AR treated by us there were no significant reactions: only severe reactions in 0.09% injections and one case of shock = 0.0016% of injections and in 0.089% of 1,119 treatments4.

Why it is so necessary to begin SIT early in life? To stop the atopic march. A meta-analysis of mine revealed that asthma onset within the first year is certain in 34.5-56.2% of babies, and a greater proportion (82.4%) is manifest between the 4th and the 7th year of life. Further, the asthma appearance is evident in 90% of children aged 8 years or less11: therefore the most severe cases have an early onset, and the allergic component of asthma is most pronounced in children and adolescents7. In addition, even slight, newly diagnosed asthma is accompanied by features of ongoing mucosal inflammation and desquamation of bronchial epithelium12, and elastic fibers in the bronchial walls are destroyed by long-standing asthma7. Bronchoalveolar lavage findings and mucosal biopsies in asthmatic children aged 1-15 years have revealed bronchial inflammation and collagen deposition below the basement membrane, showing that both inflammation and remodeling occur early in life13,14. Before the damage takes place the main option, SIT should not disregarded15.
About SIT for mold allergy, the only study in children with respiratory allergy to Alternaria, done with the late Professor Elena Businco was not mentioned. One more word regarding the paper by Adkinson et al who treated a cohort of moderate-to-severe asthmatic children for 2 years with multi-allergen SIT, and found no difference between placebo and SIT-treated children. However, SIT should consist of a treatment done with only two different extracts to be administered separately. Even if the allergens are both pollens, mixtures of allergens belonging to different pollen families are not recommended. One more problem is the onset of AR, which is also frequent in children aged 1-4 years, therefore also in these children an early SIT administration is warranted, whereas one study proposes that SIT in such children should started after the age of 6 or 7 years, when the sensitization is already occurred. SIT is known to be a preventive allergy treatment also in AR children.

Conclusion

These data suggest that if suitable allergen extracts are used, the therapeutic indications are exactly followed, and children are followed by their doctors as frequently as required, SIT is effective in the treatment of pediatric asthma and the reactions are scarce. However a recent allergy paper completely ignores SIT in pediatrics. As regards the WHO Position Paper, perhaps the absence of pediatric allergists-immunologists among Chairmen and Panel members was critical. On the other side, the title of a Special Report on SIT by Frew on behalf of a British Society for Allergy and Clinical Immunology Working Party should read more appropriately “Banishment of SIT except for venom hypersensitivity”.

References


17) **Murray AB, Ferguson AC, Morrison BJ.** Non-allergic bronchial hyperreactivity in asthmatic children increases with age and decreases with mite immunotherapy. *Ann Allergy* 1985; 54: 541-544.

