

Letter to the Editor

Environmental control and prevention of respiratory allergy: evidence and obstacles

Controle ambiental e prevenção de alergia respiratória: evidências e obstáculos

To the Editor:

Preventive treatment for allergies can be given at the primary, secondary or tertiary level. The use of allergy vaccines can provide permanent improvement of the allergic process, prevent further sensitization and impede the appearance of asthma in patients with allergic rhinitis.

Primary prevention involves treating individuals at high risk in order to avoid allergic sensitization. In secondary prevention, the individual is already sensitized, and the objective should be to reduce the levels of allergens to levels that do not result in the appearance of symptoms. In tertiary prevention, strategies for the management of allergic rhinitis or asthma are aimed at using pharmacological and non-pharmacological resources in order to reduce or eliminate the long-term limitations of the disease.

It has recently been questioned whether there is truly strong evidence that environmental hygiene is beneficial.⁽¹⁾

In a systematic review of measures to avoid dust mite allergens in the home, it was demonstrated that, in isolation, such measures are not useful for reducing the symptoms of allergic rhinitis. Physical or chemical interventions provide no benefits. Although covering mattresses with impermeable material reduces the levels of group 1 *Dermatophagoides pteronyssinus* allergens by approximately 30%, it has no effect on clinical outcomes. Nevertheless, there is a general consensus that allergen avoidance leads to the reduction of symptoms and can help some allergic patients.⁽²⁾

Another meta-analysis, in which negative results were obtained for asthma, gave rise to an editorial in the journal *Lancet*, entitled "Dust-mite control measures of no use".^(3,4) Reviews of environmental control and measures to avoid exposure to dust mites have serious deficiencies in terms of the inclusion and exclusion criteria of the studies selected, as well as in terms of the manner in which these are evaluated.^(4,5)

The *National Asthma Education and Prevention Program* (NAEPP) evidence-based guidelines for the treatment of asthma, revised in 2007, recommend removing the source of allergens as part of the treatment of asthma in patients with known sensitization.⁽⁶⁾ The panel of experts had access to all of the reports included in the Cochrane Library and reviewed thousands of other articles regarding the treatment of asthma. It is obvious that there are many ways in which the authors of meta-analyses can arrive at erroneous conclusions.⁽⁷⁾ For example, incomplete screening of the literature, inappropriate selection of articles and inappropriate statistical analysis can all lead to such conclusions. Aspects that should be observed in systematic reviews include the way in which the analyses were conducted and written, as well as the knowledge of the authors regarding the subject. In an editorial published in the *Journal of Allergy and Clinical Immunology*, Platts-Mills provided a critique of authors who believe that the meta-analysis confers upon them a certain status that makes them immune to natural academic criticism.⁽⁸⁾

Protocols of environmental control that have been successful present considerable variability in the outcomes, and interventions are rarely maintained if there is no parallel program of patient education.⁽⁸⁾ In addition, most patients are polysensitized, i.e., allergic to various antigens. A patient who has been submitted to skin tests prior to the environmental intervention and is aware of the positive results of the tests will no longer behave naturally in clinical studies. Another important point in the analysis of these studies is how to design a controlled protocol in these circumstances. What would be the non-intervention control?

In view of this immense variability in the studies published, Platts-Mills questions the validity of meta-analyses, since validity would require that the studies be comparable in terms of the evaluation of patients, the intervention

and the outcomes. The author also cites a series of studies in which measures for the environmental control of allergens were accompanied by a reduction in the level of exposure to aeroallergens, with positive clinical results.⁽⁸⁻¹⁰⁾ The author concludes by stating that the NAEPP recommendations are correct, and that programs for the reduction of exposure to allergens should become part of the treatment of asthma.

Environmental hygiene measures should be maintained for the continuous prevention of allergic sensitization and reduction of clinical manifestations resulting from exposure to allergens in patients with rhinitis and asthma. The long-term challenge is to maintain patient adherence to the instructions given by the physician.

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