Allergy

DIAGNOSIS
THE ATOPY PATCH TEST—REPRODUCIBILITY AND COMPARISON OF DIFFERENT EVALUATION METHODS


Purpose of the Study. Atopy patch testing (APT) has been suggested to be a valuable tool in the diagnosis of allergy. The purpose of this study was to examine the reproducibility of APT results and to compare visual evaluation to chromametry and laser Doppler imaging.

Study Population. Fifty-two patients with atopic dermatitis.

Methods. APT was performed on tape-stripped and unstripped test fields on their backs using cat dander, house dust mite, and grass pollen allergens from 2 different suppliers. Responders were retested 4 to 12 weeks later with the same allergens on their forearms.

Results. Fourteen (26.9%) volunteers showed 1 or more positive reactions. The test agreement rate was 56.3%. The test agreement in volunteers tested with allergens from the 2 different manufacturers was poor. Correlation of the results between the three evaluation methods was significant (P < .001). Compared with chromametry and laser Doppler imaging, visual scoring was superior in differentiation between irritative and allergic reactions.

Conclusions. The low reproducibility rate of APT results and the poor inter-test-agreement using allergens from different suppliers show that much work remains to make APT a reliable tool in identifying relevant aeroallergens in patients with atopic dermatitis.

Reviewer’s Comments. APT has been proposed as a useful adjunct for the diagnosis of allergy, especially in patients with atopic dermatitis and allergic gastrointestinal disease. If perfected, the test could be of particular value for non–immunoglobulin E (IgE)-mediated conditions where skin testing and radioallergosorbent testing (RAST) will not be useful. However, as demonstrated in this study, there is still a great deal of work to be done before this test can be reliably applied to clinical practice.

Robert A. Wood, MD
Baltimore, MD

PREDICTION AND PREVENTION
ENVIRONMENTAL EXPOSURE TO ENDOTOXIN AND ITS RELATION TO ASTHMA IN SCHOOL-AGE CHILDREN


Purpose of the Study. The “hygiene hypothesis” has been proposed as a major factor underlying the rapid increase in asthma and allergy over the past 20 to 30 years. This purpose of this study was to investigate whether exposure to microbial products in early life had any effect on the future development of asthma or allergy.

Study Population. Eight hundred twelve children between the ages of 6 and 13 years living in rural areas of Germany, Austria, and Switzerland where there were both farming and nonfarming households.

Methods. Parents completed a standardized questionnaire on asthma and hay fever. Blood samples were obtained from the children and tested for atopic sensitization; peripheral-blood leukocytes were also harvested from the samples for testing. The levels of endotoxin in the bedding used by these children were examined in relation to clinical findings and to the cytokine-production profiles of peripheral-blood leukocytes that had been stimulated with lipopolysaccharide and staphylococcal enterotoxin B.

Results. Endotoxin levels in samples of dust from the children’s mattresses were inversely related to the occurrence of hay fever, atopic asthma, and atopic sensitization. Nonatopic wheeze was not significantly associated with endotoxin levels. Cytokine production by leukocytes (production of tumor necrosis factor-α, interferon-γ, interleukin-10, and interleukin-12) was inversely related to the endotoxin level in the bedding, indicating a marked down-regulation of immune responses in exposed children.

Conclusions. A child’s environmental exposure to endotoxin may have a crucial role in the development of tolerance to ubiquitous allergens found in natural environments.

Reviewer’s Comments. This is a fascinating study on a timely and important topic. Although the final answer on the hygiene hypothesis is still far from complete, this is another piece of evidence in support of this theory.

Bradley Chipp, MD
Sacramento, CA

EFFECT OF EXCLUSIVE BREAST-FEEDING AND EARLY SOLID FOOD AVOIDANCE ON THE INCIDENCE OF ATOPIC DERMATITIS IN HIGH-RISK INFANTS AT 1 YEAR OF AGE


Purpose of the Study. To evaluate whether there is a preventive effect of exclusive breastfeeding and early solid food avoidance on the incidence of atopic dermatitis (AD). Sensitization to milk and egg allergens were also considered as secondary endpoints.

Study Population. A total of 1121 healthy newborn infants with a family history of atopy recruited from maternity wards who were exclusively breastfed or received cow’s milk formula (CMF) during the first 16 weeks of life.

Methods. This was a prospective cohort study comparing the incidence of AD in the first year of life between infants who were exclusively breastfed and infants who were exclusively or supplementarily formula-fed with CMF during the first 16 weeks of life. The effect of early solid food avoidance in the incidence of AD was evaluated as well as the incidence of egg and milk sensitization. At study entry, mothers were encouraged to exclusively breastfeed for at least 4 months, and solid foods were discouraged during this same time period. If breastfeeding was not possible, difficult, or refused, infants received formula exclusively or as a supplement. The mothers recorded weekly dietary diaries during the first 24 weeks of life. Mothers were asked to record the type of milk, time of introduction of milk, and types of foods consumed during this time period. Infants were seen by a physician at 1, 4, 8 and 12 months or between visits if skin lesions were observed and suspicious for AD. Blood was obtained at birth, 4 months, and 12 months for total immunoglobulin E (IgE) and specific IgE for milk and egg allergens.

Results. Eight hundred sixty-five infants were exclusively breastfed and 256 received CMF during the study period. There were significant differences between the 2
ENVIRONMENTAL EXPOSURE TO ENDOTOXIN AND ITS RELATION TO ASTHMA IN SCHOOL-AGE CHILDREN

Bradley Chipps

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