AllergyWatch®

A Synopsis of Allergy and Asthma Literature, Resulting from an Unbiased, Comprehensive Review of Eighteen Major Medical Journals.

A Publication of The American College of Allergy, Asthma & Immunology

Volume 4, Number 4 July-August 2002

Even Without Atopy, Rhinitis Is a Risk Factor for Adult-Onset Asthma

PATIENTS with asthma have high rates of allergic rhinitis, and patients with allergic rhinitis may have bronchial hyperresponsiveness even if they do not have asthma symptoms. In the past, it was assumed that this relationship involved common airway allergens; however, recent reports suggest that asthma and rhinitis may be linked even in the absence of atopy. Rhinitis was studied as a risk factor for adult-onset asthma in a large, community-based, longitudinal study.

The prospective study included a stratified cluster sample of 1,655 white households in Tucson, Ariz., enrolled during 1972-73. With follow-up to 1992, subjects underwent allergy skin-prick testing on up to three occasions. A nested case-control study was performed in 182 subjects with a new physician diagnosis of asthma during follow-up and 2,177 with no asthma or shortness of breath with wheezing during this time. The presence of rhinitis was assessed by questionnaire, and its relationship with asthma risk was analyzed.

Follow-up was significantly shorter for asthmatic subjects than for controls. Risk factors for the development of asthma included high IgE level, positive allergy skin test, female sex, previous diagnosis of chronic obstructive pulmonary disease (COPD), and history of smoking. Rhinitis was also a significant risk factor, with a crude odds ratio of 4.13 (95% confidence interval 2.88 to 5.92). Rhinitis remained a significant factor after adjustment for duration of follow-up, age, sex, atopy, smoking, and COPD: adjusted odds ratio 3.21 (2.19 to 4.71).

Though classified as having no asthma history at baseline, about 22% of asthmatic subjects reported "respiratory trouble before age 16" on the enrollment questionnaire, compared with 9% of the nonasthmatic controls. Rhinitis was a significant risk factor in all stratified patient groups, although the associated odds ratio for asthma was lower in patients with a previous diagnosis of COPD. ➤➤

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The American College of Allergy, Asthma & Immunology expresses its appreciation to Aventis Pharmaceuticals Inc.for its unrestricted grant in support of the publication of *AllergyWatch*®.

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- Annals of Internal Medicine
- Pediatrics
- Journal of Pediatrics
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- Archives of Pediatric and Adolescent Medicine
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Rhinitis is an independent risk factor for adult-onset asthma, even after age 50. This relationship holds for nonatopic as well as atopic individuals. As suggested by previous studies, the relationship between rhinitis and asthma may not result simply from allergy as a shared risk factor.

COMMENT: *The Tucson group reports another analysis of data from their epidemiologic study involving 1,655 households. They followed 2,177 controls and 173 patients with asthma for 20 years. More than 76% of patients developing asthma reported having prior rhinitis symptoms, compared to only 43.8% of nonasthmatics. The odds ratio for developing asthma was even higher (6.28) when both rhinitis and sinusitis were present. This study adds to the growing body of literature linking asthma to rhinitis. There is certainly more than just a causal relation between asthma and rhinitis, but it has yet to be determined if asthma is the natural progression of a common airway disease.*
S. M. F.
Guerra S, Sherrill DL, Martinez FD, Barbee RA: Rhinitis as an independent risk factor for adult-onset asthma.
J Allergy Clin Immunol 109:419-425, 2002. ♦♦

Regular Salbutamol Leads to Increased Exercise-Induced Bronchoconstriction

PATIENTS with severe acute asthma commonly use short-acting β_2-agonists on a regular basis, even though these medications are prescribed for "as needed" use. As a result, the drugs may lose effectiveness as the patient becomes tolerant. The effects of regular inhaled β_2-agonist use on the bronchodilator response to exercise-induced bronchospasm (EIB) were studied.

The study included 9 adult subjects - 8 women and 1 man, mean age 26 years - with a history of EIB. Exclusion criteria included recent unstable requiring oral or high-dose inhaled corticosteroids. Patients were randomized to receive 1 week of salbutamol 200 µg qid or placebo, then crossed-over to the other treatment. After each treatment, they performed a submaximal exercise challenge at a level inducing a 15% decrease in FEV_1. After this exercise session, the bronchodilator response to three doses of salbutamol - 100, 100, and 200 µg, given at 5-minute intervals - was assessed.

Baseline FEV_1 was similar after the salbutamol and placebo treatment periods. The postexercise decline in FEV_1 was significantly greater after salbutamol--90% greater at 5 minutes. The difference persisted 25 minutes after the exercise challenge, even after treatment with 400 µg of salbutamol.

In patients with EIB, taking regular doses of salbutamol causes increased bronchoconstrictive response to exercise, as well as a reduced response to postexercise salbutamol. Regular or frequent β_2-agonist use may render emergency bronchodilator treatment ineffective in patients with exercise-related asthma attacks.

COMMENT: *For some time it has been understood that regular use of short-acting β_2-agonists is not recommended for asthmatics and in fact is an indicator of uncontrolled asthma. Yet apparently, regular use of short-acting inhalers is still done for EIB. While loss of bronchoprotection is well appreciated, actual tolerance has been difficult to demonstrate. In this placebo-controlled, crossover study, investigators showed that 1 week of qid salbutamol resulted in a greater drop of FEV_1 after a standard exercise challenge in subjects with EIB. Additionally, the bronchodilator response to salbutamol was significantly reduced in the group using regular salbutamol. These data support the notion that regular use of short-acting β_2-agonists should be discouraged and beg the question as to whether over-the-counter β_2-agonists such as epinephrine inhalers or tablets should be available because of the potential risk to patients.*
G. D. M.
Hancox RJ, Subbaro P, Karnada D, et al: β_2-agonist tolerance and exercise-induced bronchospasm. **Am J Respir Crit Care Med** 165:1068-1070, 2002. ♦♦

Cockroach and Cat Allergen Increase Asthma Morbidity in Sensitized Women

IN sensitized adults, exposure to indoor allergens - eg, cat, mite, or cockroach - causes symptoms or reduces lung function under laboratory conditions. However, there are few data on how avoidance of these allergens influences asthma morbidity. The relationship between indoor allergen exposure and morbidity in asthma patients was evaluated.

Subjects were drawn from mothers of families participating in the Epidemiology of Home Allergens and Asthma study; all included families had one parent with a physician diagnosis of specific sensitization or allergic disease. The presence of asthma and associated morbidity were assessed by questionnaire. Home dust samples were obtained for measurement of cockroach, mite, and cat allergens and serum samples for measurement of specific IgE antibodies to these allergens. The analysis included 458 women overall and a subset of 140 with diagnosed asthma. The relationship of allergen sensitization/exposure to asthma morbidity was assessed at 4 years' follow-up.

Eleven percent of the women were sensitized to cockroach. The maximal home level of cockroach allergen was 2 U/g or higher for 13% of subjects, with peak levels nearly always found in the kitchen. Cockroach sensitization was more frequent for women with kitchen allergen levels of 2 U/g or higher, with a trend toward increased sensitization at higher kitchen cockroach levels. Women whose bedrooms showed higher levels of dust mite allergen were more likely to be sensitized to mite, although the relationship between mite levels and allergy was weak.

Just 18 of the 140 women with asthma were sensitized and exposed to high levels of cockroach allergen in the kitchen. Of these, 33% had a history of steroid use, 35% had received care in the emergency department, and 22% had had a prolonged illness in the past year. Nineteen asthmatic women were sensitized and exposed to high levels of cat allergen in the living room. Seventy-nine percent of this group reported asthma morbidity in the past year, compared with 47% of other asthmatic patients.

This study, representing women from a wide socioeconomic range, finds increased asthma morbidity among subjects sensitized to indoor allergens and exposed to high levels of those allergens at home. It provides the first prospective, epidemiologic data on the relationship between cat allergen levels at home and asthma morbidity in sensitized women. Home levels of cockroach allergen are significantly related to sensitization and asthma prevalence. To ensure optimal advice on allergen avoidance, patients with asthma should undergo allergy testing.

COMMENT: *The authors raise many questions regarding the role of indoor allergen exposure and the development of asthma. While there appears to be an association with cat and cockroach allergen sensitization and asthma, this observation does not prove cause and effect. Nonetheless, these observations highlight the importance of allergen skin testing and potential environmental control measures in the care of asthmatic patients.*

A. M.

Lewis SA, Weiss ST, Platts-Mills AE, et al: The role of indoor allergen sensitization and exposure in causing morbidity in women with asthma.

Am J Respir Crit Care Med 165:961-966, 2002. ♦♦

Ethical Issues in an Industry-Sponsored Trial of a New Asthma Drug

THE pharmaceutical industry has become a major source of funding for clinical trials, with drug companies increasingly relying on community physicians to help recruit patients. Toward examining the ethical issues raised by industry-sponsored trials, the authors review a recent trial of a new inhaled corticosteroid drug.

The randomized controlled trial was designed to assess the efficacy and safety of mometasone furoate vs beclomethasone dipropionate vs placebo for the treatment of moderate, persistent asthma. Enrolled patients had asthma lasting at least 6 months, mean FEV_1 76% predicted, and were currently receiving inhaled corticosteroid therapy. They were randomized to receive mometasone 100 or 200 µg bid, beclomethasone 168 µg, or placebo.

All three active treatments improved FEV_1 and asthma symptom scores, while placebo did not. More than 40% of the placebo group had to drop out of the study because of worsening asthma, compared with less than 10% of the active treatment groups. Nearly two-thirds of patients in the placebo group were rated "much worse" at the end of the study. Meanwhile, there were no statistically significant differences in outcome between the three active treatment groups.

Ethical analysis questions the scientific value of the study, mainly because there was no clear research question to be answered. Rather, the study seemed designed to meet marketing or licensing requirements. In addition, the proper use of a placebo to validate active-controlled trials may be questioned in a study of patients with persistent asthma who were already receiving inhaled corticosteroids. The study also entailed a significant risk of worsening disease in children (over age 12) if they were assigned to the placebo group, raising concerns about fair subject selection. In addition, since the placebo arm of the trial was unnecessary, there was no favorable balance between the potential risks and benefits of the treatments. The study report provides inadequate data about the independent review process or the extent of informed consent.

The authors raise substantial ethical concerns about an industry-sponsored trial of a new asthma drug. In particular, they question the ethics of using a placebo control group in a situation where known effective treatments are available, without a sound methodologic reason. The systematic ethical framework used in this analysis may be of value for institutional review boards and for journal editors and peer reviewers evaluating research protocols and papers. ➤➤

COMMENT: *There has recently been prominent debate regarding ethical standards of both investigator-initiated and pharmaceutical industry-sponsored clinical research. It is essential that practicing allergists who are also investigators in industry-sponsored trials stay abreast of these developments. Ethical standards to which investigators are accountable appear to be evolving independently from the concerns of the FDA or IRBs.*
S. A. T.
Miller FG, Shorr AF: Ethical assessment of industry-sponsored clinical trials: a case analysis.
Chest 121:1337-1342, 2002. ♦♦

New Budesonide Formulation Is Effective in Young Children with Persistent Asthma

THERE has been a need for new anti-inflammatory drug formulations appropriate for use in children under 4 years old. Budesonide inhalation suspension (Pulmicort Respules) is the first inhaled corticosteroid specifically developed for use in this age group. Budesonide inhalation suspension was compared with cromolyn sodium nebulizer solution for safety and efficacy in young children with asthma.

The randomized, open-label trial included 335 children with persistent asthma, age 2 to 6 years. All had symptoms at least twice weekly and had received at least one long-term control medication with periodic rescue medication. The children were randomized to receive 8 weeks of treatment with either budesonide inhalation suspension, 0.5 mg/d; or cromolyn sodium nebulizer solution, 20 mg qid.

The rate of asthma exacerbations per year was 1.23 in children assigned to budesonide, compared with 2.41 in those assigned to cromolyn. After adjustment for other factors, the mean exacerbation rate was 27% greater in the cromolyn group. Both groups had significant improvement in nighttime and daytime symptom scores within 2 weeks of treatment. Rates and types of adverse events were comparable between groups.

The prospective study supports the safety and effectiveness of budesonide inhalation suspension for young children with persistent asthma. This new drug is particularly important, given the high prevalence and severity of asthma in young children and the limited treatment choices during a critical "window of opportunity."

COMMENT: *In this 52-week study of 335 asthmatic children at 36 U.S. sites, it is comforting to see that* both *treatment groups benefited from regular preventive anti-inflammatory therapy. Clearly, the budesonide treatment group did better clinically. Most side effects were the same in both treatment groups, including baseline and ACTH-stimulated cortisol levels at 52 weeks. However, the change in height--mean increase of 0.86 cm--was greater in the cromolyn treatment group.*
J. A. A.
Leflein JG, Szefler SJ, Murphy KR, et al: Nebulized budesonide inhalation suspension compared with cromolyn sodium nebulizer solution for asthma in young children: results of a randomized outcomes trial.
Pediatrics 109:866-872, 2002. ♦♦

Using Heliox to Nebulize Albuterol Improves FEV_1 in Severe Asthma Attacks

ALBUTEROL delivered via jet nebulization is a widely used treatment for severe asthma exacerbations. Compared with air or oxygen inhalation, heliox--a mix of helium and oxygen--improves deposition of inhaled particles in the lung and may improve airflow in patients with severe asthma attacks. This randomized trial examined the use of albuterol nebulized with heliox vs oxygen in patients with severe asthma exacerbations.

Forty-five patients presenting to the emergency department with severe acute asthma exacerbations received albuterol nebulized with either heliox 80:20 or oxygen as the driving gas. Albuterol was nebulized using a mouthpiece and T-adapter. Both groups received three consecutive albuterol treatments, with FEV_1 measured at baseline and after each albuterol treatment.

The two groups had similar characteristics, including baseline FEV_1 and hospitalization rate. Emergency therapy included systemic corticosteroids for most patients in both groups. The heart rate response to albuterol was significantly greater in the heliox group. After the first treatment, the median increase in FEV_1 was 32% with heliox-nebulized albuterol vs 32% with oxygen-nebulized albuterol. The results were 52% vs 23%, respectively, after the second treatment and 65% vs 27% after the third.

For management of severe asthma exacerbations, albuterol nebulized with heliox provides better bronchodilation than albuterol nebulized with oxygen. Compared with air, heliox is less dense and only slightly more viscous, leading to improved alveolar ventilation. The spirometric gains noted in this study likely reflect increased particle deposition in the distal airways.

COMMENT: *Allergists seldom use heliox as an emergency measure for severe asthma exacerbations. Pulmonologists have used this mixture to help asthma and chronic obstructive pulmonary disease with some regularity. This article compares albuterol nebulized with heliox to albuterol nebulized with oxygen. The heliox group had a significantly higher improvement in FEV_1 after each of three treatments in the acute care setting. There was also a higher heart rate in the heliox group, presumably because of higher albuterol levels delivered to the distal airway and absorbed in the alveoli. Such a therapy may be useful in patients with severe asthma exacerbations.*
G. D. M.
Kress JP, Noth I, Gehlbach BK, et al: The utility of albuterol nebulized with heliox during acute asthma exacerbations.
Am J Respir Crit Care Med 165:1317-1321, 2002. ♦♦

Allergens and Viruses Act Together in Adult Asthma Exacerbations

PREVIOUS studies have suggested that asthma exacerbations in children may be linked to an interaction between allergic sensitization and viral infection. This study evaluated the role of allergen sensitization/exposure and viral infections in acute asthma exacerbations in adults.

The case-control study included 60 patients, aged 17 to 50 years, hospitalized for acute asthma. Each patient was matched for sex, age, and smoking status to a control with stable asthma and to a patient hospitalized with a nonrespiratory condition. The analysis included skin-prick tests for inhalant allergens, polymerase chain reaction assays of nasal washings for exposure to viruses, and dust samples to assess home exposure to allergen.

Seventeen percent of patients had been exposed to viruses, either coronavirus or picornaviruses. Viruses were detected in 26% of patients admitted with asthma, 18% of those with stable asthma, and 9% of inpatient controls. The patients admitted with asthma had higher levels of allergen exposure at home than those with stable asthma. The asthmatic inpatients had higher rates of sensitization and exposure to mite, cat, and dog allergen than the control groups. Sensitization per se was not a significant risk factor for hospital admission, but the combination of sensitization and exposure to one or more allergens was strongly related to hospitalization: odds ratio (OR) 3.2. Viral detection alone was not a significant factor. However, the concomitant presence of sensitization and high exposure to allergens plus detection of viruses was strongly related to hospitalization for asthma: OR 5.8

Allergen exposure and viral infection may act together in the development of adult asthma exacerbations severe enough to require hospital admission. Interventions to prevent such asthma attacks should focus on both viruses and allergen exposure. The clinical findings are consistent with experimental studies showing a synergistic interaction between viral infection and allergic inflammation.

COMMENT: *We have all seen our allergic asthmatic patients get sicker during viral respiratory illnesses. Previous investigators have demonstrated a synergistic effect of segmental allergen challenge in the lung with rhinoviral infections. This study from England uses statistical analysis to show the importance of allergen sensitization plus exposure as synergistic with viral respiratory infections in triggering hospitalizations for asthma. Those patients with both sensitization and a high level of allergen exposure were almost twice as likely to be hospitalized for asthma: OR 1.48 for mite sensitivity compared to 2.38 for high-level exposure to mites. When allergen sensitivity and exposure were combined with the presence of viruses the OR almost doubled again, to 5.8. This study makes a good case for not only reducing allergen exposure, but also reducing viral illnesses in our allergic asthmatic patients.*
S. M. F.
Green RM, Custovic A, Sanderson G, et al: Synergism between allergens and viruses and risk of hospital admission with asthma: case-control study.
BMJ 324:1-5, 2002. ♦♦

Atopic Asthma Patients Have Abnormal Type 1 Response to Rhinovirus

RHINOVIRUS (RV) infection frequently triggers asthma attacks, but the mechanisms of this effect are unclear. Previous findings have suggested that the heightened responsiveness of asthmatic patients to RV infection might reflect an imbalance between type 1 and 2 cytokines. This in vitro study compared the type 1 and 2 cytokine response to RVs in asthmatic and normal subjects.

The investigators obtained peripheral blood mononuclear cells (PBMCs) from atopic patients with mild to moderate asthma and from normal controls. Rhinovirus-16 was added to the cells at final concentrations of 10.0 to 0.01 infectious units/cell. Both groups of PBMCs showed dose-dependent increases in interferon-γ (IFNγ) and interleukin (IL)-10 and IL-12 production in response to RV-16. A moderate increase in IL-13 was noted as well.

The IFNγ and IL-12 response was lower in the asthmatic group, while the IL-10 response was higher. Interleukin-4 was induced only in PBMCs from asthmatic patients, not from controls. The ratio of IFNγ to IL-4 was 3-fold lower in the asthmatic group than in the control group.

The PBMC response to RVs appears to involve both a type 1 and type 2 cytokine response, not just type 1 as previously suggested. Cells from patients with atopic asthma show an abnormal response that is similar--though not identical--to their response to allergen. The defective type 1 response to RV in patients with atopic asthma might play a role in development of asthma exacerbations, with promotion of type 2 inflammation and an inadequate type 1 antiviral immune response.

COMMENT: *This group has published extensively on the relationship between RV infection and asthma exacerbations. They have previously demonstrated a significant influx of CD4 and CD8 lymphocytes into the bronchial mucosa after RV infection. Their recent experiments show that the immune response to RVs is defective in atopic asthmatics, with a shift to a type 2 phenotype similar to the response to allergen. This results in decreased virus clearance and development of asthma exacerbations via type 2 inflammation. The plot continues to thicken.*
E. J. B.
Papadopoulos NG, Stanciu LA, Papi A, et al: A defective type 1 response to rhinovirus in atopic asthma.
Thorax 57:328-332. ♦♦

Study Shows Loss of Lung Elastic Recoil in Moderate to Severe Asthma

EVEN with medical treatment, many patients with chronic asthma develop airway remodeling and irreversible expiratory airflow limitation, which have been attributed to persistent inflammation. In a previous study, the authors found significant and unexpected loss of elastic recoil in patients with chronic stable ➤➤

asthma. The progression and mechanism of expiratory airflow limitation were studied in a group of asthma patients with long-term spirometric follow-up.

The study included 21 asthmatic outpatients who had undergone serial lung function studies for more than 5 years. Each patient underwent measurement of maximum expiratory airflow-volume curves, static lung elastic recoil, coefficient of retraction, maximum expiratory airflow-static lung elastic recoil pressure curves, and maximum inspiratory and expiratory mouth pressures, as well as lung CT scanning. All had clinically stable disease, classified as mild persistent asthma in 5 patients, moderate persistent asthma in 11, and severe persistent asthma in 5.

Lung CT scans showed absent or minimal emphysema. At total lung capacity, patients with moderate and severe persistent asthma had significant reductions in maximal static lung elastic recoil and coefficient of retraction. Lung elastic recoil was 16 and 15 cm H_2O, respectively, in patients with moderate and severe persistent asthma vs 22 cm H_2O in those with mild asthma. In all subgroups, measured values for FEV_1 were consistent over time. For patients with moderate and severe asthma, loss of elastic recoil accounted for 46% to 71% of total expiratory airflow limitation.

Patients with clinically stable, moderate to severe persistent asthma show significant reductions in lung elastic recoil, even with optimized medical therapy. The mechanism of loss of lung elastic recoil, which explains much of the patients' total loss of expiratory airflow, is unknown. Decreased maximal expiratory airflow resulting from reduced elastic recoil may be an early event in chronic asthma.

COMMENT: *In the early 1990s, airway inflammation emerged as a central concept in the pathogenesis of asthma. Over 10 years later, there is increasing evidence that airway remodeling may not be the only mechanism leading to irreversible changes in the asthmatic airway. Patients with chronic asthma despite adequate therapy may also experience airway obstruction due to a loss of lung elastic recoil. Uncovering the cause(s) of this structural defect could have significant implications in asthma treatment. Asthma may not be a disease process of just the airway!*
A. L. L.

Gelb AF, Licuanan J, Shinar CM, Zamel N: Unsuspected loss of lung elastic recoil in chronic persistent asthma. **Chest** 121:715-721, 2002.

♦♦

What's New on Pet Exposure and Development of Asthma?

OVER the past few years, reports have suggested that exposure to pets early in life may reduce the risk of later sensitization and allergic disease. The relationship between early and current pet ownership and allergic sensitization and symptoms was examined in a large population of schoolchildren.

The analysis included a total of 2,729 Dutch primary schoolchildren. Symptoms of asthma and allergic disease were assessed using The International Study on Asthma and Allergies in Childhood questionnaire. Parents also provided information on current and past pet ownership, including the first few years of the child's life. Bronchial responsiveness and sensitization to common allergens were assessed as well. Relationships with pet exposure were tested separately for cats, dogs, rodents, and birds.

Fourteen percent of children had pets in the past but not currently, while 26% had never had a pet during their lives. Forty-one percent of families had pets during the first 2 years of the child's life, with 36% having cats or dogs. Children who currently had pets at home had lower rates of sensitization and hay fever symptoms, compared with those who never had pets. Odds ratios for sensitization were 0.69 for cat allergen, 0.63 for dog allergen, 0.64 for indoor allergens in general, and 0.60 for outdoor allergens.

Rates of bronchial hyperresponsiveness and asthma did not differ significantly between pet ownership groups. Children with past exposure to pets did not have had lower rates of sensitization but did have an increased prevalence of asthma. Children exposed to pets during the first 2 years of life had a moderately increased risk of pollen sensitization.

Children who currently have pets at home have lower rates of allergic sensitization and hay fever. This inverse relationship may at least partly reflect removal of pets from homes with allergic children. This hypothesis is strengthened by the finding of a positive association between pet ownership and asthma.

COMMENT: *Recent studies have defied longstanding dogma by suggesting that exposure to pets early in life may actually reduce subsequent allergic sensitization. In this large Dutch study of schoolchildren, current pet ownership was negatively associated with sensitization and associated allergic disease. However, the highest proportion of sensitization was found in children who had previous exposure to pets. The authors conclude the removal of pets from the homes of sensitized children contributes to the apparent "protection" afforded by pet ownership. The accompanying editorial critiques this study and reviews the recent literature.*
S. A. T.

Anyo G, Brunekeef B, de Meer G, et al: Early, current and past pet ownership: associations with sensitization, bronchial responsiveness and allergic symptoms in school children. Clin Exp Allergy 32:361-366, 2002.
Platts-Mills TAE, Perzanowski M, Woodfolk JA, Lundback B: Relevance of early or current pet ownership to the prevalence of allergic disease (editorial).
Clin Exp Allergy 32:335-338

♦♦

RECENT studies of the effects of pet exposure on asthma risk in children have yielded conflicting results. This relationship was evaluated in a large, population-based study, including the potential modifying effect of parental allergy and asthma.

From an area in Southern Finland with a population of 441,000, the investigators identified all 521 adults, aged 21 to 63 years, with newly diagnosed asthma over a 2.5-year period. Nine hundred thirty-two population controls were randomly selected. Information on past and current exposure to hairy pets was gathered by questionnaire.

On logistic regression analysis, asthma risk was ➤➤

significantly lower for subjects who had pets during the previous year, adjusted odds ratio (OR) 0.74. In contrast, subjects who reported having pets more than 1 year previously were at higher risk of asthma, OR 1.39. Parental atopy was also significantly related to asthma risk, OR 1.88. However, family history showed no interaction with pet exposure.

Both pet exposure and parental atopy are significant risk factors for adult-onset asthma. Parental atopy has no modifying effect on the risk of pet exposure. Studies showing a reduced risk of asthma in current pet owners may reflect avoidance of pets by people with allergy symptoms.

COMMENT: *It is not known for certain whether pet exposure in early childhood promotes or reduces the risk of developing asthma. This case-control study compared all new cases of asthma in 21- to 63-year-old adults in South Finland to controls regarding current and past exposure to hairy or feathered pets at home. The researchers found that prior pet exposure* increased *the risk of adult asthma (OR 1.39).*
R. J. M.

Jaakkola JJK, Jaakkola N, Piipari R, Jaakkola MS: Pets, parental atopy, and asthma in adults.
J Allergy Clin Immunol 109:784-788, 2002. ♦♦

Inhaled Steroids for Asthma: How to Determine the Appropriate Dose?

GUIDELINES for asthma management recommend using the lowest effective dose of inhaled corticosteroids (ICS), based on symptoms and spirometric results. However, there are few long-term data on how ICS treatment affects airway physiology and bronchial hyperreactivity (BHR). The relationships among spirometry, airway inflammation and remodeling, and BHR in asthma were assessed, before and after high-dose ICS therapy.

The randomized, controlled trial included 35 patients with mild to moderate, symptomatic atopic asthma. After a 2-week run-in period, patients were randomized to receive inhaled fluticasone propionate, 750 µg bid, or placebo. Before treatment and after 3 and 12 months, the patients underwent skin-prick tests, spirometry and methacholine challenge testing, and bronchoscopy with bronchoalveolar lavage (BAL) and airway biopsy. Twenty-two healthy subjects were studied as controls.

At baseline, the asthmatic patients had higher values for BAL eosinophils, mast cells, and epithelial cells and for subepithelial basement membrane thickness. Forty percent of the variability in BHR was explained by multiple regression analysis: 21% was attributed to reticular basement membrane thickness, 11% to BAL epithelial cells, and 8% to BAL eosinophils.

After 3 months of ICS treatment, BHR improved significantly, with a 2.1 doubling-dose change in methacholine PD_{20} concomitant with reduced airway inflammation. From 3 to 12 months, there was an additional improvement of 4.1 doubling doses, in association with a significant decrease in reticular basement membrane thickness. Overall, early changes in airway inflammation explained one-third of the total improvement in BHR. The rest was related to later improvements in airway remodeling.

Inhaled corticosteroid therapy for asthma produces interrelated but not simultaneous improvements in airway physiology, inflammation, and remodeling. Long-term treatment is needed for maximal gains in remodeling and BHR. If the patients in this study had been treated under current guidelines, ICS treatment would have been titrated downward according to symptomatic and spirometric findings, before the BHR and remodeling benefits occurred.

COMMENT: *Current guidelines for the treatment of asthma advocate the lowest possible dose of ICS consistent with good clinical control. This study stresses the need for early as well as long-term intervention with ICS even in mild asthmatics. The authors stress the wisdom of longitudinal testing of BHR, which is a better surrogate for both airway inflammation and remodeling and a better index of more effective asthma control. This observation will require further verification, since it will add considerable expense to the ongoing surveillance of patients with asthma.*
E. J. B.

Ward C, Pais M, Bish R, et al: Airway inflammation, basement membrane thickening and bronchial hyperresponsiveness in asthma.
Thorax 57:309-316, 2002. ♦♦

Car Seats Show High Levels of Mite and Pet Allergens

PREVIOUS studies have demonstrated significant levels of dog and cat allergens in public places where no pets are present. These and other allergens may be picked up on clothing from reservoir locations and carried to other locations. This study examined the presence of mite and pet allergens on clothing and automobile seats.

The 2-year study included 87 Ohio households from which dust samples were collected on one to five occasions. These samples were analyzed for the presence of dust mite, dog, and cat allergen. The samples were averaged and paired with samples from automobiles from the same household and from clothing of the cars' drivers.

Of the total 198 home samples collected, 97.5% contained mites. Most samples from automobile seats contained low levels of live and dead mites, as did 16% of samples from clothing. Levels of mite allergen were greater than 2 µg/g of dust in 72% of home samples and greater than 10 µg/g in 50%. Twenty-three percent of automobile samples had mite allergen levels of greater than 2 µg/g of dust; the mean Der 1 level in cars was 1.3 µg/g. Levels of dust mite allergen in cars were not significantly different for houses with vs without pets.

Levels of cat and dog allergen in automobiles were significantly higher in homes with pets. Homes without pets had average levels of 93 µg/g for cat allergen and 29 µg/g for dog allergen, more than sufficient to cause allergic sensitization and symptoms. Most clothing samples contained detectable but low levels of pet allergens. ➤➤

The results show significant concentrations of mites and mite and pet allergens in automobile seats and on clothing, whether or not pets are present in the household. Cars and clothing may play an important role in allergen dispersal between locations.

COMMENT: *Classrooms, department stores, daycare centers, and now automobile interiors are potential sites of exposure to allergens usually considered to be domestic. A surprising finding was that dog and cat allergens were detected at clinically significant concentrations even in automobiles belonging to individuals without domestic animals. This again emphasizes that animal allergens are almost ubiquitous in our daily lives. The total amount of detected automobile dust was low despite the relative concentration of animal and dust mite allergens. Thus far the clinical significance of auto exposure in developing sensitivity or symptoms has not been defined.*
D. K. L.
Neal JS, Arlian LG, Morgan MS: Relationship among house-dust mites, Der 1, Fel d 1, and Can f 1 on clothing and automobile seats with respect to densities in houses.
Ann Allergy Asthma Immunol 88:410-415, 2002. ♦♦

Study Supports Rush Immunotherapy Protocol for Fire-ant Hypersensitivity

RED and black imported fire ants (IFAs) have spread throughout the southern United States, and hypersensitivity to IFA stings is an increasing cause of morbidity and mortality. Conventional immunotherapy protocols using whole-body extract has proven effective in the treatment of IFA hypersensitivity, but there are no data on the use of rush immunotherapy (RIT). This study assessed the effectiveness of a RIT protocol using whole-body extract for the treatment of IFA hypersensitivity, including the role of prophylactic pretreatment.

Fifty-eight adult patients with confirmed IFA hypersensitivity were randomized to active or placebo premedication protocols. The premedication group received twice-daily terfenadine 60 mg, ranitidine 150 mg, and prednisone 30 mg started 2 days before RIT. In the 2-day RIT protocol, hourly injections were given to achieve a final dose of 0.3 mL 1:100 wt/vol. Patients returned for additional injections at 8 and 15 days. On day 22, the patients' reactions to a pair of IFA sting challenges were assessed.

The rate of mild systemic reactions during the RIT protocol was 5.2%, with no significant difference between patients receiving active vs placebo pretreatment. Just 1 of 56 patients showed a mild systemic reaction on follow-up IFA sting challenge, for an efficacy rate of 98.2%.

A 2-day RIT protocol for IFA hypersensitivity using whole-body extract is safe and effective. With or without prophylactic antihistamines and steroids, the rate of mild systemic reactions is low.

COMMENT: *Imported fire ants are becoming more of a problem, particularly here in the South. This small study of 59 patients uses IFA sting challenge to reaffirm the efficacy of immunotherapy. The authors also confirm the safety of RIT and conclude that premedication with antihistamines and steroids does not reduce the rate of systemic reactions. Only 1 patient receiving pretreatment and 2 patients receiving placebo had systemic reactions during the RIT protocol. The take-home message is that RIT is useful and we will probably be seeing more widespread use of this technique, although the utilization of pretreatment is probably the most conservative course at this time.*
S. M. F.
Tankersley MS, Walker RL, Butler WK, et al: Safety and efficacy of an imported fire ant rush immunotherapy protocol with and without prophylactic treatment.
J Allergy Clin Immunol 109:556-562, 2002. ♦♦

Asthmatic Students Show Increased Inflammatory Markers Under Stress

ACUTE stress is thought to be a contributor to asthma exacerbations. The mechanisms of this relationship are unknown, although effects on the inflammatory and immune processes may play a role. The effects of a stressful event on the airway inflammatory response to antigen were studied in young adults with asthma.

The randomized, crossover trial included 20 college students with mild asthma. The students were studied on two occasions, one of which was during final examinations week. At each time, the subjects provided information on their psychological state and performed an inhaled antigen challenge. Sputum inflammatory markers and plasma cortisol levels were measured as well.

The lung function response to antigen was similar during the two periods, with drops of about 20% in FEV_1. The students had a small but significant rise in emotional distress during exam week, with no significant increase in plasma cortisol. Antigen-induced increases in sputum leukocyte counts, percentage of sputum eosinophils, and sputum eosinophil-derived neurotoxin level were significantly greater during the high-stress period. There was a significant inverse correlation between sputum eosinophil count and the percentage change in FEV_1 after antigen challenge. Scores for anxiety and depression were significantly elevated during the high-stress period.

Asthmatic college students under stress show significant increases in sputum inflammatory markers, which are correlated with antigen-induced reductions in FEV_1. Stress may contribute to an increased airway inflammatory response to antigen, and thus to increased asthma severity.

COMMENT: *Most clinicians appreciate the relationship between psychological stress and asthma exacerbations. Yet only recently has the mechanism been proposed to involve altered immunoregulatory pathways in response to the stressor. This study looked at the impact of high vs low stress periods on sputum inflammatory markers in atopic college student asthmatics in response to inhaling specific allergens. An increase in inflammatory markers as well as inflammatory* ➤➤

cells and cytokines was observed in the high-stress compared to the low-stress group. This supports the notion that psychological stress can alter immune balance to favor Th2-specific immune responses such as asthma.
G. D. M.
Liu LY, Coe CL, Swenson CA, et al: School examinations enhance airway inflammation to antigen challenge
Am J Respir Crit Care Med 165:1062-1067, 2002. ♦♦

SLIT for Grass Pollen Allergy: Placebo-Controlled Trial

SUBLINGUAL immunotherapy (SLIT) offers advantages over conventional injection immunotherapy in terms of safety and patient acceptability. However, studies have not demonstrated equivalent efficacy. The safety and efficacy of SLIT for the treatment of grass pollen-induced seasonal rhinoconjunctivitis were evaluated in a randomized, placebo-controlled trial.

Fifty-six adult patients with seasonal allergic rhinoconjunctivitis and a positive skin-prick test to grass pollen were randomized to active or placebo SLIT. Treatment lasted for 12 to 18 months. The two treatments were compared for their effects on seasonal symptoms and medication use; conjunctival and intradermal provocation testing and serum antibody measurements were performed as well.

Symptom scores were reduced by 28% and use of rescue medication by 45% in the SLIT group, though the difference compared with the placebo group was nonsignificant. On patients' overall assessments, the severity of hay fever compared with previous years was significantly reduced in the SLIT group. At the end of treatment, the late response to intradermal allergen was one-third smaller in the SLIT group than in the placebo group.

Grass pollen SLIT does not significantly reduce symptom and medication scores in patients with seasonal allergic rhinoconjunctivitis, compared with placebo. However, active immunotherapy is associated with a significant improvement in the overall assessment, compared with previous years. The study provides evidence that SLIT inhibits the late skin response while increasing the serum IgG4:IgE ratio. The authors call for larger, dose-ranging studies of SLIT for grass pollen allergy.

COMMENT: *Sublingual immunotherapy is widely prescribed by subsets of our otolaryngology colleagues in the United States and is attractive because of its safety. However, most controlled studies over the years have clearly shown conventional subcutaneous immunotherapy to have superior efficacy. This study was thoughtfully designed to identify both clinical and immunologic effects and included a maintenance dose of allergen extract more than 40 times that used in conventional immunotherapy. While immunologic effects were observed, the failure of this treatment to reduce symptoms and medication usage underscores the challenge faced in legitimizing this form of therapy for widespread use.*
S. A. T.
Lima MT, Wilson D, Pitkin L, et al: Grass pollen sublingual immunotherapy for seasonal rhinoconjunctivitis: a randomized controlled trial.
Clin Exp Allergy 32:507-514, 2002. ♦♦

How Do Diagnostic Tests for Asthma Compare?

VARIOUS objective tests play a role in the diagnosis of asthma, but few studies have compared the diagnostic performance of these tests. An important factor influencing a test's effect on the probability of asthma is how often it is positive in patients with asthma compared to those with other conditions that may be confused with asthma. The performance of various tests was compared in patients with asthma, patients with "pseudoasthma," and healthy controls.

The cross-sectional study included 69 patients with asthma and 20 patients with pseudoasthma--ie, who were referred with clinical symptoms of asthma but who proved to have other diagnoses. A control group of 21 healthy subjects was studied as well. On two study days, each subject underwent spirometry, skin prick testing, peripheral blood eosinophil counts, methacholine challenge, and other investigations. The various test results were compared for their diagnostic performance.

The best diagnostic indicators were the methacholine PC_{20}, with a sensitivity of 91% and specificity of 90%; and sputum eosinophil count, sensitivity 72% and specificity 80%. No patient with asthma had normal airway responsiveness with a normal sputum eosinophil count, and no patient in the pseudoasthma group had abnormal findings on both of these tests. For most tests, specificity was less in comparison with the pseudoasthma group than with the healthy control group. The bronchodilator response to albuterol and the maximum peak expiratory flow amplitude percent mean did not perform well in differentiating asthma from pseudoasthma.

Airway responsiveness to methacholine appears to be the most sensitive diagnostic test for asthma, followed by the sputum differential eosinophil count. Methacholine PC_{20} is the only result that reliably distinguishes between asthma and conditions with a similar clinical appearance.

COMMENT: *How does a clinician diagnose asthma? As we all know, there are many ways to diagnose and follow the progress of the asthmatic patient. This study assesses the best test to diagnose asthma. Several methods were evaluated, including methacholine challenge, daily peak flow variation, FEV_1/forced vital capacity ratio, FEV_1 reversibility, sputum eosinophil count, and blood eosinophil count. Second prize goes to the sputum eosinophil count (72% sensitivity and 80% specificity). FEV_1 reversibility was significantly lower, unfortunately--only 37.5% sensitivity and 59% specificity. And the winner is methacholine challenge. The methacholine challenge is a very reliable study with 91% sensitivity and 90% specificity.*
A. L. L.
Hunter CJ, Brightling CE, Woltmann G, et al: A comparison of the validity of different diagnostic tests in adults with asthma.
Chest 121:1051-1057, 2002. ♦♦

Greenhouse Workers Have High Rates of Occupational Asthma

DATA from the 2000 European Farmers' Study suggested a new occupational group at risk for asthma: workers involved in growing greenhouse flowers or ornamental plants. A group of these workers were studied to assess their rates of asthma and sensitization to allergens in the greenhouse setting.

The study included a random sample of 40 growers of greenhouse flowers and occupational plants. History of respiratory symptoms and occupational details were assessed by questionnaire, and patients underwent lung function studies and skin tests. In field studies, the greenhouse characteristics were assessed and levels of contaminants were measured, including dust, endotoxin, and microorganisms.

Thirty-one workers participated, 3 of whom had occupational asthma confirmed by bronchial provocation challenge. All 3 workers with asthma were sensitized to flowers or molds found in the greenhouse setting, whereas no cases of asthma were found among nonsensitized workers. Poor ventilation slightly increased the risk of wheezing.

Overall, 34% of workers were sensitized to flowers or molds. The sensitization rate was not significantly associated with any greenhouse characteristics.

Workers who cultivate greenhouse flowers or ornamental plants have a high rate of sensitization to flowers or molds. About one-fourth of sensitized workers--or 8% of the group overall--have occupational asthma. Dust and endotoxin in greenhouses do not appear to play a significant role in causing these symptoms.

COMMENT: *In this important observational cohort study from Europe, flower and plant growers appear to be at definite risk for the development of occupational asthma. These observations remind us that occupational asthma can affect many workers with multiple allergen exposure and that sensitization appears to be a definite risk factor.*
A. M.

Monsó E, Magarolas R, Badorrey I, et al: Occupational asthma in greenhouse flower and ornamental plant growers.
Am J Respir Crit Care Med 165:954-960, 2002. ♦♦

New Herbal Medications for Allergic Rhinitis? Butterbur and Biminne

BUTTERBUR is an herb that contains a mix of petasins which inhibit leukotriene biosynthesis. Butterbur extracts have been used to treat conditions including bronchial asthma and smooth muscle spasms. Butterbur was compared with the antihistamine drug cetirizine for the treatment of seasonal allergic rhinitis.

One hundred twenty-five adult patients with seasonal allergic rhinitis were randomized to receive butterbur, given in the form of petasites carbon dioxide extract ZE 339, one tablet four times daily; or cetirizine, one 10 mg tablet per day. Both treatments continued for 2 weeks. Outcomes were assessed using the medical outcome health survey questionnaire (SF-36) as well as the physician's clinical global impression.

The two groups had similar scores on the SF-36, with none of the scores being more than 10% worse with butterbur than cetirizine. Median score on the clinical global impression scale was 3 in both groups. The two treatments had a similar overall rate of adverse effects. Two-thirds of patients taking cetirizine reported drowsiness and fatigue characteristic of antihistamines, even though cetirizine is considered a nonsedating antihistamine.

The results suggest equivalent outcomes with butterbur vs cetirizine in patients with seasonal allergic rhinitis. Butterbur may be a useful alternative to avoid the sedative effects of antihistamines.

COMMENT: *Butterbur (*Petasites hybridus*) is an Asteraceae herbaceous plant native to Europe and Asia. Its leaves and roots contain sesquiterpines, which inhibit leukotrienes. This relatively large study compared butterbur (8 mg) four times daily with cetirizine 10 mg at night. Outcome measures included the SF-36 questionnaire and global impression scale. Effects of these compounds were similar in each group, and if confirmed in future prospective studies could be considered a viable treatment. The major weakness is butterbur's short duration of action.*
E. J. B.

Schapowal A, on behalf of the Petasites Study Group: Randomised controlled trial of butterbur and cetirizine for treating seasonal allergic rhinitis.
BMJ 324:144-146, 2002. ♦♦

PATIENTS and researchers are increasingly interested in the effectiveness of various forms of complementary and alternative medicine. Few studies have examined the benefits of traditional Chinese medicine for patients with allergic disease. The Chinese herbal medication Biminne was evaluated as a treatment for perennial allergic rhinitis.

Fifty-eight patients with moderate to severe perennial allergic rhinitis were randomized to receive Biminne or placebo, five capsules per day for 12 weeks. Biminne was a formulation consisting of 11 different traditional Chinese herbs, all listed as fit for human consumption by the Australian Therapeutic Goods Administration. Symptoms, quality of life scores, and patients' and physicians' evaluations were compared between groups. At 1 year's follow-up, 22 patients from the placebo group took part in a randomized, double-blind, dose-response study.

Fifty patients completed the study. The Biminne group showed consistent trends toward reduced symptoms, with a significant reduction in sneezing. Trends for rhinorrhea, itchy nose, and itchy eyes were not significant, and there was no difference in nasal congestion. Patients' and physicians' ratings also favored Biminne.

One-year follow-up suggested partial maintenance of Biminne's treatment benefits. In the dose-response study, Biminne was effective at half strength as ➤➤

well as full strength and was associated with reduction in total serum IgE.

The Chinese herbal formulation Biminne appears to have benefits in the treatment of perennial allergic rhinitis. The mechanism of Biminne's effects is unknown; in Eastern medicine, efficacy is believed to result from the overall composition of the mixture used, rather than any single active component.

COMMENT: *Integrative medicine is and will continue to be an important issue to many of our patients. It is important to be aware of the limited data derived from placebo-controlled studies.*
A. M.
Hu G, Walls RS, Bass D, et al: The Chinese herbal formulation Biminne in management of perennial allergic rhinitis: a randomized, double-blind, placebo-controlled, 12-week clinical trial.
Ann Allergy Asthma Immunol 88:478-487, 2002. ♦♦

AAP Issues Guidelines for Obstructive Sleep Apnea in Children

OBSTRUCTIVE sleep apnea syndrome (OSAS) is a common problem in children. Serious complications may occur without treatment, yet there is no generally accepted approach to evaluation and management of this problem. The American Academy of Pediatrics offers a clinical practice guideline for recognition, diagnosis, treatment, and follow-up of OSAS in children.

Recommendations were formed by an expert panel, based on evidence from the literature. All children should be screened for snoring as part of routine health visits. For children who snore nightly, a more detailed history and physical examination are indicated. Specialist evaluation is warranted for high-risk children in complex condition. Children with cardiorespiratory failure are not covered by the guideline; these patients will likely receive specialist care in the ICU setting.

History and physical examination cannot reliably distinguish between primary snoring and OSAS. The gold standard for diagnosis is polysomnography, which also provides useful information on disease severity. Videotaping, nocturnal pulse oximetry, and daytime nap studies may help to differentiate OASA from primary snoring in children with positive results on polysomnography.

For most children with OSAS, adenotonsillectomy is the initial treatment of choice. If surgery is unsuccessful or the child is not an appropriate surgical candidate, continuous positive airway pressure may be used. Other adjunctive treatments have received little attention in the research. Certain groups of high-risk patients should receive inpatient monitoring postoperatively. After surgery, all patients should be re-evaluated to determine whether additional treatment is required. High-risk patients should receive objective follow-up testing.

These research-based clinical recommendations will promote optimal evaluation and management of children with OSAS. The article includes an algorithm for the diagnosis and management of otherwise healthy children with uncomplicated OSAS associated with adenotonsillar hypertrophy and/or obesity.

COMMENT: *There is an increasing awareness of the number of children who suffer from obstructive sleep apnea. This condition has the potential to lead to several severe complications. Unlike adults, children often improve after adenotonsillectomy. Although this practice guideline provides good recommendations for the management of obstructive sleep apnea, allergic rhinitis with the potential for significant upper airway obstruction should also be considered. Many children who also suffer from allergic rhinitis and its complications, including obstructive sleep apnea, are not recognized.*
A. L. L.
American Academy of Pediatrics, Section on Pediatric Pulmonology, Subcommittee on Obstructive Sleep Apnea Syndrome: Clinical practice guideline: diagnosis and management of childhood obstructive sleep apnea syndrome.
Pediatrics 109:704-712, 2002. ♦♦

Can Exhaled Breath Condensates Be Used to Monitor Asthma Inflammation?

LEUKOTRIENES (LTs), prostaglandins (PGs), and other eicanosoids are thought to play a key role as inflammatory mediators in asthma. Previous studies of eicanosoids in asthma have generally used invasive techniques or have measured plasma or urine eicanosoid levels. This study attempted to measure eicanosoid levels in noninvasively collected exhaled breath condensates (EBCs).

The cross-sectional study included 15 steroid-naive patients with mild asthma as well as 12 healthy nonsmokers. Exhaled breath condensates were collected using a specially designed condensing chamber, and eicanosoid concentrations were measured using specific enzyme immunoassay kits. Differences in eicanosoid levels between patients and controls were evaluated and the correlation between exhaled eicanosoid levels and exhaled nitric oxide (NO) were assessed.

Mean level of LTE_4-like immunoreactivity was 33.0 pg in patients with asthma vs 13.0 pg in controls. Level of LTB_4-like immunoreactivity was 88.9 vs 38.8 pg, respectively. Exhaled NO levels were also higher in asthmatic patients than controls, 17.8 vs 5.3 ppb. In the asthma group, exhaled LTE_4 was significantly correlated with exhaled NO.

Levels of LTE_4-like immunoreactivity in EBCs are elevated about 3-fold in steroid-untreated patients with mild asthma, compared with healthy controls. The findings support the involvement of cysteinyl leukotrienes in the pathophysiology of asthma, and suggest that EBCs could provide a new, noninvasive technique of monitoring asthmatic airway inflammation. The study is the first to document measured levels of PGE_2-like immunoreactivity in EBCs from healthy and asthmatic subjects.

COMMENT: *What's new in this report is the use of a noninvasive technique to investigate the role of eicanosoids in asthma. Exhaled breath conden-* ➤➤

sates could reflect the pulmonary airway lining and may be useful for measuring inflammation in the lung. It was of interest that there appears to be correlation with NO exhalation, particularly for exhaled LTB_4. Although there appears to be a certain amount of individual variability with this technique, the authors suggest that EBC may be useful in predicting inflammation in patients with even mild symptoms. It would certainly be helpful if this technique is confirmed to be useful in directing or monitoring anti-inflammatory therapy in our asthmatic patients.
S. M. F.
Montuschi P, Barnes PJ: Exhaled leukotrienes and prostaglandins in asthma.
J Allergy Clin Immunol 109:615-620, 2002. ♦♦

REVIEWS OF NOTE

Bachert C: The role of histamine in allergic disease: re-appraisal of its inflammatory potential.
Allergy 57:287-296, 2002.

COMMENT: *This is an excellent overview on the new developments and understanding of the role of histamine in allergic disease. It seems histamine plays a very central role in so many allergic diseases that a comprehensive, up-to-date understanding of its properties is essential.*
E. J. B.

Sampson HA: Peanut allergy.
N Engl J Med 346:1294-1299, 2002.

COMMENT: *With apologies to "Mary" of the movie title, there's something about* peanuts. *They, among the legumes, stand out as the most allergic and lethal. The same is true among the nuts. But not all peanut-derived products contain allergens and not all people with peanut-specific IgE are clinically reactive. Immunotherapy with engineered epitopes and the use of anti-IgE are promising treatments. This clinical review is must reading for all allergists.*
R. J. M.

Custovic A, Murray CS, Gore RB, Woodcock A: Controlling indoor allergens.
Ann Allergy Asthma Immunol 88:432-442, 2002.

COMMENT: *This is a thorough review of the world's literature related to indoor environmental control. A rigorous analysis, similar to that used by the Cochrane data base, was used to determine the proven efficacy of the studied environmental control measures. The result is a review that most practicing allergists will find useful. The problem is that more questions are raised than answers given about selecting patients who will likely benefit, quantifying the probability of improvement, and determining the cost-effectiveness of recommendations.*
D. K. L.

Ballow M: Primary immunodeficiency disorders: antibody deficiency.
J Allergy Clin Immunol 109:581-591, 2002.

COMMENT: *Dr. Ballow presents an excellent review of the humoral antibody deficiencies. It is clear and concise and covers the background, differential diagnosis, evaluation, and management of all types of antibody deficiencies. Not only will this review be helpful for the practicing allergist, but it should be considered required reading for the fellow facing a Board exam.*
S. M. F.

Palmer LJ, Silverman ES, Weiss ST, Drazen JM: Pharmacogenetics of asthma.
Am J Respir Crit Care Med 165:861-866, 2002.

COMMENT: *The field of pharmacogenetics has expanded exponentially over the previous decade. While the authors have reviewed the state of the art with regards to asthma, they point out that our current understanding exceeds the available clinical applications. There is little question that this field of research will lead to better and safer drug development and applications.*
A. M.

American College of
Allergy, Asthma & Immunology
85 West Algonquin Road, Suite 550
Arlington Heights, IL 60005-4425

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