Asthma Management Program Set to Go Online

BY MITCHEL L. ZOLER
Philadelphia Bureau

PHILADELPHIA — A new Internet-based initiative will soon give specialty and primary care physicians an electronic tool to ensure patients' asthma management follows revised national guidelines.

A team of physicians assembled by the American Academy of Allergy, Asthma, and Immunology (AAAAI) designed the Asthma Specialist Tool to Help Manage Asthma and Improve Quality (ASTHMA IQ), which can be found at www.asthmaiq.org.

The group created the online program in response to an appeal by the National Heart, Lung, and Blood Institute to improve physician and patient compliance with the asthma diagnosis and management guidelines of the National Asthma Education and Prevention Program (NAEPP). The third edition of these guidelines was released last November (J. Allergy Clin. Immunol. 2007;120:S94-138).

The NAEPP guidelines "are very complicated, and personalizing them for patients is sometimes not easy," said Dr. William W. Busse, chairman of the NAEPP guidelines committee, and professor and chairman of medicine at the University of Wisconsin, Madison. "The ASTHMA IQ program allows you to do this quickly, says why you do it, and, most importantly, says what to do for follow-up."

As of mid-March, the Web-based program was available only to members of the AAAAI. But it also plans to create modified versions of the program for primary care physicians who care for asthma patients, including pediatricians and family practice physicians, said Dr. Thomas B. Casale, AAAAI president, in a press briefing during the academy's annual meeting.

"ASTHMA IQ will help clinicians implement the guidelines. It helps guide a physician to the right assessment and level of control for a patient, and it explains why a patient should be at a certain level of control," said Dr. Casale, professor of medicine and chief of allergy and immunology at Creighton University, Omaha, Neb.

"The asthma treatment guidelines only help if they're implemented. We hope that ASTHMA IQ will help with practical implementation in physicians' offices," said Dr. Michael Schatz, a member of the NAEPP committee, cochair of the task force that developed ASTHMA IQ, and chief of allergy at Kaiser Permanente Medical Center in San Diego. "Right now, ASTHMA IQ is a tool for asthma specialists, allergists, and pulmonologists; but there is interest in adapting a similar tool for the primary care setting."

The AAAAI physicians who developed ASTHMA IQ plan to work with pediatrics and family practice societies to produce versions of the program that are appropriate for use by non–asthma specialists. The AAAAI decided to make ASTHMA IQ available to all physicians without charge, Dr. Casale said at the press briefing. This will be possible once modified versions are created.

When a physician first enters a patient into the ASTHMA IQ program, information is recorded on a range of clinical parameters, including the patient's asthma type, allergies, symptoms, family history, comorbidities, laboratory results, and lung function. These data are used by the program to assess the patient's asthma severity and recommend a course of treatment based on the current NAEPP guidelines.

When patients return for follow-up examinations, updated clinical data are entered, as well as information on symptom types and frequency, medication adverse effects, and treatment compliance. The program determines the degree of asthma control that has been achieved for the patient, and recommends changes in treatment.

Study results show that, at best, about 50% of American asthma patients have asthma that is well controlled. Measured by more rigorous criteria, however, the rate is closer to zero, said Dr. Schatz.

The AAAAI developed ASTHMA IQ using educational grants from Genentech Inc. and Novartis. ■

Low Vitamin D Levels in Kids Tied to Asthma Exacerbations

BY MITCHEL L. ZOLER
Philadelphia Bureau

PHILADELPHIA — Children with asthma and on treatment with inhaled corticosteroids who had insufficient blood levels of vitamin D had an increased risk of asthma exacerbations during 4 years of follow-up in a study with 305 children.

The results are only suggestive, because the study wasn't designed to assess the impact of vitamin D levels on asthma, but they warrant further study into a possible role that vitamin D might play in modifying the effect of inhaled corticosteroid in children with asthma.

The results suggest that boosting blood vitamin D levels might improve responsiveness to inhaled corticosteroids in asthmatic children, Dr. Augusto A. Litonjua said while presenting a poster at the annual meeting of the American Academy of Allergy, Asthma, and Immunology.

The study included 305 children with asthma enrolled in the inhaled-budesonide group of the Childhood Asthma Management Program. It was designed to assess the safety and efficacy of inhaled budesonide (Pulmicort), compared with nedocromil (Tilade) or placebo.

The primary outcome was the incidence of severe asthma exacerbations, defined as emergency department visits or hospitalization for asthma exacerbations. In this post hoc analysis, Dr. Litonjua, a pulmonologist at the Channing Laboratory of Brigham and Women's Hospital in Boston, and his associates measured blood levels of serum 25-hydroxyvitamin D (25[OH]D), the primary, circulating biomarker of vitamin D status, in blood specimens collected from patients 2 weeks before their randomization in the trial. The post hoc analysis did not receive any commercial funding.

Patients in the inhaled budesonide group were dichotomized by their blood 25(OH)D level. Those with a level of 30 ng/mL or less were categorized as having an insufficient level; those with greater than 30 ng/mL were considered to have sufficient vitamin D.

Sufficient levels existed in 70% of the 305 patients, and insufficient levels were in 30%; the overall average level of 25(OH)D was about 40 ng/dL. The average age of all children in the inhaled-budesonide subgroup was 9 years. About 59% of the children were boys, and 65% were white.

During follow-up, severe asthma exacerbations occurred in 24% of the children with insufficient vitamin D and in 18% of the children with sufficient vitamin D. In several analytic models that adjusted for potential confounding differences at baseline, the increased rate of exacerbations was significantly linked with vitamin D insufficiency. Adjusters included age, height, gender, pulmonary function, race, ethnicity, seasonality, and history of exacerbations in the year prior to the study.

In these adjusted models, children with insufficient vitamin D were about 70% more likely than those with sufficient vitamin D to have exacerbations. However, in a model that included all of these adjustments plus study center, the increased risk for exacerbations was no longer statistically significant, although it was 60% higher in the insufficient vitamin D group.

There are several plausible, physiologic links between vitamin D and asthma severity. Vitamin D acts on bronchial smooth muscle cells and may play a role in the airway remodeling that occurs in long-standing asthma, and the vitamin's receptors and metabolic enzymes exist both in immune cells and lung cells. ■

Explaining 'Lung Age' to Smokers Doubled Their Rate of Quitting

BY JOHN R. BELL
Associate Editor

Smokers who were told their "lung age" after spirometry had more than double the rate of quitting 12 months later than did smokers who were given only a clinical measure of lung performance, according to data from a randomized controlled trial.

Awareness of lung age seems to be as effective as is nicotine replacement, counseling, and bupropion in spurring smokers to quit—and it is also cheaper, the authors noted in their study.

Dr. Gary Parkes of the Limes Surgery, Hoddesdon, England, and colleagues enrolled 561 current smokers from five primary care practices in one English county. Patients were at least 35 years old (mean age, 53 years) and did not have a history of lung disease or use supplemental oxygen. All were given a series of spirometric tests, were advised during the visit to quit smoking, and were offered referral to a support service.

Each patient was randomized to receive one of two types of information: Those patients in the intervention group received an individualized explanation of their level of forced expiratory volume in 1 second (FEV_1), along with a verbal explanation of their lung age and a graphic explaining the concept of lung age. Lung age was calculated using a previously established formula. (See box.) Patients in the control group received only a letter indicating their FEV_1 score, with no further explanation.

In each group, the average number of cigarettes smoked daily was 17. The mean number of pack-years was 30 in the control group (281 persons) and 31 in the intervention group (280 persons).

At 12 months, there were 249 control participants, 32 having been lost to follow-up. In the intervention group, there were also 249 patients remaining, with 31 lost to follow-up. However, those lost to follow-up were included as if they had continued to smoke. In the controls, there were 18 patients (6%) who quit smoking, as verified by carbon-monoxide breath testing. In the intervention group, 38 patients quit (14%).

The investigators analyzed the data in the intervention group to determine if those with a greater lung-age deficit were more likely to quit than those with a smaller deficit or none. Contrary to previously published findings, they found no significant difference in quit rates based on disclosed lung damage, although they cautioned that the study was not powered to detect such a difference. (BMJ 2008 March 6 [Epub doi:10.1136/bmj.39503.582396.25]).

"This apparent win-win situation might explain the apparently paradoxical finding that knowing one's lung age helps a smoker to quit," the authors wrote. "If lung age is normal, there is an incentive to stop before it is too late. If lung age is abnormal, this is a clear message the lungs are undergoing accelerated deterioration that would be slowed if the smoker stopped."

The researchers disclosed no potential conflicts of interest. ■

How to Calculate a Patient's Lung Age

- **For men:** Lung age = (2.87 × height [in inches]) – (31.25 × observed FEV_1 [in liters]) – 39.375
- **For women:** Lung age = (3.56 × height [in inches]) – (40 × observed FEV_1 [in liters]) – 77.28