

ASTHMA MANAGEMENT™

The Complete Asthma Disease State Management Resource

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Everyone's dropping the ball on asthma management

Fingers pointed at managed care, physicians, and patients

“**S**hocking!” “Disturbing!” Sound like the hype from the supermarket tabloid headlines? Actually, it's the reaction from doctors and patient educators left breathless by two recent asthma surveys that show patients don't know much about their disease, they are not managing their asthma well, and their doctors are doing a dismal job of helping them.

The two surveys are *Asthma in America*, commissioned by Glaxo Pharmaceuticals, which included 2,509 asthma patients, 512 doctors, and 1,000 members of the general public; and the *Asthma Survey* by the American Lung Association, which included 781 asthma patients ages 16 and older, and 536 parents of children with asthma.

The bottom line of each: Asthma is not being controlled as well as it should be.

Experts are mostly pointing their fingers at harried primary care physicians driven by the juggernaut of managed care with little or no time to educate their patients.

Standards of care for asthma fall far short of the guidelines established by the National Heart, Lung and Blood Institute (NHLBI) in Bethesda, MD, according to the *Asthma in America* survey.

- **The national goal:** Patients should maintain normal activity levels.

KEY POINTS

- Significant numbers of surveyed asthma patients report limitations in normal physical activity, sleep disruption, and missed work or school.
- Primary care physicians take the brunt of blame for noncompliance with National Heart, Lung and Blood Institute guidelines, though managed care must shoulder some of the burden for limiting the amount of time physicians can spend with patients.
- Potential solutions include more upfront spending by payers and more communication between specialists and primary care physicians.

The survey: 48% say asthma limits their ability to take part in sports and recreation; 36% say it limits their normal physical activity; and 25% say it interferes with their social activities.

- **The national goal:** Asthma symptoms should not disrupt sleep. Thirty percent of asthma patients are awakened with breathing problems at least once a week.

- **The national goal:** no missed school or work because of asthma. The survey: Forty-nine percent of children and 25% of adults with asthma missed school or work due to the disease in the past year.

More surprisingly, the *Asthma in America* survey showed that only 9% of all patients could name an underlying cause (inflammation).

The ALA survey shows disease management is out of control; 84% of the 15 million Americans who have asthma, and 78% of parents, say it has had a negative impact on their lives.

While asthma is a major public health concern, both surveys show patients feel helpless in the face of the disease.

“Physicians are not performing any of the four components of the guidelines at anything like the level they should be,” says **Harold Nelson, MD**, senior staff physician in the Department of Medicine at the National Jewish Medical and Research Center in Denver.

He elaborates: “Physicians are deficient in terms of using objective measurements (spirometry). Physicians are under-performing in exploring the factors that make asthma worse. They are derelict in education, providing peak flow meters, and instructing people how to use them. And finally, physicians are derelict in prescribing inhaled steroids where they are appropriate.”

While Nelson’s colleagues may be less harsh, they are united in the solution: education. This means more education for doctors, nurses, pharmacists, and other health care practitioners, but primarily for patients.

In addition, some experts call on patients to take more responsibility for managing their

disease and for doctors to make patients part of their own disease management team.

“People are not taking it as seriously as they should, and they don’t need to lower their expectations in terms of standards of living,” says **Robert Mellins, MD**, professor of pediatrics at Columbia-Presbyterian Medical Center in New York City.

“The answer is reasonably clear that most people with asthma should be able to live normal lives,” Mellins says. “Before one settles for less, one needs to be sure one is making use of all the information that is currently available.”

He points out that, “it could be the fault of the health care professional, but people often don’t seek help until too late. The mindset of the public has to be changed.”

Many experts note that patients are inclined to focus on the “quick fix” to relieve acute attacks and stop the long-term anti-inflammatory therapy as soon as they feel better, creating a downward spiraling disease cycle.

The NHLBI “applauds” the *Asthma in America* study for its “extensive” contribution to what has already been known about asthma. “This information confirms we certainly still have a lot of work to do,” says **Rob Fullwood, MSPH**, coordinator of the National Asthma Education and Prevention Program at the NHLBI.

“This survey has just raised the national agenda, and the needs for different organizations to come together to get our physicians and health care professionals all to really embrace those recommendations more fully,” Fullwood says.

The NHLBI has streamlined guidelines for primary care physicians, who treat the vast majority of asthma patients in the United States, to make adherence easier. The full document weighs five pounds, Fullwood says.

NHLBI has also begun what Fullwood calls a “very aggressive program” on the local level that includes physicians visiting primary care physicians to train them in their own offices.

Others advocate direct patient education.

COMING IN FUTURE MONTHS

- Focus on comorbidities: Prioritizing and treating

- Integrating new delivery systems and medications into your program

- New guidelines for asthma management in minority pediatric populations

- Quantifying asthma management efforts translating outcomes into dollars

- Partnering with the primary care physician

Guidelines for Asthma Diagnosis, Management

Diagnose asthma and initiate partnership with the patient:

- ❑ Diagnose asthma by establishing:
 - a history of recurrent symptoms;
 - reversible airflow obstruction using spirometry;
 - the exclusion of alternative diagnoses.
- ❑ Establish a patient-clinician partnership:
 - Address patient's concerns.
 - Agree upon the goals of asthma therapy.
 - Agree upon a written action plan for patient self-management.
- ❑ Reduce inflammation, symptoms, and exacerbations:
 - Prescribe anti-inflammatory medications to patients with mild, moderate, and severe persistent asthma (i.e., inhaled steroids, cromolyn, or nedocromil).
 - Reduce exposures to precipitants to asthma symptoms.
 - Assess patient's exposure and sensitivity to individual precipitants (e.g., allergens, irritants).
 - Provide written and verbal instructions on how to avoid or reduce factors that make the patient's asthma worse.
- ❑ Monitor and manage asthma over time:
 - Train all patients to monitor their asthma.
 - All patients should monitor symptoms.
 - Patients with moderate-to-severe persistent asthma should also monitor their peak flow.
- ❑ See patients at least every one to six months:
 - Assess attainment of goals of asthma therapy and patient concerns.
 - Adjust treatment, if needed.
 - Review the action plan with the patient.
 - Check patient's inhaler and peak flow technique.
- ❑ Treat asthma episodes promptly:
 - Prompt use of short-acting inhaled beta-

agonists; and, if episode is moderate to severe, a three- to 10-day course of oral steroids.
— Prompt communication and follow-up with clinician.

Patient education after diagnosis:

Identify the concerns the patient has about being diagnosed with asthma by asking: "What worries you most about having asthma? What concerns do you have about your asthma?"

Address the patient's concerns and make at least these key points:

- ❑ Asthma can be managed and the patient can live a normal life.
- ❑ Asthma can be controlled when the patient works together with the medical staff. The patient plays a big role in monitoring asthma, taking medications and avoiding things that cause asthma episodes.
- ❑ Asthma is a chronic lung disease characterized by inflammation of the airways. There may be periods when there are no symptoms, but the airways are swollen and sensitive to some degree all of the time. Long-term anti-inflammatory medications are important to control airway inflammation.
- ❑ Many things in the home, school, work or elsewhere can cause asthma attacks (e.g., second-hand tobacco smoke, allergens, irritants). An asthma attack (also called episode, flare-up, or exacerbation) occurs when the airways narrow, making it harder to breathe.
- ❑ Asthma requires long-term care and monitoring. Asthma cannot be cured, but it can be controlled. Asthma can get better or worse over time and requires treatment changes.
- ❑ Patient education should begin at the time of diagnosis and continue at every visit.

Source: National Heart, Lung and Blood Institute, Bethesda, MD.

"Maybe it is time to go to the patient, tell the patient that this is what they ought to get if they have asthma, and if they don't get it from their primary care providers, they should have access to a specialist," Nelson says.

The NHLBI is even taking a more adversarial stance in terms of patients' rights.

"The dissemination is over with," Fullwood says. "We're finished sending out the guidelines. We're going straight to the community. The guidelines really mean something and we want them to take it seriously."

It is time to prepare patients to ask the right questions and to press doctors to respond in language they can understand, Fullwood says. "They have a right to do that."

Bob Milo, MD, incoming president of the American College of Allergy, Asthma and Immunology, practicing in Lynchburg, VA, takes a somewhat conciliatory approach to primary care physicians, especially those burdened with the "rat race" created by managed care.

Milo and Nelson, as specialists in daily practice, say they spend a minimum of one hour with

a newly diagnosed patient; but they recognize that primary care physicians may find their jobs in jeopardy if they spend that much time with a single patient.

While some managed care companies, especially the larger closed ones like Kaiser, are recognizing the value of early and full treatment to avoid costly emergency care and hospitalization, Fullwood says. "Many don't realize yet you have to spend a little money to save a lot."

The national specialty societies must come up with a way to help primary care doctors, Milo contends. "We need to have care teams and help our colleagues in primary care who are catching the brunt of this."

Educational videos and literature coupled with quality time with the physicians can help, but Milo's organization is also exploring the possibility of certifying asthma educators to help patients learn to help themselves. ■

HMO gives its doctors a D for asthma management

Steps taken promptly to improve care

Question: What happens when a major health care provider learns its primary care physicians are, frankly, doing a lousy job of following the guidelines for asthma management?

Answer: A lot.

Health Net, California's second largest health plan, with 1.3 million members in California alone, released a ground-breaking report card on itself in early December.

In what is believed to be the first chronic disease-specific report card, the HMO found a disturbing bottom line:

- Only 72% of Health Net's patients with severe asthma reported having a steroid inhaler and, of those, only 54% used it daily.
- In addition, only 26% of patients with severe asthma reported having a peak flow meter and of those, only 16% of them reported using it daily.

"Although the National Asthma Education Program guidelines were published seven years ago, compliance with the guidelines was low," says **Antonio P. Legorreta**, MD, MPH, vice president of the quality initiatives division of Foundation Health Systems, Health Net's parent

company in Woodland Hills, CA.

In addition, older patients who had been diagnosed for a longer period of time with increasing severity of the disease under treatment by a specialist were more likely to be using inhaled steroids daily. Those who were under the care of specialists had better outcomes than those seeing primary care physicians.

Those least likely to be using inhaled steroids were African-American patients, which resulted in more emergency room visits and hospital admissions for asthma.

Interestingly, Legorreta says, researchers discovered there was an overuse of beta-agonist metered-dose inhalers, "directly related to the fact that members think bronchodilation is the backbone of asthma management." Legorreta says.

What did Health Net do with this information?

First of all, post haste, the HMO sent a peak flow meter and educational material to each of its 5,000 severe asthmatics.

Then, Legorreta says, "We identified the most severe cohort of asthmatics and we added a nurse educator call to them weekly, among other things to help them learn how and when to use the peak flow meter."

The report card wasn't all bad. Of Health Net's 47 medical groups, nine groups were rated above-average, 32 were rated average and six were rated below average.

The HMO's experience does not apply exclusively to California. An eight-state study of Foundation's patients produced "similar results," in terms of compliance with the NAEP guidelines for patients across the nation, Legorreta says. Those results are expected to be published soon.

Health Net surveyed 5,580 patients enrolled for a year or more identified through the HMO's pharmacy database as having received prescriptions for inhaled corticosteroids, beta-agonists, or theophylline. Patients who received prescriptions for those medications who answered the questionnaire saying they were not being treated for asthma were screened out.

The questionnaire asked a series of questions about symptoms, treatment, knowledge of disease self-management, use of medical care (emergency department visits and hospital admissions), medical history, and satisfaction with care.

The questionnaire measured eight areas of function on a scale of 0 to 100:

- general health perception;
- physical functioning;
- social functioning;

- limitations due to:
 - physical conditions;
 - emotional conditions;
 - bodily pain;
 - mental health;
 - energy or fatigue.

Primary care physicians are once again bearing the brunt of the responsibility for the lack of compliance.

Health Net has addressed that problem by sharing the results of the survey with doctors face-to-face. Doctors are getting guidelines from Health Net as well as personal report cards showing how they compare with their peers.

In addition, the company has sent individual profiles to incorporate into the patients' medical records that include an assessment of functional status.

The California study was published in the *Archives of Internal Medicine*, which was also part of Health Net's strategy to get the attention of physicians.

"Quite honestly," Legorreta says, "if we just sent out a report in a slick folder with some charts, it probably would have wound up in the garbage. By publishing in a peer journal, we let them know this material has been scrutinized. It's a way of getting them to read it."

Other California HMOs have had their own experiences with compliance in asthma management, and have somewhat different methods of approaching the same problem.

Mike Ralston, MD, director of quality demonstration at Kaiser-Permanente Northern California in Oakland says informal internal surveys in recent years have showed that "we had room for improvement."

While being less specific about it, Ralston says Kaiser employed a slightly different methodology from Health Net by asking providers which of the NAEP guidelines were most relevant and pushing compliance in those areas.

"We created an asthma registry and it's based on looking at pharmacy data to see who's had a prescription for an asthma medication, who's had an asthma-coded visit in the medical office, who's been in the emergency room, and hospitalization discharge codes," Ralston says.

Those patients are coded and matched to pharmacy files to see who's not appropriately been medicated.

That list of names is linked to providers and the provider is sent a list of the patients.

"It seems to be working," Ralston says. "What

our providers are really crying for is they want to do the right thing, but they need the right information to do it.

"So we send them a list of something they have preliminarily agreed to, such as, 'Yeah, I agree that moderate to severe asthmatics ought to be taking inhaled steroids.' If we send them a list of the patients who are not, they say, 'Great, this is just what I need.' And they'll get the nurse to call them in and maybe just automatically get a prescription or get them into an education program."

"It's been very successful with the providers," he adds.

Kaiser did not study use of peak flow meters, an area the NAEP says is crucial to effective asthma management. Ralston says Kaiser has the same experience at Health Net in terms of better outcomes for patients seeing specialists.

[Editor's note: Antonio Legorreta of Foundation Health System in Woodland Hills, CA, can be reached at (818) 676-7912.] ■

Use telephone education for disease management

Asthma knowledge jumps 19%

A telephone line has proved an effective link between educator and patient to manage such chronic diseases as asthma, diabetes, and congestive heart failure.

Patients enrolled in the Optum disease management program never see the nurse in person, but the education that takes place by telephone over a six-month period has had an impact, says **Diane Smeltzer**, RN, MHA, director of operations for the Optum disease management program, a service marketed by United Health Care in Dayton, OH, to businesses and other health plans.

For example, there was a 19% increase in knowledge of how to control asthma episodes among patients enrolled through an employer or health care plan. Thirty-three percent of participants measured clinically as having moderate- or high-severity asthma moved into the low severity level as a result of the program. Also, there were 18% more participants with a written action plan from their physician.

There was no magic formula used in the

disease management efforts, just a simple, methodical education approach. During the first telephone call the nurse goes through a patient profile that addresses several issues. Patients are asked how many times they visited the emergency department in the last six months, if they have been hospitalized for asthma, what symptoms they have been experiencing, and how frequently. This information helps nurses to rank them in categories of severity of illness.

A second section of the profile focuses on the patient's knowledge and ability to manage health. "We want to find out about their disease and what they know about how they should be taking care of themselves. This is a key area for us because this is how we gear our education," says Smeltzer. The profile also covers how the disease is impacting their ability to function, such as their ability to continue to go to work and school.

During the first phone call the educational needs of the patient are prioritized based on national guidelines and the nurse tries to help the patient set up some goals. For example, the two most important areas for asthma patients are learning what triggers their asthma attacks and being on an inhaled anti-inflammatory medication.

Often patients will be asked to work toward identifying their triggers and to schedule an appointment with their physician to get on the appropriate medication.

After the first phone call, patients are sent a letter and a packet of information on their chronic disease. They are told that a nurse will call in a couple of weeks after they have had time to read over the information. A letter also is sent to each patient's physician stating that their patient has been asked to schedule an appointment to review prescribed medications.

The packet for asthma includes an educational booklet, a log to record peak flow readings, a sample asthma action plan to control asthma flare-ups, and a blank plan they can take to his or her physician.

During the second phone call, the nurse discusses the information the patients received. Also the information covered in the first call is discussed to determine if they are working on their goals. "Once the initial call has taken place, every subsequent call is a check on their progress. We determine, based on their progress, whether we're ready to move on to the next item of education or if we have to stay at the same point," says Smeltzer.

The final two calls are made at three-month and six-month intervals. The same patient profile taken during the first telephone call is covered once again in the final session to measure outcomes. Between formal phone calls initiated by the nurse, patients can call a toll-free number if they have any questions, problems, or needs.

Although there is currently no maintenance plan available once the six-month disease management program ends, one is being considered. "We do try to hook patients up with resources in their own community once the program ends," says Smeltzer.

[Editor's note: For more information on the Optum disease management program, contact Diane Smeltzer, RN, MHA, Director of Operations, Optum Disease Management Program, 369 West First St., Suite 235, Dayton, OH 45402. Telephone: (937) 220-9114, ext. 7910. Fax: (937) 220-9152. E-mail: dsmeltze@uhc.com.] ■

New use for ipratropium: Pediatric emergencies

Long used to treat adult COPD

An old drug is getting new attention for the treatment of acute asthmatic episodes in children. The addition of ipratropium to standard drug treatments reduced the overall incidence of hospital admissions in children treated in the emergency room by nearly 9%, and the hospitalization of children having severe attacks by 15.1%, according to findings by researchers at the Children's Hospital of the King's Daughters at Eastern Virginia Medical School in Norfolk, VA.

In the first pediatric outcome study using a randomized, double-blind, placebo-controlled group of 434 children ages 2 to 18; researchers found those who received 2.5 ml of ipratropium bromide added to the second and third doses of a nebulized solution of albuterol (2.5 or 5 mg per dose, depending on body weight) were less likely to be hospitalized than those in the control group who received 2.5 ml of normal saline instead of the ipratropium.

All patients also received a corticosteroid (2 mg of prednisone or prednisolone per kilogram of body weight) given orally with the second dose

of albuterol.

Overall, doctors found in the ipratropium group that 27.4% of the children were hospitalized, compared to 36.5% in the control group.

For those with moderate asthma (defined as peak expiratory rate of 50% to 70% of the predicted value or a score of 8 to 11 on a 15-point scale), hospitalization rates were similar between the ipratropium group and the control group at 10.1% and 10.7%, respectively.

However, the results were dramatic in the group of children with severe asthma (defined as peak expiratory flow rate of less than 50%, or an asthma score of 12 to 15 on a 15-point scale). Only 37.5% of the ipratropium group required hospitalization compared to 52.6% in the control group.

One more tool for severe asthma

The use of ipratropium is not a panacea, says **Arno Zaritsky**, MD, chairman of the department of pediatrics at the Children's Hospital of the King's Daughters and co-author of the study published in the *New England Journal of Medicine* in October. "It's just one more thing that we now know to be useful in kids with severe asthma to help get them turned around."

Zaritsky says ipratropium might be particularly helpful because patients on home albuterol sometimes find the drug loses its effectiveness over time. "It's giving you another way of treating that constriction of the airways when you've lost some of the responsiveness to the albuterol because you've been using it frequently at home." And it is cost-effective, at approximately \$3 a dose.

Ipratropium is sold under the brand name Atrovent, but is available in generic form. It has long been available in a metered dose inhaler for adults with chronic obstructive pulmonary disease, but the King's Daughters study is the first in children. Zaritsky speculates the drug may be even more effective in severe attacks in adults.

Zaritsky says the drug helps relax the airways by working on the parasympathetic nervous system.

Unlike atropine, which has been used in similar situations for decades, Zaritsky says, "Ipratropium was developed because it acts only on the airways; it is not absorbed. We looked very carefully for side effects, and for all intents and purposes, side effects are minor at best."

Some patients reported the drug caused dry mouth, so if it is used on a long-term basis, ipratropium could cause drying of the mucous

membranes, Zaritsky says.

"It is not really clear that it is going to be helpful to use on a long-term basis," Zaritsky adds. "The data is just not out there." ■

A counseling training session at work

Study targets skills, confidence levels

A new study conducted at the Veterans Affairs Medical Center of San Francisco has found that counseling training programs are necessary for pharmacists to gain the competence and confidence they need to effectively counsel patients for complex conditions such as asthma.¹

The study complements the findings of a recent survey of pharmacists in Ohio, which found that while the vast majority of respondents want to counsel patients, most simply don't.

Specifically, 67% of the Ohio pharmacists said they counsel no patients, 21% said they counsel one to two patients per day, just 5% counseled three to four patients daily, and 2% counseled more than six per day.

Most respondents said a lack of time/workload, lack of private setting or hospital support, and even patient attitudes were the main barriers to effective counseling. But while most Ohio pharmacists did not cite the lack of a counseling training program as a major barrier, the San Francisco study found that without such a program, the competence and confidence needed to effectively counsel patients was lacking. This was despite the assumption that "pharmacists are expected to provide individualized patient consultations in a variety of pharmacist-managed clinics, in decentralized outpatient pharmacy modules, and at the time of discharge."

The VA's pharmacy staff development committee reacted by launching a counseling training program detailed by the authors.

The program began with the formation of a planning subcommittee within the pharmacy, staffed by inpatient and outpatient pharmacy supervisors, the VA's education and quality improvement coordinator, a regional pharmacy coordinator from the University of the Pacific in Stockton, CA, an outside pharmacoeconomics specialist, and a pharmacy practice resident.

As part of the training sessions, the group established seven patient cases based on VA files for role-playing techniques. These consisted of the patient's list of problems, a simulated medication profile, and a group of prescriptions to be filled. Included in the role playing were cases that "involved patients with communication barriers such as visual or auditory demonstrating the use of an inhaler and spacer."

Pharmacists were required to rotate as either a patient or pharmacist, followed by counseling two real patients while being observed by a facilitator.

Another major part of the program required pharmacists to pass with a score of 90% or higher an open-book, written exam of 50 multiple-choice questions concerning use indications, adverse effects, interactions, administration, precautions, storage, and compliance.

To assist pharmacists when the real counseling began, manuals were compiled as references covering 70 drugs commonly used at the center, along with 32 common disease states. Pharmacists carried the manuals during the training programs, along with handouts describing proper techniques for oral and nasal inhalers, spacers, and ophthalmic agents.

As the training programs were conducted, pharmacy officials established standard counseling policies on identifying what types of patients would receive mandatory counseling. Policies also dictated that documentation of counseling sessions must be put into the center's computer system.

And in another major step, the VA created the position of the discharge counseling pharmacist (DCP), who is "responsible for counseling patients who are not being monitored by one of the ward pharmacists," note the authors. The DCP position is filled by all inpatient pharmacists on a rotating basis, with the DCP available weekdays, 7:30 a.m. to 3:30 p.m. For ambulatory care, pharmacists were made available in decentralized private counseling rooms.

The authors also note that about 100 hours were needed to "plan the program, develop the cases and the examination, and reproduce the references." It took another five hours for pharmacists to complete the program (minus the time it took to complete the written exam).

Pharmacists were queried before and after the program about their experience and confidence levels concerning patient counseling. Predictably, the latter increased after completion.

(Editor's note: For more details or reprints, contact

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Reference

1. Lee AJ, et al. Staff development in pharmacist-conducted patient education and counseling. *Am J Health-Syst Pharm* 1998; 55:1792-8. ■

CLINICAL MANAGEMENT

A practical approach for the adult asthma patient

By **Richard L. Sheldon, MD, FACP, FCCP**

(Editor's note: This is the second of a multi-part series on a practical, structured approach to managing asthma in the adult patient. In the last issue of Asthma Management, we covered the epidemiology, etiology, definition and pathophysiology of asthma.

In this month's issue, we cover clinical features and differential diagnosis, as well as special tests. In future issues, we will cover disease management procedures, pharmacology, hospital treatment and alternative medicine therapies.)

Clinical features and differential diagnosis

"All that wheezes is not asthma," is an oft-repeated axiom. The diagnosis is usually not difficult and should be entertained when there are episodic symptoms of airflow obstruction that are at least partially reversible.

The differential diagnosis should include chronic obstructive pulmonary disease, recurrent aspiration, congestive heart failure, pulmonary embolism, upper airway obstruction, laryngeal and vocal cord dysfunction, cystic fibrosis, lung involvement of vasculitides, drug-induced cough (ACE inhibitors), industrial bronchitis, carcinoid syndrome, and hysteria.

Most of the diseases making up the differential diagnosis are easily ruled out by a complete history and physical, but complex laboratory

and radiographic studies may be required when dealing with some of the more unusual diseases.

History

In the adult, the most important presenting symptom is intermittent cough. This is usually accompanied by a complaint of recurrent dyspnea and chest tightness (wheezing). The symptoms frequently occur at night, prompting a concern that recumbancy and the clinical situations accompanying recumbancy, such as congestive heart failure and aspiration, are present. Further investigation helps to clarify these issues.

Symptoms tend to present or be made worse with exposure to pollens, tobacco and wood smoke, animals with fur or feathers, molds, dust, chemicals (perfumes, etc.), or industrial pollution (may or may not be job-related). Other inciting historical events include exercise, viral infections, changes in weather, menses, and intense emotional shifts.

The pattern of symptoms is important but may be misleading. Despite a lack of seasonal, diurnal variation, or episodic history, asthma should be high on the diagnostic list in the consideration of undiagnosed cough or wheezing.

Care should be exercised when considering family history of asthma, hay fever, eczema, or other atopic disease since these are not strong indicators of the presence of asthma. Nonetheless, close relatives with allergies, rhinitis, sinusitis, and nasal polyps should be noted.

Injury of the airways by way of pneumonia (especially if recurrent) and exposure to parental smoking as a youth are important pieces of historical data.

Other important historical data include social aspects of patients — where they are employed and, thus, to what substances they are exposed (**see table, at right**). Home environmental issues (including heating and cooling systems, carpeting, pets, hobbies, and vacation habits) are all important pieces of information.

If there is a smoking history present and the patient is a current and active smoker, considerable time should be taken to obtain details of this part of the patient's life. Extensive questioning by the physician of the patient's smoking habits will start a process whereby the physician can let the patient know that smoking must immediately stop.

Physical examination

The major physical findings in the asthmatic will occur in the thorax, upper airway, and skin. Since asthma is described in terms that stress the episodic nature of the symptoms, the examiner must be prepared for a normal physical exam, even in a patient with significant disease.

Thorax. Chronic air-trapping will result in a permanently hyper-expanded chest that is seen as an increase in the anterior-posterior diameter. With acute and severe airway obstruction, findings may include the use of accessory muscles. More subtle findings of respiratory muscle distress include abdominal paradox and respiratory alternans.¹

Normally, the abdomen moves outward with inspiration and inward with expiration. When the diaphragm fatigues, the opposite occurs causing abdominal paradox. Also, periods may occur when the accessory muscles serve as the main respiratory muscles while the diaphragm rests. Then, the diaphragm resumes its work while the respiratory muscles rest. This is called respiratory alternans. These last two are indicators of a failing respiratory "pump" and should be clues to

Occupational Triggers and At-Risk Workers

Agents

- Di-isocyanates
- Anhydride
- Trimellitic anhydrides
- Amines
- Wood dust or bark
- Metals (nickel & cobalt)
- Fluxes
- Drugs (PCN, psyllium, TCN)
- Enzymes
- Latex
- Plants
- Insects
- Lactoserum
- Crabs and prawns
- Animal urine

Workers/Handlers

- Plastics, floor varnishers, spray painters
- Plastics, resins
- Plastics, epoxy resins
- Photographers, shellac
- Carpenters, furniture makers
- Metal platers and grinders, diamond polishers
- Electronics
- Pharmaceuticals
- Pharmaceutical and detergent
- Health care
- Tea and herbal processors
- Farmers, entomologists
- Dairy
- Fishermen, processors
- Handlers and research labs

advanced disease requiring hospitalization.

The most compelling finding in the physical examination of the asthmatic is wheezing. This “continuous” near musical sound is caused by narrowing of the bronchi and bronchioles by spasm, airway edema, mucus plugging, or pressure on the airways from the surrounding lung, resulting in fluttering of the airway walls. To be asthmatic wheezing, it should be involuntary, with the normal person being able to produce a wheeze voluntarily with forced expiration. Asthmatic wheezing is usually heard in expiration, but, as the attack worsens, it can be heard throughout the entire respiratory cycle. Ominously, wheezing may dissolve as the attack worsens, so that the chest becomes quiet as the patient in near respiratory collapse struggles to breathe.²

Upper Airway. The asthmatic’s respiratory mucus lining from top to bottom can be viewed as a continuum, with inflammation being the common denominator. An increase in mucosal swelling in the nose along with increased secretions are common. The presence of clear, jelly-like masses starting in the farthest reaches of the nasal passages seen with a otoscope indicate nasal polyps. Use of aspirin, NSAIDs, and tartazine have been implicated as causative factors in their development. In private discussions with fellow clinicians, there is agreement that nasal polyps are seen less often these days. It is suspected that the reason is due to the increased use of nasal steroids and nasal cromolyn.

Skin. Atopic dermatitis and eczema are common problems for the asthmatic.

Special tests

Pulmonary Function Testing. Part of the basic work-up of the suspected asthmatic should be a measurement of the FVC, FEV1, and FEV1/FVC before and after inhaling a beta-agonist. The response to the inhaled beta-agonist helps to establish the reversibility aspect of asthma. The American Thoracic Society guidelines require an increase of more than 12% and 200 ml in FEV1 to indicate significant reversibility.

Primary care clinics should have access to spirometry for diagnosis and monitoring. Office spirometry for this purpose should be performed using equipment and techniques that conform to American Thoracic Society standards.

Methacholine, Histamine, and Exercise Challenge. The baseline pulmonary function test may be normal in a patient highly suspected of

having asthma. In such cases, the patient’s airway can be challenged with methacholine, histamine, or exercise, and then the pulmonary function test is performed again in order to see the effects of the challenge. This test has the potential for being dangerous and therefore should only be done in a lab trained in its use and using tightly controlled protocols. The test should not be done if the patient’s FEV1 is less than 65%.

Allergy Testing. Skin tests and other forms of in-vitro tests should be considered for patients with persistent asthma and who are exposed to perennial indoor allergens.

Bronchoscopy. Within the usual clinical setting, this important diagnostic tool has not been useful in the diagnosis and therapy of asthma. It has proved invaluable in the research setting — tracking the pathophysiology of asthma with bronchoalveolar lavage and studying the effects of medications on many aspects of asthma.

Peak Flow Meters. These hand-held devices are simple to understand and operate. They have become important tools and are used at home for the day-by-day monitoring of airway hyperresponsiveness. Initially, the patient uses the meter over a two- to three-week period to establish his or her “personal best” peak expiratory flow rate (PEFR). Daily monitoring of the PEFR is then compared to his or her personal best. If the daily PEFR stays in the 80% to 100% range of his or her personal best PEFR, then usual dosing of the condition continues or tapering can be advanced. If the PEFR falls to 60% to 80% of his or her personal best, worsening of symptoms will follow and will require an increase in medications. A drop in PEFR to 60% or less requires immediate intervention and perhaps a visit to the physician.

[Editor’s note: Richard L. Sheldon, MD, FACP, FCCP, is a clinical professor of medicine at Loma Linda University, and a staff pulmonologist/intensivist at Beaver Medical Group, in Redlands, CA.]

The article was peer reviewed by Felipe A. Rubio, MD, clinical chief of the department of medicine at Kettering Medical Center; and Theodore Shankel, MD, pulmonary and critical care medicine, Beaver Medical Clinic, in Redlands, CA.]

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Acupuncture offers new tool for asthma control

Chronic, acute sufferers benefit

Acupuncture was once thought to be akin to voodoo, but Western medicine is becoming more and more aware of the numerous medical benefits of the ancient Chinese art of placing needles in the body's energy meridians to achieve a wide variety of effects.

From relief of postoperative pain and chemotherapy nausea and vomiting to treatment for addiction, headache, menstrual cramps, tennis elbow, fibromyalgia, myofascial pain, osteoarthritis, low back pain, and carpal tunnel syndrome, studies have shown acupuncture can be useful.

Now add asthma to that list.

The National Institutes for Health in Bethesda, MD, has reported in its consensus paper that "promising results" have been shown for all the above conditions, including asthma.

Recent foreign studies back up the NIH.

A British study reported in the September issue of *Respiratory Medicine* shows that acupuncture, real or sham, improves quality-of-life scores in patients with stable asthma.

That study showed no improvements in respiratory function after either real or sham acupuncture (needles placed on random points of unrecognized value on the chest wall), but with both real and sham acupuncture, there was a "significant improvement" in asthma quality of life scores and "a parallel reduction in the usage of bronchodilators.

A 1995 British study published in the *Journal of Complementary Alternative Medicine* showed acupuncture for patients with bronchial asthma "facilitate[d] reducing pharmacologic medication and is safe."

A 1995 study published in a Russian medical journal says acupuncture resulted in a reduction of bronchial hyper-reactivity.

Studies of the value of acupuncture are difficult, researchers agree; "placebo" acupuncture points are of little value because virtually any point on the body may have an effect on a condition.

Majid Ali, LAc (licensed acupuncturist), certified nutritionist, of M.M. VanBenSchoten Associates in Los Angeles, says acupuncture works by sending messages to the brain through

energy meridians, telling the central nervous system to "fix whatever is wrong."

Doctors are unlikely to start sticking needles into folks, although some are learning about acupuncture through a variety of courses, including quickie weekend seminars that acupuncturists call dangerous.

"Many people don't realize that legally, the scope of our practice is the same as a primary care physician," says **Louis Kiwala**, LAc, MTOM (master of traditional Oriental medicine), director of the New York Center for Acupuncture and Alternative Medicine and co-founder of the Institute for Advanced Pain Management in New York City.

Chinese medicine is a complex art, part science, part poetry, with its foundations in anecdotal evidence gathered over 2,500 years of practice, he says.

"Chinese medicine is more systemic than Western medicine," Kiwala says. "So in Chinese medicine, we would look at asthma as a an excess

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or an attack on an organ.”

Lung problems could be hereditary or a matter of environment and lifestyle, Kiwala says.

“If the lungs are weak, then everything that goes wrong in the body manifests itself in the lungs,” he says.

Consequently, he treats the entire system, and often asks questions that seem unrelated to the lungs in his quest to strengthen the weak organs.

Kiwala and his colleagues rarely prescribe acupuncture alone for most conditions, including asthma. Generally they will prescribe a combination of herbs to help the condition, so it is difficult to separate the effectiveness of each method.

“Western medicine is a step behind because they find a single chemical to treat a condition and that often results in side effects,” Kiwala says. “We find a variety of chemicals in herbs that interact with one another to restore balance and provide checks on one another, therefore avoiding side effects.”

Ali starts his asthma patients off with herbs and acupuncture, but tells them the process isn’t as fast and dramatic as Western medicine.

“We look for imbalances, internal and external,” Ali says. “Some asthma is congenital, but most of it is environmental and we see a great deal of it here in L.A. with all the smog.”

Ali says sinus infections are a major underlying cause of asthma and estimates half of his asthma patients have sinus triggers for asthma.

Another significant percentage of asthma patients suffer from chronic intestinal infection, Ali says.

When those conditions are treated, Ali says, patients find improvement or even the disappearance of their asthma.

Yet he recommends that asthma patients combine their inhaled steroids and bronchodilators with the alternative route.

“My goal is to get them off, but if you need them, you have to take them,” says the acupuncturist, who works closely with many MDs, including neurologists, internists and psychiatrists and is working to bridge the gap between Western medicine and traditional Chinese medicine. Ali calls himself a “former asthmatic” who still has an inhaler, but hasn’t used it for several years. “I’d be stupid not to use it if I needed it,” he says.

Roberta Lee, MD, a fellow at the program in Integrative Medicine at the University of Arizona

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in Tucson, says she has found that in a handful of asthma patients experiencing mild bronchospasms she treated with acupuncture “over the course of one hour, they became less symptomatic.”

Lee says an East-meets-West scenario will ultimately prove to be beneficial to patients, as does the NIH consensus report which notes that for asthma “acupuncture may be useful as an adjunct treatment or an acceptable alternative or be included in a comprehensive management program.”

[Editor’s note: Majid Ali can be reached at (818) 344-9973; Louis Kiwala can be reached at (718) 377-3829, and Roberta Lee can be reached at (502) 626-6478.] ■

CE objectives

After reading this month’s issue of *Asthma Management*, continuing education participants should be able to:

- Cite the areas in which current asthma management efforts need improvement.
- List the steps that Health Net in California took to improve its asthma management.
- Understand the benefit of counseling training for pharmacists.
- List the diagnostic procedures and tests for adult asthma.