CLINICAL GUIDELINES FOR FAMILY PHYSICIANS

Diagnosing and Managing Asthma

BY NEIL S. SKOLNIK, M.D., ROSS ALBERT, M.D., PH.D.

The National Asthma Education and Prevention Program issued an update of its clinical guidelines for the diagnosis and management of asthma. Key points and changes from previous guidelines, as well as the stepwise treatment algorithm for patients aged 12 years and older, are discussed here.

Guidelines are most useful when they are available at the point of care. A concise yet complete handheld computer version of this guideline is available for download, compliments of FAMILY PRACTICE NEWS, *at www.redi-reference.com.*

Monitoring, Diagnosis

The guidelines stress the assessment of asthma with regard to maximizing control of symptoms and minimizing the risk of future exacerbations. Control should be assessed with a detailed patient history taken at each encounter and should include information on the frequency of symptoms, the use of a short-acting b-agonist inhaler, nighttime awakenings, and the extent to which symptoms interfer with normal daily activities.

Providers must actively inquire if patients are avoiding certain activities so as not to provoke asthmatic symptoms.

In addition, assessment with spirometry is important for disease management. Some patients have few symptoms, but on spirometry will have decreased FEV_1 (forced expiratory volume in 1 second), indicating poor control. Risk of future exacerbations is correlated with decreased FEV_1 as well as previous exacerbations, which are indicated by emergency department visits, hospital admissions for asthma, or previous intubation.

Environment and Comorbidities

Patients should be screened for specific triggers and comorbidities that may exacerbate symptoms. Allergens should be assessed by history and/or skin testing, and their significance should be evaluated by the clinician.

Patients should avoid tobacco smoke and physical exertion outdoors on days of high air pollution. Allergen immunotherapy should be considered in those who have persistent symptoms despite therapy and trigger avoidance.

Comorbidities—such as gastroesophageal reflux disease, obesity, rhinitis/sinusitis, and stress/anxiety—should be considered in patients with persistent symptoms. Influenza vaccine should be considered annually for all patients with asthma.

Management and Treatment

The management of asthma is aimed at the reduction of existing impairment and future risk, and a stepwise treatment strategy is recommended to accomplish that goal.

The type, amount, and frequency of medication are based on disease severity for patients who are starting on therapy for the first time, and on the level of control for patients who are already taking ongoing therapy.

Implicit in a stepwise strategy is a step-down plan, in order to define the least amount of medication possible to control symptoms and minimize side effects in adults and youths older than 12 years of age. (See box.) Similar stepwise algorithms are included in the guidelines for patients aged 0-4 years and 5-11 years.

Key elements regarding medication use include evidence-based support for inhaled corticosteroids (ICS) as the preferred form of initial controller therapy for persistent asthma at all ages (step 2). At each of the six steps, be sure to assess adherence, environmental control, comorbidities, and patient education; then step up if needed, or step down when possible and when asthma is well controlled for at least 3 months.

Consider consultation with an asthma specialist at step 3; consultation is required at step 4 and higher. In steps 2-4, consider subcutaneous allergen immunotherapy for patients with allergic asthma.

The Bottom Line

Assessment and management of asthma should be based both on objective measures (frequency of symptoms, use of rescue medications, exacerbations, emergency department visits) and on subjective measures (limitation of daily activities, perceived asthma control). Treatment should be a partnership between the clinician and patient, and should be focused on reducing risk and impairment with careful education, risk-factor and allergen reduction, and medication management with short-acting rescue medications and long-term controller medications.

The guidelines are available at www.nhlbi.nih.gov/guidelines/asthma/asthgdln.htm.

Asthma Management in Patients Aged 12 Years or Older

Intermittent Asthma

Step 1 **Preferred:** short-acting ß$_2$-agonist as needed

Persistent Asthma: Daily Medication

Step 2 **Preferred:** low-dose ICS
Alternative: cromolyn, LTRA, nedocromil, or theophylline

Step 3 **Preferred:** low-dose ICS plus LABA, or medium-dose ICS
Alternative: low-dose ICS plus either LTRA, theophylline, or zileuton

Step 4 **Preferred:** medium-dose ICS plus LABA
Alternative: medium-dose ICS plus either LTRA, theophylline, or zileuton

Step 5 **Preferred:** high-dose ICS plus LABA **and**
consider omalizumab for patients who have allergies

Step 6 **Preferred:** high-dose ICS plus LAB plus oral corticosteroid **and**
consider omalizumab for patients who have allergies

Notes: ICS is inhaled corticosteroid. LTRA is leukotriene receptor antagonist. LABA is inhaled long-acting ß$_2$-agonist bronchodilator.

Source: National Heart, Lung, and Blood Institute

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Chronic Idiopathic Cough May Warrant Iron Deficiency Testing

BY PATRICE WENDLING
Chicago Bureau

CHICAGO — A small but provocative Italian study suggests that women complaining of chronic idiopathic cough should be evaluated for iron deficiency.

Researchers at the University of Turin (Italy) observed that cough and signs and symptoms of pharyngolaryngitis were improved or resolved after iron supplementation in 16 healthy nonsmoking women who had idiopathic cough and iron deficiency (average serum ferritin 9.4 ng/mL) and mild anemia (hemoglobin 11.6 g/dL).

The women, aged 18-56 years, had no history of atopy, asthma, or other bronchopulmonary diseases, and no evidence of gastroesophageal reflux. All had normal results on lung function tests, lead investigator Dr. Caterina B. Bucca reported at the annual meeting of the American College of Chest Physicians.

The women presented with marked oral redness and soreness, atrophy of oral mucosa and tongue papillae, and angular cheilosis. Nine patients had dysphonia. Exhaled nitric oxide was normal (average 14.9 parts per billion) in all patients.

Histamine challenge showed bronchial hyperresponsiveness in 4 women, extrathoracic airway hyperresponsiveness in 14 women, and cough hyperresponsiveness in 15 women. A significant association was observed between PC_5 coughs (the histamine concentration that provokes five coughs) and PC_{25} MIF_{50} (provocative concentration causing a greater than 25% fall in maximal midinspiratory flow at 50% of vital capacity), reported Dr. Bucca of the department of biomedical sciences and human oncology at the University of Turin. After iron supplementation, signs and symptoms of pharyngolaryngitis were resolved in 10 women and improved in 6 women. Significant increases were observed in PC_{20} FEV_1 (provocative concentration causing a 20% drop in forced expiratory volume in 1 second): 18.8 mg/mL to 24.1 mg/mL; significant increases were also seen in PC_{25} MIF_{50} (6.2 mg/mL to 22.2 mg/mL) and in PC_5 coughs (3.8 mg/mL to 17.8 mg/mL).

Dr. Bucca suggested that the tentative explanation of how iron deficiency causes cough is based on the knowledge that iron deficiency impairs immunologic defenses and induces the release of inflammatory cytokines.

"This leads to damage of the airway mucosa, which becomes more permeable to noxious stimuli so that the nervous receptors responsible for the onset of cough are more easily reached by irritants," Dr. Bucca said in an interview. "Infections of the pharynx and larynx are also favored so that cough is often associated with painful and inflamed throat and with dysphonia."

Iron deficiency is present in 20% of women in industrialized countries, and in the United States nearly one-third of women have virtually no iron stores. Cough is also more frequent in women than in men.

Dr. Bucca is currently evaluating the nutritional status of all patients who present to her clinic for chronic cough, either idiopathic or associated with diseases of the upper airway, and is planning an epidemiologic study to assess the prevalence of cough and iron deficiency in women of childbearing age. ■