Editorial

Inadequately controlled asthma

Patients do not understand their treatment plans

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Chronic cough is a common and disabling condition. The approach by Drs D'Urzo and Jugovic (page 1311) to differential diagnosis and management of chronic cough in non-smoking immunocompetent patients (who are not taking angiotensin-converting enzyme [ACE] inhibitors) provides an excellent means of working through this difficult problem.

Managing respiratory symptoms is often empiric. Knowing a patient's history, chest radiograph, and a trial of therapy are often successful in managing symptoms. Other factors can complicate management, such as noncompliance and limited access to testing. This editorial highlights some of the less common causes of cough and discusses how to care for some of the more common ones.

Patients need better care

Asthma is a common but undermanaged disease. The Asthma in Canada Landmark Study[1] showed that asthma is not being adequately controlled, and patients do not understand their treatment plans. In 1999, new asthma consensus guidelines[2] were created and disseminated. Despite this, asthmatic patients continue to suffer a lower quality of life due to the disease and often have learned to live with their symptoms. Symptoms of asthma include cough, wheeze, and dyspnea. Diagnosis should be made with objective airflow measurements, all of which have been reviewed by Drs D'Urzo and Jugovic (page 1323). Diagnosis is often in doubt; only half (54%) of all asthma patients report ever having a lung function test.[1]

Managing asthma requires education, environmental assessment and advice, medications, an action plan, and good follow up. Patients with poorly controlled asthma are more likely to:

- miss school, work, or social engagements;
- require urgent care;
- place a greater burden on the health care system;
- restrict their daily activities; and
- suffer serious health-related repercussions.[1]

New medications

There are new medications for asthma, such as a preparation using the propellant hydrofluoroalkane (HFA). Beclomethasone HFA particles are smaller and are deposited lower in the airway than older medications. This allows treatment of the "entire" lung and lower doses of an inhaled steroid for comparable treatment effect. Combination therapies with inhaled steroids and long-acting β_2-agonists are the biggest new kid on the block. These and leukotriene receptor antagonists can be added to inhaled steroids to improve asthma control. Newer studies, such as IND,[3] OPTIMA,[4] and FACET[5] indicate that it might actually be preferable to add a long-acting β-agonist than to double the dose of inhaled steroids to improve asthma control.

Leukotriene receptor antagonists have the benefit of coming in pill form. They are also indicated in the treatment of allergic rhinitis. Some of their indications include:

- add-on therapy for increased asthma control,
- replacement therapy to decrease dose of inhaled corticosteroids,
- monotherapy in steroid-phobic patients,
- exercise-induced asthma,
- acetylsalicylic acid–allergic asthma,
- treatment of nasal rhinitis, and
- puffer-phobic patients and parents.

Although not universal, I believe the ASA-allergic asthma indication deserves some emphasis. In these patients, cyclooxygenase is blocked by ASA and prevents production of prostaglandins that inhibit the leukotriene system. This then causes an overproduction of leukotrienes and a severe asthmatic, if not anaphylactic, episode. I have seen a patient with anaphylaxis to ASA (and asthma) given ketorolac tromethamine (eg, Toradol) by mistake and have no reaction at all! Not to at least give a patient with the triad of ASA allergy, asthma, and nasal polyps a trial of a leukotriene receptor antagonist would in my opinion be malpractice.

Educating patients

Lack of time in our offices prevents us from giving patients sufficient asthma education. More and more asthma education clinics are being created across Canada. The Canadian Network for Asthma Care (CNAC) has created a national certification program for asthma educators. Diabetic education centres have been accepted by family practice. Perhaps we can also consider getting educational assistance for our patients through asthma clinics. Canada is the only country in the world that has certified its asthma educators. I hope this ensures conformity of educational values among educators. The CNAC has created a list of available programs on their website (**www.cnac.net**). I also suggest looking at some of the linked sites on this website; there are a few excellent patient resource sites as well as Canadian and other guidelines.

Encouraging a self-management plan

Another analogy to diabetic care is that of a self-management plan. Diabetic patients are encouraged to adjust their insulin within the framework of a contrived sliding scale. There is no reason that asthma management cannot also be done on a sliding scale. In fact, asthma guidelines[2] are contrived as a continuum of care with patients to be moved up or down the continuum as needed. This requires a personalized action plan for each patient (page 1346). In the Asthma in Canada Landmark Study,[1] only two out of 10 patients (20%) reported *ever* receiving a written action plan—a disappointing number! An action plan can be written out by a family physician over several visits.

A patient's action plan encompasses symptoms, use of β_2-agonists, triggers, peak flow, and medications to personalize treatment decisions. Family physicians practising in Ontario are mandated to develop action plans. A coroner's report in November 2000[6] stated:

> Physicians should prepare in consultation with their patients a "self management action plan" in writing which details the appropriate use of medicine, a list of potential environmental irritants, and steps to be taken by the patients in the event breathing problems arise.

Therefore, this is now the *standard of care* in Ontario.

Many causes of chronic cough

Chronic obstructive pulmonary disease. Chronic obstructive pulmonary disease (COPD) is frequently called "asthma" by patients and physicians alike. Although they are both obstructive lung diseases, asthma and COPD are different in pathophysiology and treatment. Chronic obstructive pulmonary disease also causes cough and breathlessness, but the symptoms are chronic, and spirometry shows a lack of full reversibility.

Some patients benefit from inhaled steroids, but most do not. The main treatment for preventing further loss of lung function is smoking cessation and often not medication. A new medication (tiotroprium), however, will be launched soon. It is an inhaled once-daily anticholinergic, and early data on its use suggest an improvement in lung function in the first year. This is in contrast to ipratropium bromide (eg, Atrovent), which must be taken four times a day and often in high doses to be successful.

Postnasal drip. Postnasal drip is another common cause of chronic cough. It can be caused by allergic rhinitis or chronic sinusitis. Allergic rhinitis is part of the systemic disease of allergy. The concept "one airway, one disease" is becoming more popular, again a reminder that the cause of cough can be multifactorial.

Studies have shown that nasal challenge can induce bronchial hyperreactivity as shown by methacholine challenge and that bronchial challenge can cause nasal hyperreactivity. Diagnosis of allergy requires allergy skin tests or a radioallergosorbent test (RAST) of specific IgE antibodies. Management again depends on environmental control, trigger control, and anti-inflammatories or antihistamines. Sinusitis might be a complication of rhinitis and is predicted by the presence of coloured nasal discharge, poor response to decongestants, sinus pain, and possibly transillumination. Sinus radiography is not normally necessary. Computed tomography scan of the sinuses is useful to assess the ostiomeatal complex before surgery for chronic sinusitis or for complications.

Gastroesophageal reflux disease (GERD). This condition often has symptoms but occasionally has none other than a cough. Cough in GERD is caused by direct acid presence in the airway or by reflex vagal stimulation. Esophageal pH probes allow definitive diagnosis, but often a trial of therapy with a proton pump inhibitor is helpful.

Pertussis. Physicians might not think of infection first with prolonged cough, but infection is an important cause that should not be overlooked. Pertussis is much more prevalent than we think.

Immunity from childhood vaccination wanes in adolescents and young adults. Thinking of the diagnosis and taking appropriate nasopharyngeal swabs to diagnose it can prompt macrolide treatment of an index case and prevent an epidemic. Immunization for older children or adults is now achieved with a newly available acellular pertussis vaccine (Adacel) with fewer reactions.

Tuberculosis. Tuberculosis (TB) must be considered to be diagnosed early. Most TB in Canada is imported from elsewhere. It can be dormant for decades and then reactivate. Physicians should do a TB skin test and first-morning sputum test for acid-fast bacillus, and should particularly consider TB as a cause of upper-lobe pneumonias. I have seen three cases of TB recently in patients seen for upper-lobe pneumonia and sent home with a prescription for macrolides.

Bronchiectasis. This disease is another infectious cause of chronic cough. A computed tomography scan of the chest is required to diagnose it. We spend a lot of time withholding antibiotics to prevent resistance, but patients with bronchiectasis seem to get better only with antibiotics—that is the clue.

Conclusion

Physicians should consider all of these possibilities when treating cough. Early diagnosis of lung tumours and severe infections can go a long way to reducing the morbidity and mortality of these diseases. Aggressive management after establishing a firm diagnosis of the common causes of cough and respiratory symptoms is definitely within the bailiwick of most family physicians.

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