CASE IN... **COPD** 

# **COPD:** Helping Helen Breathe

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#### Helen is Housebound

 Helen, 64, presents complaining of three months of increasing dyspnea.



- She is an exsmoker of six months with a 50-pack/year smoking history.
- She has recently retired to spend more time with her young grandchildren, but found she is too breathless to lift and carry them or to safely look after them at the park.

What can you do for Helen? Go to page 34 for the answer.

Chronic obstructive pulmonary disease (COPD) is a chronic lung disorder caused mainly by smoking. Four per cent of Canadian adults (750,000) suffer from COPD. In 1999, COPD was the fourth leading cause of death in men and the fifth leading cause in women. COPD is expected to escalate in the next fifteen years, especially in the aging female population.

## How is COPD diagnosed? tribution

A simple breathing test called spirometry is essential for the early diagnosis and optimal treatment of COPD. If the patient is a smoker or an ex-smoker and over the age of 40, current recommendations from the Canadian Thoracic Society are that spirometry should be considered for all patients who also:

- become short of breath while doing simple chores,
- have a regular cough that produces sputum and
- get frequent colds that seem to persist longer than in other people.

# What are the goals of COPD management?

The goals of COPD management are:

- **1.** To prevent disease progression (smoking cessation).
- **2.** To reduce shortness of breath and other respiratory symptoms.
- **3.** To improve exercise tolerance.
- **4.** To prevent and treat flare ups.
- **5.** To improve quality of life.
- **6.** To reduce mortality.

Simple spirometry can confirm the clinical diagnosis of COPD and differentiate it from asthma.

### How is COPD managed?

The following are seven steps for managing a patient with COPD:

### Diagnosis confirmation

Simple spirometry is a widely available tool that can confirm the clinical diagnosis of COPD and differentiate it from asthma. Spirometry can also be used to assess the severity of the airflow impairment. It is occasionally available in the office setting, but should be as easily obtained as a chest X-ray at your local hospital. It is the gold standard for the diagnosis of COPD.

### Educate the patient

Once the clinical diagnosis of COPD has been confirmed by spirometry, it is extremely important to spend time with your patient, educating them about COPD. Many booklets are available from the Lung Association and there is an increasing number of centres that have COPD educators and COPD case management co-ordinators to assist with this process.



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## Promote smoking cessation

Giving up smoking is the single best thing a patient can do for their long-term health. It is never too early or too late to stop smoking. Beneficial effects start immediately and continue for the rest of the patient's life.

### Discuss vaccination

An annual flu shot has been shown to have significant benefit. I am a strong advocate for a pneumococcal vaccine to also be administered. However, COPD patients are not in the major risk category for overall pneumococcal septicemia.

### Consider inhalers

Inhaled therapy is the gold standard for the management of patients with obstructive lung disease. It is important to remember that inhaler devices differ and their use is not intuitive. No matter what regime is chosen, the patient requires careful instruction and demonstration of how to use the particular inhaler. At each follow-up visit, inhaler technique and adherence must be assessed.

#### Discuss pulmonary rehabilitation

Graded exercise programs are universally beneficial for individuals with COPD. However, they are a limited resource.

### Address end-of-life treatment

It is important that physicians address end-of-life treatment decisions, as they would with any other chronic disease. In patients with COPD, it is all too common to have this addressed for the first time only during an episode of severe respiratory distress in the ER by an unknown physician.

#### COPD

#### What can you do for Helen?

Helen is referred for spirometry and bronchodilator response. Her forced expiratory volume in one second (FEV<sub>1</sub>) is 55% and her FEV<sub>1</sub>/forced vital capacity (FVC) ratio is 50%. After four puffs of salbutamol, a bronchodilator response of 4% is obtained. This confirms the clinical diagnosis of COPD (moderate obstruction with no reversibility). When Helen returns for an office visit, it is important to have a very positive approach to interaction with her.

Helen has reflected on your initial concerns and advice. She and her husband read in the COPD booklets you provided in her last visit that the best thing she can do is to quit smoking.

Ongoing management requires a step-wise approach in which therapy is escalated based on

### Spirometry can also be used to assess the severity of the airflow impairment.

the severity of the patient's symptoms and disability.

Education of the patient and the utilization of booklets and information packages from the Canadian Lung Association are paramount.

COPD patients are at a higher risk for hospitalization, so an annual influenza vaccination is recommended. The benefit of the pneumococcal vaccine is less well-established, but I recommend that COPD patients be given this vaccine at least once, every five to ten years.

Inhaled treatment with bronchodilators is the mainstay of COPD pharmacotherapy. This can

#### **Treating Helen**

- Helen is encouraged by the positive interaction with her primary-care physician, the information provided and the regular scheduled followup.
- She receives the flu and pneumococcal vaccine and returns in followup to review the changes in her breathing from her new treatment regime.
- On office review, Helen's inhaler technique is excellent and her dyspnea improves significantly on an optimal regime of longacting anti-cholinergic, once daily, and a combination inhaled steroid, long-acting beta-agonist, twice daily, with rescue shortacting beta-agonist.
- She is now able to enjoy helping her daughter with her grandchildren at home and in the park.

significantly improve dyspnea and quality of life, even if there is no objective change in spirometry.

The current consensus on the re-initiation of the bronchodilator therapy is that it be commenced with a short-acting beta-2-agonist, as required (or a regular anti-cholinergic or combination anti-cholinergic/beta-2-agonist). The firstline therapy is based on clinical response and the tolerance of adverse effects. It is important that Helen schedules a follow-up appointment in about six weeks.

If symptoms of dyspnea persist at her next visit, despite this treatment, add a long-acting bronchodilator, such as an anti-cholinergic (tiotropium, 18 mcg, every day) or a long-acting beta-2-agonist (LABA), (formoterol 12 mcg, twice a day, or salmeterol, 50 mg, twice a day). Continue a short-acting bronchodilator (*i.e.*, salbutamol, as needed, for immediate symptom relief).

If Helen were to return with moderate to severe persistent symptoms, a prescription of both a long-acting anti-cholinergic and a long-acting beta-agonist is recommended, in addition to a short-acting beta-2-agonist, as needed, for immediate symptom relief.



Unlike asthma, inhaled corticosteroids (ICS) should not be used as a first-line medication for COPD. However, ICS should be considered in patients with moderate to severe COPD who experience three or more acute exacerbations per year, especially if these exacerbations require treatment with oral steroids. Patients who remain breathless, despite optimal bronchodilator therapy, may benefit from the addition of a combination of ICS/LABA, but this should be considered on an individual basis.

It is important that Helen be encouraged to maintain an active lifestyle. Stable COPD patients who remain breathless and limited in their activity, despite bronchodilators, should be referred to an exercise training program. A formal pulmonary rehabilitation program that includes supervised exercise training and patient education has been shown to consistently improve breathlessness, exercise endurance and quality of

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## life and may reduce emergency visits and hospitalizations in patients with COPD.

Resources

- 1. Canadian COPD Guidelines: www.copdguidelines.ca.
- Bourbeau J, Julien M, Maltais F, et al: Reduction of Hospital Utilization in Patients with Chronic Obstructive Pulmonary Disease. A disease-specific self-management intervention. Arch Intern Med 2003: 163;585-91.
- McIvor RA, Tashkin DP: Underdiagnosis of chronic obstructive pulmonary disease: A rationale for spirometry as a screening tool. Can Respir J 2001; 8(3):153-8.
- McIvor A, Chapman KR: Diagnosis of chronic obstructive pulmonary disease and differentiation from asthma. Curr Opin Pulm Med 1996; 2(2):148-54. Review.



## If you could be any movie character, who would you be?

Find out how one of your peers answered this and other questions about their careers, their lives and... their quirks.

Turn to page 27 for some *Doc Talk*