

Less smoke, more fire

What's new for you in the latest COPD guidelines?

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The purpose of the 2008 update by the Canadian Thoracic Society on recommendations for primary care management of chronic obstructive pulmonary disease (COPD) is to bring you up to speed quickly on all the information you need to know about COPD.¹ The 2008 update includes guidance on using new treatment options that have emerged since the last guidelines were published in 2003,² new data about the epidemiology of COPD, and information about how exacerbations and comorbidities affect your patients. The 2008 recommendations are extracted from a broader set of COPD recommendations published in 2007.³ The guidelines don't dwell on things you already know—like the fact that 80% to 90% of COPD cases occur in people who are current or past smokers—but instead focus on the burning “news you can use” to treat your patients and help keep them alive and well.

Epidemiology and prevalence

Statistics from 2004 and 2005 indicate COPD has become the fourth leading cause of death among Canadians.³ The disease affects more than 700 000 of us, with people 75 years and older having the highest prevalence (11.8% for men and 7.5% for women). It also accounts for 13% of the hospitalizations that occur every year. Furthermore, the number of women who died from COPD jumped 12% from 1999 to 2004, and the rate of hospitalization among women with COPD was estimated to surpass that of men with COPD in 2006. Overall, you're likely seeing more very sick COPD patients than you used to, and more very sick women with COPD.

Classifying severity

The most common tool for determining the severity of COPD is forced expiratory volume in 1 second (FEV₁) measured by spirometry. Now experts around the world have arrived at a unified consensus about the cutoff levels for FEV₁ and forced vital capacity for mild, moderate, severe, and very severe COPD.

The new Canadian Thoracic Society guidelines incorporate the simple Medical Research Council dyspnea scale⁴ and are congruent with the latest views from the Global Initiative for Chronic Obstructive Lung Disease,⁵ the World Health Organization,⁶ and the American National Heart, Lung, and Blood Institute.⁵ The guidelines recommend that physicians use spirometry results, together with assessment of severity of dyspnea and

disability, to stratify each patient's disease severity. A postbronchodilator ratio of FEV₁ to forced vital capacity of <0.7 is indicative of airflow obstruction. The cutoff between mild and moderate COPD is 80% of predicted FEV₁ in these patients. This level of lung dysfunction typically translates into the difference between someone who only becomes short of breath when walking up a slight hill or walking fast on a flat area, and someone who has shortness of breath and has to stop after walking on a level surface for only 100 m.

The cutoff point between moderate and severe COPD is 50% of predicted FEV₁, and that between severe and very severe COPD is 30% of predicted FEV₁. Patients with severe or very severe COPD can be extremely debilitated; can become short of breath when doing simple things such as dressing and washing; and often experience at least temporary respiratory failure or right heart failure.

Comorbidities

The latest study results verify that the systemic inflammation associated with COPD might also affect the cardiovascular system. For example, results of a 2005 controlled study showed that patients with COPD had a 1.67 relative risk of angina and a 1.75 relative risk of myocardial infarction compared with healthy individuals.⁷ The relative risk of bone fractures for COPD patients is also elevated, at 1.58; and the damage is found elsewhere, with a 1.3 relative risk of glaucoma, for example.⁷ Results of another study revealed a similar pattern of substantially higher risk of heart disease, with an alarming 3.9-fold increased chance of being hospitalized for congestive heart failure and a 1.8-fold increased probability of death from cardiovascular dysfunction, compared with age- and sex-matched controls.⁸ A recent study also found that 41% of patients with COPD had at least mild to moderate depressive symptoms; results also showed a 2.74-fold increase in the 3-year mortality rate among those with severe depression.⁹ Other important comorbidities associated with COPD include peripheral muscle dysfunction, osteoporosis, cachexia, and malnutrition.

Thus, it is important for the sake of our patients to identify comorbidities and aggressively treat cardiovascular disease and depression, as well as the risk factors associated with each of these conditions.

Acute exacerbations

Although acute exacerbations are the most common

cause of medical visits, hospitalizations, and death among people with COPD, they are not always recognized by patients and physicians as life-threatening.³ Results of a 2005 study showed death skyrockets among those who have 1 or more hospital admissions for acute exacerbations; the 3-year mortality rate is about 80% for patients with multiple admissions.¹⁰ Overall, acute exacerbations are associated with more rapid decline in lung function and with huge hits to patients' quality of life and to the bottom line of the Canadian health care system. Infections are the main cause of acute exacerbations; however, congestive heart failure, exposure to allergens and irritants, pulmonary embolism, and other noninfectious factors also contribute.

Prevention is job one. Smoking cessation is a first-line prevention strategy. Other approaches include annual influenza vaccination, pulmonary rehabilitation, and regular long-acting bronchodilator therapy (in people with moderate to severe COPD) or regular inhaled corticosteroids in combination with long-acting β -agonists (in people with moderate to severe COPD and at least 1 exacerbation, on average, a year).

A patient in the throes of an acute exacerbation of COPD should be given a careful history, physical examination, and some laboratory tests, and should be treated according to the findings. Treatment options include optimizing bronchodilator therapy with a combination of an increased dose of an inhaled short-acting β_2 -agonist and an anticholinergic agent, as well as oral or parenteral corticosteroids for 7 to 14 days in patients with moderate to severe COPD. Antibiotics can also help those with purulent phlegm production during acute exacerbations.

New algorithm for treatment

The guidelines include visual algorithms that encompass simple, stepwise approaches to managing COPD, including exacerbations. Every patient should be counseled to stop smoking, be encouraged to take part in a regular exercise regimen—ideally in the context of pulmonary rehabilitation—and receive education about COPD through a collaborative, self-management approach. Layered on top of this is the appropriate pharmacotherapy for the varying severities of COPD.


Individuals with mild COPD benefit from short-acting bronchodilators (eg, salbutamol or ipratropium) as needed. If symptoms and disability persist in mild COPD, patients can be switched to regular use of long-acting anticholinergics (eg, tiotropium) plus short-acting β -agonists as needed, or to regular use of long-acting β -agonists (eg, salmeterol or formoterol) plus short-acting bronchodilators as needed.

People with moderate to severe COPD and fewer than 1 acute exacerbation per year should be prescribed maintenance therapy with long-acting anticholinergics or long-acting β -agonists combined with short-acting β -agonists as needed. Those with persistent disability can be stepped

up to long-acting anticholinergics plus long-acting β -agonists combined with short-acting β -agonists as needed. If disability persists in such patients, lower-dose combinations of inhaled corticosteroids and long-acting β -agonists (eg, fluticasone-salmeterol 250/50 μ g twice daily or budesonide-formoterol 200/6 μ g twice daily) can be substituted for long-acting β -agonists alone.

This latter set of medications is also useful for people with moderate to severe COPD and 1 or more acute exacerbations a year, except that the higher-dose combination of inhaled corticosteroids and long-acting β -agonists (eg, fluticasone-salmeterol 500/50 μ g twice daily or budesonide-formoterol 400/12 μ g twice daily) should be used. If this fails to curb disability, patients can be given trials of oral theophylline. This should only be continued if patients experience additional symptomatic benefit compared with the inhaled medications.

Conclusion

Family physicians are the first point of care in the management of most diseases, including COPD. Early diagnosis, appropriately targeted pharmacotherapy, and smoking cessation are the most important initial steps in COPD therapy. Be aggressive in preventing and treating exacerbations to help prevent further deterioration, decreased quality of life, and mortality. With appropriate use of pharmacologic and nonpharmacologic therapies, your patients with COPD should enjoy a better quality of life regardless of their disease severity. 

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Competing interests

Dr Kaplan has been involved in clinical trials, continuing health education, and advisory boards for Abbott, AstraZeneca, Bayer, Boehringer Ingeheim, GlaxoSmithKline, Nycomed, and Pfizer. **Dr Hernandez** has been involved in clinical trials, continuing health education, and advisory boards for AstraZeneca, Boehringer Ingelheim, GlaxoSmithKline, Nycomed, and Pfizer. **Dr O'Donnell** has been involved in clinical trials, continuing health education, and advisory boards for Boehringer Ingelheim, GlaxoSmithKline, and Pfizer.

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