

# Practice Guidelines

## ACCP/CTS Provide Guidance on Preventing Acute COPD Exacerbations

### **Key Points for Practice**

- Smoking cessation counseling and therapy are suggested for persons with COPD as one piece of an overall plan to prevent exacerbations.
- Pulmonary rehabilitation improves quality of life, exercise tolerance, and dyspnea, and reduces the risk of readmission in patients with COPD who have had a recent exacerbation.
- Annual influenza vaccination and 23-valent pneumococcal vaccination are recommended, although evidence to support the role of the pneumococcal vaccine in reducing acute COPD exacerbations is insufficient.
- A long-acting anticholinergic alone; a long-acting anticholinergic combined with LABAs; or maintenance therapy with inhaled corticosteroids combined with LABAs is recommended for patients with stable COPD.

*From the AFP Editors*

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Chronic obstructive pulmonary disease (COPD) can affect a patient's daily activities and quality of life, has significant morbidity and mortality, and is the third leading cause of death in the United States. It is associated with many health care expenses (e.g., office and emergency department visits, hospitalizations). Although not well understood, exacerbations cause most of the morbidity, mortality, and expenses. Few recommendations for preventive measures have been provided. The American College of Chest Physicians (ACCP) and Canadian Thoracic Society (CTS) have released a guideline with suggestions and recommendations for preventing COPD exacerbations based on available evidence.

### **Nonpharmacologic Options**

There are a variety of nonpharmacologic measures (i.e., smoking cessation programs; pulmonary rehabilitation; education, action plans, and case management; and telemonitoring) and vaccinations (i.e., pneumococcal and influenza) to prevent acute exacerbations of COPD. Although some may provide benefit in certain patients, there are

insufficient data to make definitive recommendations regarding their use.

### **SMOKING CESSATION**

Based on its health benefits in the general population, smoking cessation counseling and therapy (e.g., recognizing current smoking habits, cessation advice, medications [e.g., nicotine replacement, antidepressants]) are suggested for persons with COPD as one piece of an overall plan to prevent exacerbations. Smoking cessation is supported for multiple reasons, including evidence that it improves prognosis, that persons with mild disease who smoked and have cough or phlegm had fewer symptoms in the first year after quitting, and that some infections (e.g., pneumonia) can be linked to smoking.

### **PULMONARY REHABILITATION**

Pulmonary rehabilitation improves quality of life, exercise tolerance, and dyspnea, and reduces the risk of readmission in persons with moderate to very severe COPD who have had a recent exacerbation (hospitalization within the past four weeks). However, rehabilitation is not suggested to prevent exacerbations for those whose last exacerbation was more than four weeks ago.

### **EDUCATION AND CASE MANAGEMENT**

In persons with COPD and a history of exacerbations, education combined with case management is recommended to prevent severe exacerbations; this should include making a health care specialist accessible to the patient at least once per month. Additionally, the inclusion of an action plan with education and case management is suggested to prevent severe exacerbations. Education alone, case management alone, and education combined with an action plan (no case management) are not suggested.

### TELEMONITORING

Although data are limited, telemonitoring does not appear to prevent COPD exacerbations compared with usual care.

### VACCINATIONS

Data are insufficient regarding 23-valent pneumococcal vaccination for prevention of COPD exacerbations; however, it is suggested for use as one piece of a comprehensive plan to improve general health in these patients. Additionally, yearly influenza vaccination is recommended because it improves health while having a low risk of adverse effects, and because recommendations from other organizations (e.g., Centers for Disease Control and Prevention, World Health Organization) indicate that it should be administered in persons with COPD.

### Pharmacologic Options

Inhaled medications, which directly affect a patient's airway, have been preferred for treatment of COPD in the past, and they have been thought of as having better tolerability and being safer compared with medications administered orally. However, persons living in certain countries may not have access to inhaled medications. Additionally, some medications to treat COPD are available only in an oral formulation. If the clinician opts to prescribe an oral medication over an inhaled version, medication type and patient profile should guide the decision-making process.

### INHALED MEDICATIONS

A long-acting anticholinergic alone; a long-acting anticholinergic combined with long-acting beta<sub>2</sub>-agonists (LABAs); or maintenance therapy with inhaled corticosteroids combined with LABAs is recommended in patients with stable COPD, based on evidence confirming that these therapies lower the risk of exacerbations. Maintenance therapy with a long-acting anticholinergic alone or combined with corticosteroids and LABAs is recommended, based on evidence confirming that these therapies lower the risk of exacerbations.

Maintenance therapy with inhaled corticosteroids combined with LABAs is recommended for the prevention of

exacerbations, based on evidence confirming that it lowers the risk of exacerbations and improves quality of life. Additionally, this combination is recommended over LABAs alone, based on improved quality of life and lung function, reduced dyspnea, and less need for rescue drugs, and over corticosteroids alone, based on a benefit regarding mortality. It should be noted that serious adverse events do not appear to differ substantially, nor do cases of pneumonia, between combination corticosteroid/LABA therapy vs. inhaled corticosteroids alone.

LABAs (e.g., salmeterol [Serevent], formoterol [Foradil], indacaterol [Arcapta]) and long-acting muscarinic antagonists (LAMAs; e.g., tiotropium [Spiriva]) are recommended for prevention of moderate to severe exacerbations, based on evidence confirming that both types of therapy lower the risk of exacerbations, as well as evidence that both improve quality of life and lung function vs. placebo. Serious adverse events and mortality rates do not appear to differ substantially between LABA or LAMA therapy compared with placebo. It should be noted, however, that LAMAs are recommended over LABAs, because they cause fewer serious adverse events.

Short-acting muscarinic antagonists (SAMAs; e.g., ipratropium [Atrovent]) are suggested over short-acting beta<sub>2</sub>-agonists (SABAs) alone for the prevention of mild to moderate exacerbations, based on evidence confirming that SAMAs lower the risk of exacerbations, as well as evidence that they improve quality of life and lung function and have fewer adverse events vs. SABAs. However, no evidence indicates that one is better than the other for reducing hospitalization.

Combining SAMAs and SABAs is suggested over using SABAs alone for the prevention of moderate exacerbations, based on evidence confirming that this combination lowers the risk of exacerbations, as well as evidence that it is slightly better at improving quality of life, exercise tolerance, and lung function vs. SABAs alone. However, serious adverse events do not appear to differ substantially between combination SAMA/SABA treatment compared with SABAs alone.

LABAs are suggested over SAMAs for the prevention of exacerbations, based on evidence confirming that they lower the risk of exacerbations, as well as evidence that they improve lung function, quality of life, and dyspnea vs. SAMAs. However, no evidence indicates that one therapy is better for reducing hospitalization, and serious adverse events do not appear to differ substantially between the two.

LAMAs are recommended over SAMAs for the prevention of moderate to severe exacerbations, based on evidence confirming that they lower the risk of exacerbations, as well as evidence that they improve quality of life and lung function, and have a lower rate of serious adverse events vs. SAMAs.

Combining SAMAs and LABAs is suggested over LABAs alone for the prevention of mild to moderate exacerbations, based on evidence confirming that this combination lowers the risk of exacerbations, as well as evidence that it improves lung function, quality of life, and dyspnea vs. LABAs alone. However, no evidence indicates that either therapy is better than the other for reducing hospitalizations, and serious adverse events do not appear to differ substantially between the two.

#### ORAL MEDICATIONS

Twice-daily use of slow-release theophylline is suggested for the prevention of exacerbations in stable patients with COPD. The lowest effective dose should be used. Additionally, patients should be informed that it can reduce exacerbations in persons on maintenance therapy with bronchodilators and inhaled corticosteroids, and that it has a rather narrow therapeutic window in terms of its adverse effects.

Systemic corticosteroids, which can be given intravenously or orally, are suggested for the prevention of hospitalization from subsequent exacerbations in the month following an initial exacerbation. Although there are risks of short-term use (e.g., hyperglycemia, weight gain), the benefits are more important. However, evidence has shown that using this therapy beyond the 30-day

period does not reduce exacerbations; therefore, it is recommended that it not be given beyond 30 days solely for prevention of hospitalizations.

A long-term macrolide is suggested for the prevention of exacerbations in persons on maintenance therapy with inhaled medications who, despite this therapy, have also had at least one moderate or severe exacerbation in the past year. Recommendations regarding specific dosing and treatment length cannot be made. When prescribing macrolides, patient profile should be taken into consideration, in addition to the possibility of the patient experiencing QT interval prolongation, hearing loss, and bacterial resistance.

Roflumilast (Daliresp) is suggested for the prevention of exacerbations in patients with chronic bronchitis who have had one or more exacerbations in the past year, and patients should be provided information about its adverse effects (e.g., weight loss, diarrhea). It should be noted that evidence regarding the effectiveness of roflumilast in persons already using inhaled medications is limited.

N-acetylcysteine is suggested for the prevention of exacerbations in persons who have had at least two exacerbations in the past two years. It can reduce exacerbations in persons on maintenance therapy with bronchodilators and inhaled corticosteroids, and it has a low risk of adverse effects.

Statins are not recommended for prevention of exacerbations; however, statins may be needed in some patients with risk factors for cardiovascular disease.

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