

## THE EFFECTIVE PHYSICIAN

# Dyspnea

BY WILLIAM E. GOLDEN, M.D., AND ROBERT H. HOPKINS, M.D.

**D**yspnea is a substantial morbidity of patients with serious heart and lung conditions. The American College of Chest Physicians recently developed an expert consensus statement to guide assessment and treatment of dyspnea.

### Conclusions

Dyspnea affects cortical processes similar to those affected by pain, and adversely affects sensory and affective perceptions. It is often coincident with mood disorders such as anxiety and depression that can impact the patient's response to breathlessness.

More than 90% of patients with severe chronic obstructive pulmonary disorder (COPD) suffer from dyspnea, compared with a 67% prevalence in patients with advanced heart disease.

Complaints of significant dyspnea are nearly three times as common as complaints of pain in patients who die from COPD. Patients with severe COPD are more likely to have uncontrolled dyspnea than are patients with advanced lung cancer.

There is evidence that patients with advanced lung or heart disease receive worse palliative care than do cancer patients and could benefit from better end-of-life treatment planning.

Three standardized instruments (the Borg 0-10 scale, a visual analog scale, and a numerical rating scale) can be used to assess breathlessness, but none have been shown to be consistently superior and thus merit preferential recommendation.

The impact of oxygen supplementation on dyspnea has been mixed in clinical studies, and there are no major trials demonstrating its value in advanced heart disease. All existing trials of oxygen supplementation for dyspnea studied patients who were hypoxemic at rest.

Opioids improve dyspnea through several pathways. Although they reduce ventilation and oxygen consumption, these agents also have a positive impact on anxiety, perception of breathlessness, and sensitivity to elevated carbon dioxide. Existing literature reflects inconsistent dosing and threshold effects. Despite concerns about adverse effects and overdosing of opioids in patients with advanced lung or heart disease, the literature does not document significant harms associated with careful titration and administration.

Existing data on the effectiveness of anxiolytics, antidepressants, phenothiazines, music therapy, acupuncture, and inhaled lidocaine for alleviating breathlessness are too sparse to allow for recommendations by the expert panel.

### Implementation

Patients with optimally managed heart and lung disease should be assessed for dyspnea and its attendant morbidity at rest or with minimal activity. A patient-reported rating of breathlessness and its distress should be recorded in the medical record.

Dyspnea is a multidimensional perception. Treatment might improve distress without affecting intensity.

While the literature for alleviating dyspnea

is disappointing, the consensus panel cautiously recommended that palliative interventions be tried and carefully assessed in patients with significant morbidity.

There is modest evidence that relaxation techniques can have a short-term positive impact on breathlessness.

Pursed-lips breathing can have a modest effect on breathlessness in patients with obstructive airway disease. It facilitates a slower and deeper respiratory pattern and has a positive impact on oxygen saturation and carbon dioxide retention.

Studies have documented improvement in dyspnea in patients with advanced lung disease from noninvasive positive-pressure ventilation. This perceptual improvement may be independent of oxygen saturation.

While movement of cool air has been reported to reduce dyspnea, there are no data documenting the impact of fans or other sources of air movement in patients with heart or lung disease.

Despite the limited clinical literature, most of the expert panel supported trials of supplemental oxygen as palliation for patients with advanced heart or lung disease who are hypoxemic at rest or with minimal exertion.

The panel also supported carefully titrated trials of oral or parenteral opioids for relief of dyspnea. Nebulized opioids, however, are no better than saline for improving breathlessness.

Opioid use in these patients should not be limited by concerns about inducing addiction or dependence. In addition, ethical analysis supports opioid use, even if it might hasten death, as long as this "double effect" reflects an intent to alleviate suffering. Such palliative care decision making should involve consideration of the values and cultures of the patients and their families.

Patients should be assessed and treated for coincident anxiety or depression.

### Reference

Mahler D.A., et al. American College of Chest Physicians consensus statement on the management of dyspnea in patients with advanced lung or heart disease. *Chest* 2010;137:674-91.



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## One COPD Event May Lead to Another

BY BRUCE JANCIN

KEYSTONE, COLO. — Acute exacerbations of chronic obstructive pulmonary disease are a far more important driver of mortality than is generally appreciated.

Physicians often shrug off acute exacerbations of COPD as part of the natural course of the disease. Not so. There are several preventive therapies of proven efficacy, but to apply them most efficiently it's useful to turn to several large published studies that are instructive in identifying the high-risk subgroups, Dr. Barry Make said at a meeting on allergy and respiratory diseases.

"It's all about knowing how to prevent COPD exacerbations in the right COPD patient at the right time," emphasized Dr. Make, director of pulmonary rehabilitation at National Jewish Health and professor of medicine at the University of Colorado, Denver.

He was senior author of a large Veterans Affairs study that brought to light the serious consequences of acute exacerbations. The retrospective study involved 51,353 COPD patients discharged after a severe exacerbation, defined as one entailing hospitalization (*Chest* 2007;132:1748-55).

The key finding was that these patients had impressively high all-cause mortality: 21% over the subsequent year and 55% at 5 years. They also had COPD re-hospitalization rates of 25% and 44% at 1 and 5 years, respectively. The greater the number of prior COPD hospitalizations, the higher the subsequent all-cause mortality.

Median survival after the index hospitalization was 4.2 years. The median length of stay during rehospitalization was 6.5 days. These hospitalizations are expensive; indeed, acute exacerbations account for the bulk of health care expenditures for COPD, which is arguably the costliest of all the respiratory diseases, Dr. Make said at the meeting, which was sponsored by the National Jewish Medical and Research Center.

Frequent COPD exacerbations also are an enormous burden on patients' health-related quality of life. This was underscored in a classic study in which patients with three or more exacerbations over the course of a year had a mean 14.8-point worse score on the St. George's

Respiratory Questionnaire than those with 0-2 exacerbations (*Am. J. Respir. Crit. Care Med.* 1998;157:1418-22).

"There's nothing else that comes close to having that big an effect on quality of life," said the pulmonologist, who noted that medications typically improve St. George's scores by only about 3.5 points.

The VA study showed that patients who have had a COPD exacerbation are at increased risk for another. In another study, British investigators showed that these recurrent exacerbations are not random events over time, but rather they cluster in such a way that the first 8 weeks after an initial exacerbation is a particularly high-risk period.

During 904 patient-years of follow-up in the British study, 27% of first exacerbations were followed by a discrete recurrent exacerbation within 8 weeks, despite what the investigators thought was full recovery from the first event (*Am. J. Respir. Crit. Care Med.* 2009;179:369-74).

The implication is that the first few weeks after an initial exacerbation are a particularly important time for monitoring, initiation of preventive therapy, and educating patients about early recognition of acutely worsening cough, dyspnea, and/or sputum in order to catch acute exacerbations early, Dr. Make said.

Another group at increased risk for acute exacerbations is patients with more severe COPD by the GOLD (Global Initiative for Chronic Obstructive Lung Disease) criteria.

Preliminary data from the National Heart, Lung, and Blood Institute's ongoing genetic epidemiology of COPD project show that roughly half of GOLD stage 3 patients have had an exacerbation within the past year, as have nearly 60% of those with stage 4 disease.

"If you want to target selected patients in your practice about information on what exacerbations are and how to prevent and treat them, the more severely diseased patients are the ones. But even among those with GOLD stage 1 COPD, 15% had an exacerbation within the previous year," he said. ■

**Disclosures:** Dr. Make disclosed serving on advisory boards for Boehringer-Ingelheim, GlaxoSmithKline, AstraZeneca, Dey, Forest, Novartis, Nycomed, and Schering-Plough.