

# The Use of Nebulized Opioids in the Management of Dyspnea: Evidence Synthesis

Margaret Joyce, RN, MSN, AOCN<sup>®</sup>, Maryellen McSweeney, PhD,  
Virginia L. Carrieri-Kohlman, RN, DNSc, FAAN, and Josephine Hawkins, RN, MSN, AOCN<sup>®</sup>

**Purpose/Objectives:** To analyze the evidence about the use of nebulized opioids to treat dyspnea using the Priority Symptom Management (PRISM) level-of-evidence framework and to make a practice recommendation.

**Data Sources:** Computerized database and manual search for articles and abstracts that included experimental trials, chart reviews, and case studies.

**Data Synthesis:** 20 articles with evaluable evidence were identified. Analysis was complex because of heterogeneous variables and outcome measures. A major limitation is small sample sizes. The majority of PRISM level I and II studies indicated unfavorable evidence.

**Conclusions:** Scientific data supporting the use of nebulized opioids to treat dyspnea in patients with chronic pulmonary disease, including malignancy, are lacking.

**Implications for Nursing:** Insufficient data identify a need for further research with random crossover designs involving larger samples that are stratified according to prior opioid use. Consistency of study variables should be emphasized.

**D**yspnea is a subjective experience of breathing discomfort that is comprised of qualitatively distinct sensations that vary in intensity. The dyspnea experience derives from interactions among multiple physiologic, psychological, social, and environmental factors and may induce secondary physiologic and behavioral responses (American Thoracic Society [ATS], 1999). This definition stresses the subjective and multifactorial nature of the symptom.

Physiologic causes of dyspnea and alternative targets for treatment classified by ATS (1999) are (a) heightened ventilatory demands, (b) increased impedance or resistance to ventilation, (c) abnormalities of the respiratory muscles, and (d) abnormal central perception of dyspnea as a result of increased central respiratory drive. The sensation of dyspnea, like pain, has an affective dimension (Carrieri-Kohlman, Gormley, Douglas, Paul, & Stulberg, 1996; Wilson & Jones, 1991). The same stimulus, such as walking up stairs, can make patients aware that their breathing has become labored, but patients' reaction to the breathlessness can vary greatly and make the symptom seem more or less severe. In other words, the affective component of a symptom, in this case dyspnea, can differ greatly and modulate the intensity of the

## Key Points . . .

- ▶ Dyspnea is a subjective experience arising from interactions among multiple factors.
- ▶ Inhaled opioids may modify dyspnea through local action in the respiratory tract.
- ▶ Existing evidence fails to support the use of nebulized opioids to treat dyspnea.

## Goal for CE Enrollees:

To enhance nurses' familiarity with the current evidence on the use of nebulized opioids in the treatment of dyspnea.

## Objectives for CE Enrollees:

On completion of this CE, the participant will be able to

1. Describe the physiologic causes and cognitive variables that affect the experience of dyspnea.
2. Outline the current evidence supporting and disputing the use of nebulized opioids for the treatment of dyspnea.
3. Identify issues to consider when designing future research into the effectiveness of nebulized opioids for dyspnea.



Margaret Joyce, RN, MSN, AOCN<sup>®</sup>, is an advanced practice nurse at the Cancer Institute of New Jersey in New Brunswick; Maryellen McSweeney, PhD, is a professor and director of the research and doctoral program in the School of Nursing at Saint Louis University in Missouri; Virginia L. Carrieri-Kohlman, RN, DNSc, FAAN, is a professor in the Department of Physiological Nursing in the School of Nursing at the University of California, San Francisco; and Josephine Hawkins, RN, MSN, AOCN<sup>®</sup>, is an oncology clinical nurse specialist at Barnes-Jewish Hospital in St. Louis, MO. (Submitted May 2003. Accepted for publication October 25, 2003.)

Digital Object Identifier: 10.1188/04.ONF.551-561