Nursing Assessment and Management of Dyspneic Patients With Lung Cancer

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Dyspnea is a subjective sensation of breathlessness. This distressing symptom is experienced by many patients with lung cancer and often is accompanied by physiologic signs and symptoms, such as tachypnea, tachycardia, pallor, and cyanosis. Dyspnea-induced hypoxia may occur and cause confusion, cognitive impairment, and restlessness. Prompt and accurate nursing assessment of dyspnea can assist in identifying appropriate treatment interventions. Supplemental oxygenation and medications, along with treatment of the underlying cause of the dyspnea, may promote patient comfort. Nurses need to be skilled in assessing dyspnea experienced by patients with lung cancer and knowledgeable in implementing effective symptom management techniques.

Key Words: lung neoplasms, dyspnea, oxygen inhalation therapy

According to the American Thoracic Society (1999), dyspnea is characterized as the subjective experience of breathing discomfort that consists of qualitatively distinct sensations that vary in intensity. Dyspnea is difficult to define because it is a subjective sensation of breathlessness that occurs when the body’s need for ventilation exceeds its ability to meet the need (Foote, Sexton, & Pawlik, 1986). As with pain, dyspnea is what a patient says it is. Dyspnea has been described as fear, anxiety, depression, choking, feeling unable to catch one’s breath, or the inability to get enough air. Dyspnea is a distressing symptom that is perceived by the nervous system as a threat. As a result, people experience negative emotions (e.g., fear, anxiety) in response to negative stimuli (Banzett et al., 2000). The argument also exists that anxiety is a cause, not an effect, of dyspnea. Physiologic signs of dyspnea include pallor, cyanosis, tachypnea, and tachycardia. Other clinically accessible physiologic signs of dyspnea include nasal flaring, use of accessory muscles for breathing, and retraction of the intercostal spaces (Ripamonti & Bruera, 1997). Dyspnea-induced hypoxia, or low levels of oxygen saturation, can present as memory or concentration problems, confusion, or restlessness. Hypoxia can be measured in the clinical setting with the use of a pulse oximeter to obtain an oxygen saturation percentage. However, dyspnea can exist in the absence of hypoxia. Noting the physiologic signs and symptoms associated with dyspnea while assessing for its psychological signs and symptoms is essential.

Unfortunately, the pathophysiology of dyspnea is not understood well. Dyspnea can be described in the context of the regulatory mechanism of normal breathing, which mainly is involuntary. The ability to breathe comes from the respiratory center located in the brain stem. The involuntary act of breathing is controlled via sensory impulses that are sent to the respiratory muscles from the respiratory center, causing them to contract and relax. These sensory, or afferent, impulses come from the chemoreceptors in the medulla, carotid, and aortic bodies and from the mechanoreceptors in the lungs, chest, and upper airways. When the chemoreceptors are stimulated by variations in blood gas levels, obstruction in the lungs, or inhaled irritants, a message is sent to the cortex that overrides the autonomic process of breathing and induces greater effort from the respiratory muscles. Normally, any impulses sent to the respiratory center from these receptors result in use of the respiratory muscles to maintain normal breathing (Ripamonti & Bruera, 1997). Dyspnea has been hypothesized to be the result of a mismatch or disassociation between the incoming afferent information from the mechanoreceptors and chemoreceptors and the response by the respiratory center or cortex (American Thoracic Society, 1999).

In her research review, Cooley (2000) reported that patients with advanced lung cancer were 80% more likely to be short of breath compared to patients in other diagnostic categories. In fact, dyspnea was the most common symptom experienced by patients with lung cancer, as well as patients with advanced cancer regardless of the cancer site (Cooley). Unfortunately, dyspnea is underdiagnosed and inadequately managed because of a lack of recognition or availability of effective interventions. Despite the