Supportive Care in Lung Cancer: Clinical Update

Maureen Huhmann and Jayne Camporeale

Objectives: *To present a clinical update regarding common distressing lung cancer symptoms and provide an update on management interventions.*

Data Sources: *Journal articles, systematic reviews.*

Conclusion: *Goals of treatment of the patient with lung cancer must include management of the high symptom burden that often accompanies the disease.*

Implications for Nursing Practice: *Early assessment and management of symptoms improves quality of life. Nurses play a key role in implementing and monitoring these interventions.*

Key Words: *Lung cancer, palliative care, cough, dyspnea, fatigue, pain, cachexia, anorexia, psychosocial distress*

THE incidence of lung cancer rates in the United States for males and females in 2011 was estimated at 221,130, with an estimated death rate of 161,250.[1] Lung cancer remains the leading cause of death for men and women in the US.[1] For the first time since 1930, the death rate for females has declined despite an increasing incidence of lung cancer in this same population. In males, lung cancer incidence has been decreasing for more than 10 years.[1] Lung cancer continues to be diagnosed in advanced stages with a high symptom burden in many patients.

In 2010, the *New England Journal of Medicine* reported on 151 patients at Massachusetts General with non-small cell lung cancer who were randomized to early palliative care with standard oncologic care versus standard oncologic care.[2] Quality of life (QOL) and mood were the chosen endpoints and assessed at 12-week intervals. The study goal was to examine the effect of early palliative care integrated with standard oncologic care on patient-reported outcomes, use of health services, and examine quality of end-of-life care in patients with metastatic non-small cell lung cancer.[2] Interestingly, the study found that patients who received early palliative care interventions had improved QOL and mood over the standard group, with a survival advantage of 2 months despite less aggressive therapy at the end of life. These patients also had a higher rate of documentation for resuscitation preferences in the medical record.[2]

Maureen Huhmann, DCN, RD, CSO: *Adjunct Assistant Professor, Department of Nutritional Sciences, University of Medicine and Dentistry of New Jersey, Newark, NJ.* Jayne Camporeale, MS, OCN, ANP: *Clinical Assistant Professor, UNC Hospitals, Chapel Hill, NC.*

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Address correspondence to Maureen Huhmann, 112 Sturbridge Rd, Branchburg, NJ 08853. e-mail: huhmanma@umdnj.edu

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The screening debate regarding lung cancer continues, but we may be one step closer to the answer. The *New England Journal of Medicine* published the results of the National Lung Screening Trial in 2011. Study accrual began in 2002, with an accrual goal of 50,000 persons reached in 2004[3] ; 53,454 persons at high risk for developing lung cancer were enrolled and studied with imaging via three annual screenings with low-dose computed tomography or three annual screenings with single-view posterioanterior chest radiography.[3] The results of the study provide some compelling evidence that early screening may help with earlier detection of lung cancer and, in fact, the National Comprehensive Cancer Network (NCCN) has issued guidelines regarding screening.[4] The downside is that even in the best circumstances of diagnosis of lung cancer, the mortality rate is still close to 50% at 6 years. This suggests that lung cancer is very aggressive, even when found in the earliest stages.

In 2008, we reported on common symptoms experienced by the newly diagnosed patient with lung cancer, which included fatigue, pain, anorexia, cough, and insomnia.[5] These symptoms continue to be burdensome today. Ten years ago the National Health Service (NHS) published the NHS Cancer Plan in London. This marked the first time a government had drawn up a major program of action that linked prevention, diagnosis, treatment, care, and research.[6] On the matter of patient care, the patients themselves gave a high priority to receiving the best possible symptom control.[6] The NHS also recommended that palliative care be delivered alongside cancer treatment and noted that too many patients were still experiencing distressing symptoms that also had a lasting effect on the caregivers who deliver most of the care. Eleven years later, we are beginning to see the rise of palliative care programs; however, most patients still suffer from symptom distress.

Symptom control remains one of the most prevalent areas of unmet needs amongst cancer patients.[7] Ninety-five percent of patients with advanced cancer have a perceived level of need for help.[7] Symptom distress has been shown to be a strong predictor of survival, and pharmacologic interventions alone often do not adequately relieve symptoms and indeed may also cause adverse effects.[7] Moreover, patients with cancer rarely present with a single symptom. Recognition of concurrent symptoms has led to continued study of symptom clusters that may improve management. A respiratory distress 'symptom cluster' among patients with lung cancer has recently been identified, with close associations between breathlessness, cough, and fatigue.[8]

In this update of supportive care in lung cancer, early assessment and management of symptoms the patient experiences continues to be the essential core for improving and maintaining QOL in the patient with lung cancer.[5] The following review will provide updated information on symptom management in patients with lung cancer.

Dyspnea

The American Thoracic Society defines dyspnea as a subjective experience of breathing discomfort that consists of qualitatively distinct sensations that vary in intensity.[9] It is the most distressing and burdensome cancer symptom reported.[10,11] In the general cancer population, dyspnea is estimated to occur in 15% to 55% of patients at diagnosis and in 18% to 79% of patients during the last week of life.[12] Many factors can cause and contribute to the symptom of dyspnea, in addition to a primary lung tumor. Dyspnea may be exacerbated by metastatic involvement of other organs, pericardial effusion, anorexia-cachexia syndrome, anemia, fatigue, hot weather, anxiety, depression, aspiration, air quality, obesity, pulmonary emboli, hepatomegaly, pulmonary leukostasis, and pleural effusion.[13] In elderly patients one should also consider increased chest wall stiffness, decreased skeletal muscle mass, and decreased alveolar elasticity.[13]

There are many well validated scales to measure its impact.[14-16] The American Thoracic Society recommends consideration of standard spirometry and lung volume measurements that may be useful in assessing dyspnea because the tests can help distinguish restrictive pulmonary disease from obstructive airway disease.[9]

Xue and Abernathy[17] reported on "breakthrough dyspnea" after a prospective study of 70 patients with lung cancer. This distressing symptom was experienced by 61% of patients up to five times/day, less than 10 minutes per episode, but with a significant interference in mood, activity, ambulation, and enjoyment of life. When evaluating our patients with lung cancer, it is important for the clinician to consider and ask the patient about their breathing status while they are participating in activities of daily living.

Management of dyspnea can be a major challenge. The NCCN guidelines recommend that