

# Non-Small Cell Lung Cancer: New Hope for a Chronic Illness

Leslie B. Tyson, MS, APRN, BC, OCN®, 2007 Oncology Nursing Society Clinical Lectureship

Since the 1980s, important advances have been made in the treatment of non-small cell lung cancer (NSCLC). The advances have doubled the cure rate, allowing more patients with NSCLC to live longer with improved quality of life. Since the 1980s, studies using “conventional chemotherapy” have shown that adjuvant chemotherapy for early-stage NSCLC can prolong survival and improve cure (Arriagada et al., 2004; Pignon et al., 2006; Pisters, 2005; Shepherd et al., 2005), that chemotherapy is superior to best supportive care (defined as aggressive symptom management, including palliative radiotherapy when indicated) in patients with advanced NSCLC (Grilli, Oxman, & Julian, 1993; Marino, Pampallona, Preatoni, Cantoni, & Invernizzi, 1994; NSCLC Collaborative Group, 1995; Souquet et al., 1993), and that active, evidence-based first-, second-, and third-line treatments are available for advanced disease (Fossella et al., 2000; Hanna et al., 2004; Shepherd et al., 2005; Socinski, Morris, Masters, & Lilenbaum, 2003). Treatment with targeted therapies (epidermal growth factor receptor [EGFR] and vascular endothelial growth factor [VEGF] inhibitors) and new molecular biology discoveries have come of age and can help predict response and select patients for lung cancer treatment (Eberhard et al., 2005; Herbst, Onn, & Sandler, 2005; Olaussen et al., 2006; Potti et al., 2006; Rosell, Cecere, Santarpia, Reguart, & Taron, 2006). Lung cancer in women continues to be an area of concern and scientific investigation. Recent advances in the understanding of the epidemic in women also will be reviewed.

Tobacco use continues to rise in developing countries; as a result, lung cancer mortality rates will continue to worsen in men and women (Alberg, Brock, & Samet, 2005). This article will propose everyday interventions that nurses can use to help control tobacco use. Control of tobacco use, new information on the molecular biology of lung cancer, and modern developments in treatment can lead to curtailment of the disease and continued improved outcomes.

## Lung Cancer Overview

In 2007, lung cancer will be diagnosed in more than 213,000 people and more than 160,000 will die from the disease (Jemal et al., 2007). That is more deaths than those from colorectal, prostate, and breast cancers combined for the same year. The incidence of new cases and deaths from lung cancer are declining in men but continue to rise in women. This reflects differences in smoking patterns: Women’s cigarette smoking peaked 20 years after men’s (Jemal et al.). Cigarette smoking is associated with the greatest risk of lung cancer;

however, lung cancer also is seen in people who have never smoked cigarettes.

NSCLC is the most common type of lung cancer, comprising approximately 80% of all cases. Small cell lung cancer, almost always seen in past or current cigarette smokers, accounts for the other 20% of those diagnosed with the disease. In NSCLC, adenocarcinoma is the most common cell type and accounts for nearly 46%. Adenocarcinoma is seen in those who have a history of cigarette smoking and is the most common cell type seen in people who have never smoked cigarettes. Other cell types include squamous cell and large cell carcinomas. Squamous cell lung cancer is almost always associated with cigarette smoking. Bronchioloalveolar carcinoma is a subtype of adenocarcinoma that is more common in women and those who have never smoked. It is associated with mutations of EGFR (Miller, Hirsch, & Johnson, 2005).

At time of diagnosis, more than two-thirds of patients present with advanced disease (stage IIIB–IV) and nearly half have metastatic disease (stage IV) (Schrump et al., 2005). Fewer than 20% are diagnosed with early-stage disease. Lung cancer usually is present for many years before symptoms develop; the presence of symptoms generally is indicative of later-stage disease and poorer prognosis. Those with early-stage disease are less likely to be symptomatic.

Table 1 outlines five-year survival rates by stage of disease. Accurate clinical staging of NSCLC is of utmost importance because clinical stage directs treatment and predicts prognosis. The best chance for five-year survival is in patients with stage I disease; survival rates can be as high as 60%–70% (Mountain, 2000). As stage of disease increases, survival decreases. The five-year survival rate for stage II disease ranges from 38%–55%, and fewer than 1% of patients with stage IV disease survive five years.

Complete surgical resection is the standard of care for those with stage I or II disease. Multimodality therapy, consisting of chemotherapy plus surgery, is recommended for patients



Leslie B. Tyson, MS, APRN, BC, OCN®, is a nurse practitioner in the Thoracic Oncology Service, Ambulatory Nursing, at Memorial Sloan-Kettering Cancer Center in New York, NY. As a recipient of the 2007 Oncology Nursing Society (ONS) Clinical Lectureship, Tyson presented this article at the ONS 32nd Annual Congress in Las Vegas, NV. (Submitted May 2007. Accepted for publication May 18, 2007.)

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