Lung cancer is the leading cause of cancer death in both men and women, with an estimated 161,840 individuals expected to succumb to the disease in 2008 (Jemal et al., 2008). The overall five-year survival rate is 15% (National Cancer Institute [NCI], 2007). A variety of treatment options have been developed since the mid-1990s that will hopefully result in improved survival rates. The general background information on lung cancer provided in this article is partially based on Walker (2003).

Lung cancer is divided into two major histologic types: non-small cell lung cancer (NSCLC) and small cell lung cancer. NSCLC is the most prevalent type, accounting for more than 80% of cases (NCI, 2007). NSCLC is further characterized by histology as adenocarcinoma, squamous cell carcinoma, or large cell carcinoma, with almost 20% of cases in the NCI SEER database (1975–2004) classified as not otherwise specified. Adenocarcinomas are the most prevalent NSCLC cases, representing about 40% (NCI) and typically present in the lung periphery and may metastasize rapidly to the liver, adrenal glands, bones, or brain (see Figure 1). Bronchioalveolar carcinoma is a form of adenocarcinoma which typically presents in a multifocal inflammatory pattern. Squamous cell carcinomas, accounting for about 20% of NSCLCs (NCI, 2007), typically are more centrally located, often resulting in endobronchial obstruction and hemoptysis. Squamous cell carcinomas tend to be more indolent (Schrumpt et al., 2005). Large cell carcinomas account for about 5% of all cases (NCI, 2007), but have declined in frequency, most likely from better diagnostic techniques, which may categorize them as adenocarcinoma or squamous cell carcinoma (Schrumpt et al.).

Etiology

Smoke from tobacco use accounts for about 80% of all deaths from lung cancer (Schrumpt et al., 2005). Most diagnoses are from active smoking, although chronic inhalation of passive secondhand smoke has been implicated in some cases. The U.S. Environmental Protection Agency (2007) has estimated that about 3,000 deaths from lung cancer per year are a result of secondhand smoke. Individuals with a history of chronic obstructive pulmonary disease also have an increased risk of developing lung cancer. The lower the forced expiratory volume in one second, the greater the risk of lung cancer (Wasswa-Kintu, Gan, Man, Pare, & Sin, 2005). Dietary deficiencies also may play a role, particularly diets low in fruits and vegetables (Alberg & Samet, 2003). Other contributing factors may include exposure to radon, asbestos, arsenic, chromium, nickel, air pollution, and family history (Alberg & Samet).