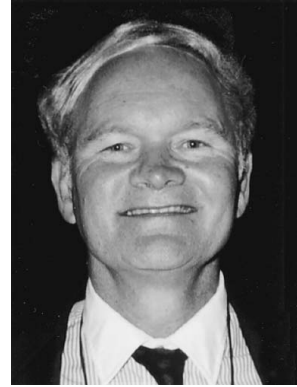


PREFACE



RICHARD A. MATTHAY, MD
Guest Editor

Carcinoma of the lung is one of the most prevalent and aggressive types of cancer. During the last several decades, mortality rates from lung cancer have risen steadily both in the United States and worldwide. In the year 2000 alone, more than three million people worldwide died of lung cancer. In the United States, lung cancer is now the leading cause of cancer-related death in both sexes, having in the past decade surpassed breast cancer as the most lethal cancer in women. In 1950, 18,318 patients died of lung cancer in the United States; in 1981, the number had risen to 110,000; in 1992, to 146,000; and in 2001, to 157,400—90,100 males and 67,300 females. In the 1990s, the incidence and mortality rates from lung cancer began to fall in men in the United States; however, the incidence and mortality rates continued to rise in women.

Cigarette smoking is the leading cause of lung cancer. Since the US Surgeon General's 1964 report on the health hazards of smoking, more than 45 million Americans have stopped smoking cigarettes. However, approximately 46.5 million Americans still smoke cigarettes, and 3,000 teenagers begin smoking each day. In Europe, Asia, and many third world countries, smoking rates remain high or have increased. For example, in several European countries, smoking rates approach 50%, in contrast to an estimated 23.5% in the United States. Throughout Asia, cigarette smoking among women, once taboo, is becoming more prevalent.

Twenty years ago, in 1982, *Clinics in Chest Medicine* published its first issue on lung cancer. In 1993, 11 years later, the second issue was published. This third issue devoted to lung cancer includes articles by six authors who contributed to the 1993 issue—Drs. Arroliga, Johnson, Matthay, Mehta, Mountain, and Murren—and 38 new authors from 20 institutions in the United States, Australia, Canada, and South Africa. The 18 articles in this issue constitute an up-to-date review of lung cancer, emphasizing recent advances in epidemiology and etiology, prevention, screening, pathology, molecular biology, staging classification, imaging and other diagnostic techniques, preoperative evaluation and therapy. The final seven articles analyze in depth the therapeutic modalities for lung cancer, including surgery, chemotherapy, radiation therapy, laser therapy, brachytherapy, photodynamic therapy, stents, and gene therapy.

In the first article, Bilello, Murin, and Matthay extensively review the epidemiology, etiology, and prevention of lung cancer. In the second article, Hurt and Ebbert describe the most effective techniques for stopping smoking. The next three articles by Mulshine and colleagues, Henschke and colleagues, and Petty, Tockman, and Palcic, respectively, detail impressive, recent progress in screening for lung cancer. These contributions highlight the potential wide application of low-dose spiral chest CT scanning, which, used alone or in combination with other modalities such as sputum analysis, can detect lung cancer at an early stage and potentially lead to a dramatic improvement in survival. Currently, only 14% of patients with lung cancer in the United States survive for five years after diagnosis.

Travis updates the international standard for histologic classification of lung tumors and confirms that adenocarcinoma with its multiple subtypes has surpassed squamous

cell carcinoma as the number one lung cancer cell type worldwide. Fong and Minna provide a detailed overview of the molecular biology and pathogenesis of lung cancer. Moreover, they illustrate multiple potential diagnostic and therapeutic applications of advances in this field of study.

Lung cancer staging classification has changed substantially since the previous *Clinics in Chest Medicine* issue on lung cancer in 1993. In 1997, Mountain and colleagues published the revised International System for Staging Lung Cancer adopted by the American Joint Committee on Cancer and the International Union Against Cancer. A major purpose of this revised system was to include within stage groupings tumors with a similar prognosis. In his article in this monograph, Mountain explains the changes adopted in 1997 and discusses the advantages of this new staging classification. He also critically evaluates the new system and outlines challenges for the future, including incorporation of biological prognostic factors in the staging classification.

The following two articles by McCloud and Mazzone and colleagues update readers on advances in imaging and both bronchoscopic and transthoracic biopsy techniques for diagnosing and staging lung cancer. Schuurmans, Diacon, and Bolliger provide a state-of-the-art approach to the preoperative evaluation of patients with lung cancer. These authors emphasize the combined use of radionuclide lung scanning, resting pulmonary function tests, and cardiopulmonary exercise testing to select or reject potential candidates for lung resection. They present an algorithm for the stepwise approach in the functional assessment of candidates for lung resection.

The final seven articles in this monograph focus on therapy of lung cancer. Tanoue and Ponn discuss the management of Stages I and II non-small-cell lung cancer (NSCLC). Surgical resection remains the optimal treatment for these stages; however, a substantial percentage of such patients ultimately die of lung cancer. Therefore, Tanoue and Ponn examine the nonanatomic prognostic factors and review adjuvant approaches that may improve outcome for patients with early stage NSCLC.

Evans and colleagues detail progress and persistent uncertainties in treating Stage IIIA NSCLC. They highlight the current trend to utilize multimodality therapy (surgery, radiation therapy, and chemotherapy) in selected patients. Kim and Murren review current chemotherapeutic and radiation therapy techniques for Stage IIIB and IV NSCLC. They also provide encouraging data on molecular targeted therapy that may improve outcome in patients with either of these advanced stages of lung cancer. Johnson, who contributed an article on management of small cell lung cancer (SCLC) in the 1993 *Clinics in Chest Medicine* issue on lung cancer, provides a thorough update on SCLC in this monograph, discussing diagnosis, complications, staging evaluation, prognostic factors, and therapy.

Lee, Kupeli, and Mehta's article offers hope for patients with central airway invasion of lung cancer. They evaluate the relative benefits and complications of laser therapy, brachytherapy, photodynamic therapy, and stents for managing endotracheal or endobronchial lesions. Gerber, Mazzone, and Arroliga review the paraneoplastic syndromes and their management in patients with lung cancer. In the last article in this monograph, Albelda, Wiewrodt, and Serman outline fundamental concepts of gene therapy for lung neoplasms and illustrate how gene therapy may be applied in patients with lung cancer.

I am deeply grateful to all of the contributors to this monograph, to Ms. Sandra Sudac for secretarial assistance, to Chuck Rossi for editorial assistance and to Ira Smiley and Joe Rusko at W.B. Saunders for invaluable editorial guidance.

This book is dedicated to my wife, Eileen, and to my son, Chris.

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