

Lung Cancer: Translational and Emerging Therapies. Kishan J Pandya, Julie R Brahmer, and Manuel Hidalgo, editors. *Translational Medicine* series, volume 3. New York: Informa Healthcare. 2007. Hard cover, illustrated, 265 pages, \$179.95.

Lung cancer is the leading cause of cancer mortality, accounting for over 160,000 deaths in the United States yearly. Despite decades of research into this subject, progress has been slow, and the previous pace of innovation made it relatively easy to stay current in this field. Recently, there has been substantial progress in lung cancer research and treatment, and the task of remaining current has become more difficult. This volume provides a relatively concise and comprehensive overview of this material. This book is aimed at specialists in medical, surgical, and radiation oncology, and clinicians and researchers who focus on lung cancer. The text builds on an assumed knowledge of the basics of lung cancer and would be difficult to follow without some background in the field. The majority of the book focuses on ongoing approaches to exploit the biology of lung cancer to improve treatment. The final 3 chapters are more directly relevant to the treatment of patients.

The stated aim of the book is to provide state-of-the-art information on evolving translational therapies in lung cancer. The editors recruited contributors from a variety of disciplines to review and synthesize this body of research. The authors are established, recognized leaders in their fields. Although much of this material is available in the form of individual review articles, to my knowledge, there is no other text that integrates this into one volume. The content is current and covers most of the major issues in the treatment of lung cancer. However, the rapidly evolving nature of the field and the preliminary nature of some of the findings make it likely that this book will be outdated in a few years.

The book begins with a brief overview of the molecular biology of lung cancer, with an emphasis on aspects of cancer biology that are the focus of ongoing clinical research. Issues pertinent to development of clinical trials with novel targeted therapies are discussed. Previously, phase I trials were concerned with finding the maximum tolerated dose of a cytotoxic agent. With targeted therapies the maximum tolerated dose is often not reached, and it is not clear that the maximum tolerated dose is the optimal

dose for further study. Many novel compounds are thought to act through a cytostatic rather than a cytotoxic mechanism, thus bringing into question the traditional measure of response rates to therapies that use radiographic tumor measurements. New biologically motivated surrogate end points are discussed, as are alternative trial designs for testing these novel compounds.

Angiogenesis was postulated to be crucial to carcinogenesis over 3 decades ago. Bevacizumab, a monoclonal antibody against the vascular endothelial growth factor, was recently demonstrated to improve survival and response rates in non-small-cell lung cancer. Two chapters are devoted to the biology of angiogenesis and efforts to target this pathway with small-molecule inhibitors and antibodies. All of the major drugs under development are covered, but the discussion of the biology would probably have been improved by integration of this material into one chapter.

The epidermal growth factor receptor is over-expressed in 40–80% of non-small-cell lung cancer and has been the subject of intense research. The small-molecule epidermal growth factor receptor tyrosine kinase inhibitor erlotinib has been shown to improve survival in the treatment of non-small-cell lung cancer. The biology of the epidermal growth factor receptor is discussed, and further small-molecule tyrosine kinase inhibitors and antibodies in development, which target this pathway, are described. Data on markers of sensitivity and response to epidermal growth factor receptor targeted therapies, including clinical features (nonsmokers, females, Asian ethnicity, and adenocarcinoma histology), epidermal growth factor receptor expression level, and mutations, are reviewed. The discussion of novel targeted therapies ends with a review of agents that target the apoptosis pathway (Bcl-2, TRAIL [tumor-necrosis-related apoptosis-inducing ligand], and others), as well as other cellular targets, such as the proteasome.

Cancer immunotherapy has been the subject of research for decades. This topic, as it relates to lung cancer, is briefly reviewed and ongoing research trials are described.

The final 3 chapters of the book are decidedly more clinical and cover topics of immediate interest to the clinician. Treatment of locally advanced non-small-cell lung cancer often involves chemoradiotherapy. The evolution of treatment, from monotherapy with radiation to the current stan-

dard of concurrent chemoradiation, is reviewed from a historical perspective. Brain metastases are the most common intracranial neoplasm, and lung cancer constitutes the majority of these cases. The medical, surgical, and radiation oncology management of brain metastases is reviewed, and the data for whole-brain radiotherapy in the setting of definitive treatment and as an adjuvant to surgery or stereotactic radiosurgery are reviewed. Radiosensitizers, chemotherapy, and the effects of cranial radiation on neurocognitive function are also discussed. The book ends with a chapter on imaging in lung cancer, which covers the role of improved computed tomography, magnetic resonance imaging, and positron emission tomography imaging in staging lung cancer, and the workup of a solitary pulmonary nodule. The discussion on endobronchial ultrasound, a relatively new technique in the mediastinal staging of lung cancer, has the potential to replace mediastinoscopy in a substantial number of cases, and will be of interest to pulmonologists.

The book covers a variety of topics well, and does this with a minimal amount of repetition between chapters. Although much of this material can be found elsewhere in review articles, this is perhaps the only recent collection of this material available in book format. It serves as a useful introduction to the relative newcomer to the field or as a relatively comprehensive review for the experienced clinician. The book is generally quite readable and contains few grammatical errors. The book is a reasonable size, at 267 pages, but the material is comprehensive and dense. Reading this book cover-to-cover would require a substantial amount of time. The layout and typesetting are attractive, and typographical errors are rare. All the chapters contain illustrative tables and/or figures. The illustrations are disappointing at times, as they are clearly derived from different sources and are of variable quality. The figures are all done in gray scale, yet some were clearly intended to be in color. Other figures have type elements that are below the resolution of the printing, which yields poor results. The references are appropriate, current through 2006, and quite extensive, with 50–100 references in each chapter, and the book is reasonably indexed.

This book is a timely review of the current state of the art in lung cancer. Given the recent pace of innovation, we are fortunate

nate in that much of the content will be out of date within a few years.

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Pulmonary Physiology, 7th edition. Michael G Levitzky PhD. *Lange Physiology* series. New York: McGraw Hill. 2007. Soft cover, illustrated, 280 pages, \$34.95.

In the preface to this 7th edition of **Pulmonary Physiology**, Levitzky states that the current edition of this book “has been thoroughly updated and new references and figures have been added.” Further, the book is intended both as an introductory text for beginning students of pulmonary physiology and a review for residents and fellows in internal medicine, anesthesiology, pediatrics, and pulmonary medicine. New features include a section at the end of each chapter entitled “Clinical Problems” that consists of 2–12 questions, in several different question formats, to test the reader’s knowledge application to a clinical situation.

The text is laid out into 11 chapters that cover topics that are very standard to most pulmonary physiology textbooks. The only unusual chapter not often found in this type of text is Chapter 10 “Nonrespiratory Functions of the Lung.” Each chapter starts with a list of objectives for that chapter. I suspect that most readers will find this to be very useful for study. For those of us who teach these topics, these objectives will serve as

an outline of the material to be covered. With a 2-color format, the author divides each chapter into short sections that are a page or less each—a more digestible format. Nearly every page has a figure, table, or formula to break up the text; this is especially nice for those of us with attention deficits.

At several points in each chapter there is an icon of a magnifying glass with a number. These icons are then collated at the end of each chapter, under a section labeled “Key Concepts.” The concept denoted by the icon in the text is then restated in a single sentence. This is great feature for study and concept reinforcement. Then comes the clinical problems (questions), and, finally, a suggested reading reference list that ranges from very extensive to a bare minimum of references. The references include textbooks, reviews, and a scant number of original articles; there are, however, new references (since 2003) in each chapter.

At the end of the book there are 3 sections. First is a set of answers for the chapters’ questions, with the exception of Chapter 1, which did not include questions. Next is a section labeled “Appendix” that has symbols, chemistry laws, frequently used equations, a pulmonary function test decision tree, and a table of normal values (eg, dead space for a newborn, a 1-year-old, an 8-year-old, and an adult). Lastly there is the always-useful subject index.

The positive aspects of the book are the formats of the chapters, with objectives and subsections. The key-concept aspect will be a big hit with students. Teachers will enjoy the clinical questions, because we all struggle with finding good ideas for examination questions. The questions are practical and not as hard as in some similar textbooks

that I have used. The term “richly illustrated” comes to mind to describe all the illustrations found in this book. There are many new and unique illustrations in this textbook. I found many of the tables to be particularly helpful and well laid out. As examples, Table 10-2 lists mediators and other substances that are altered or not altered by passage through the lung, and Table 4-3 covers the factors that predispose to pulmonary edema.

Let’s consider one chapter in detail as an example. Chapter 2 covers the mechanics of breathing, a pet topic of mine but also a topic that is frequently very badly covered in similar texts, of which many come to mind. The chapter starts with a list of 11 learning objectives. There are 8 key concepts that summarize in a simple way the important take-home messages. There are 26 figures in this 42-page chapter. The figures differ greatly; some are directly drawn from other classic treatments of the topic, whereas other illustrations are well-executed and very clear. For example, Figure 2-2 is really nice, but others are crude and need more refinement. Indeed, this is one of my few complaints about the book.

In summary, this is an excellent textbook that covers the important topics of pulmonary physiology. I liked the book very much and think that it would be a useful addition to my library. I think that students and teacher alike will find it useful.

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