

Pharmacology and Therapeutics of Airway Disease, 2nd edition. Kian Fan Chung and Peter J Barnes, editors. *Lung Biology in Health and Disease* series, volume 234. Claude Lenfant, executive editor. New York: Informa Healthcare. 2010. Hard cover, 400 pages, \$249.95.

The long running *Lung Biology in Health and Disease* series has published, including this volume, 234 monographs, ranging from acute respiratory distress syndrome and asthma to sleep dysfunction as it relates to breathing. This volume, **Pharmacology and Therapeutics of Airways Disease**, edited by Chung and Barnes, includes 27 contributors for the 16 chapters. Chung and Barnes's first edition, *Pharmacology of the Respiratory Tract*, has undergone a name change; however, the new edition covers more clinical and therapeutic approaches than the first. The first edition described basic research that was developing in the treatment of lung dysfunction. At that time it was important, as there was a huge interest in pharmacology for the lung, and the monograph included over 800 pages. This new edition is much more focused and compact, at 400 pages, delivering the most updated information on asthma and COPD.

The book's 16 chapters are divided into 3 categories. Part 1, Principles and Practice, describes airway pharmacology in terms of the action of drugs and target cells, to better understand the mechanisms of action used to treat airway disease. Discussion continues in other chapters, describing clinical trials in asthma and COPD, to include information on how treatments work and more novel clinical designs in the development of new therapies to treat these diseases. A review of current and novel drug delivery devices rounds out the section as it describes inhalation devices from Europe and North America, as well as deposition to the lung. One of the more interesting sections contains information regarding radionuclide imaging, which allows the visualization of inhaled drug particles that have been radiolabeled. Researchers conducting radiolabeled aerosol studies have been able to convey more strongly the outcomes of their findings with detailed color photographs describing the particles in the lung.

Part 2, Drugs in Respiratory Disease, describes the pharmacologic control of pathophysiological processes in the airway. The majority of the discussion covers well known asthma and COPD pharmacology. The expected drug categories—inhaled corticosteroids, bronchodilators, anti-allergic, and anti-mediator therapy—are well covered with up-to-date studies. In perhaps the most interesting chapter in this section, Chung writes about new anti-inflammatory therapy that is currently being studied to find and treat specific targets in the body and airway. This section does not discuss each agent available in detail. It does discuss the drug category as a whole and its relationships with the human body.

Part 3, Therapeutics and Treatment Approaches, covers treatment and management of asthma and COPD exacerbations, as well as stable and chronic asthma and COPD. A chapter on airway remodeling reviews the physiology and clinical changes in the airway, although most of the information collected discusses only remodeling of the airway as it pertains to asthma.

This book is an excellent reference for individuals conducting research on the pulmonary system, especially asthma and COPD. Few individuals will read this book in its entirety; however, it is a book that assimilates the most current information on lung biology with good information on new and future drug trials and the management of lung disease. Most of the discussion on management and treatment of asthma and COPD can be found in their respective guidelines (the Global Initiative for Asthma [GINA]¹ and the Global Initiative for Chronic Obstructive Lung Disease [GOLD]²).

Advantages of the text include the editors and the contributors. Most are well known scientists who have done extensive research on the topic. Each chapter contains a surplus of references, many that have been updated. The book does not have an overabundance of tables or figures, which would be seen with more traditional textbooks in respiratory care. The figures that are present are all black-and-white, which may be difficult to comprehend due to their printed size and complexities. Although the book is well written and contains information con-

cerning the most treated disease states in respiratory care, it is not an all-encompassing text on pharmacology. Another critique to consider is that the book discusses medication, therapy, and devices from both Europe and the United States. For me this is welcomed information, as I consider what may be utilized in Europe could be on the horizon in the United States. However, this may be confusing to some readers who are concerned with what is occurring only in the United States market.

Pharmacology and Therapeutics of Airway Disease is an excellent source of information, especially to individuals and departments conducting research in pulmonary pharmacology and those wanting access to a long list of reference materials.

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Clinical Chest Ultrasound: From the ICU to the Bronchoscopy Suite. CT Bolliger, FJF Herth, PH Mayo, T Miyazawa, and JF Beamis, editors. *Progress in Respiratory Research* series, volume 37. CT Bolliger, series editor. Basel, Switzerland: Karger. 2009. Hard cover, 222 pages, 214 figures (41 in color), \$188.

An explosion of new technology has found its way into the world of chest med-

icine over the past 15 years. Perhaps, one of the most important advances in our ability to provide safe and effective care for patients suffering from critical illness and diseases of the chest is the addition of ultrasound guidance. Ultrasound imaging can provide a noninvasive look into body structures that we are not normally able to visualize with the naked eye or by using a video bronchoscope. It can also provide a window into the structure and function of organs such as the heart, the size and location of abnormal lesions such as enlarged mediastinal lymph nodes, and can provide us with the ability to extend our diagnostic and therapeutic armamentarium to places that we have previously either accessed blindly or not at all.

The previous generation of pulmonologists and respiratory therapists would be stunned at the rapidity with which the use of ultrasound has gained traction in clinical practice. For example, blind thoracentesis was performed on a routine basis at our teaching hospital just 7 years ago. For the past 5 years there has not been a single thoracentesis performed without ultrasound guidance. The result has been a dramatic decrease in the rate of pneumothorax, to the point where it is negligible, and ultrasound has provided us with the ability to distinguish between uncomplicated and complicated pleural effusions, the latter of which may require chest-tube drainage. In addition to thoracentesis, ultrasound is now routinely used in the intensive care unit to guide catheter placement for central venous access—again with a decreased incidence of untoward events. Perhaps the biggest technologic advance in bronchoscopy since the introduction of the flexible bronchoscope in the 1970s is the addition of ultrasound. The increasingly routine use of endobronchial ultrasound with fine-needle aspiration has revolutionized the way in which we diagnose the stage of lung cancer.

Thus the release of the reference text entitled, **Clinical Chest Ultrasound: From the ICU to the Bronchoscopy Suite** is both timely and welcomed by the respiratory community. The book is separated into sections: the basics; thoracic ultrasound; critical care applications; endoscopic applications; and ultrasound for therapeutic procedures. Each of these sections is subdivided by chapters specific to that heading. I find these distinctions helpful because they allow readers to quickly

find the chapter most related to their clinical problem as well as to read other associated chapters within a given section. There are several other important strengths of this book. The first is the comprehensive nature of the work. The authors provide terrific anatomic detail within each subject heading. This is generally followed by a detailed “How To” section. Some chapters discuss the necessary training required to gain competency in these procedures. A reasonably good literature review is provided regarding the diagnostic accuracy of the procedure and in the cases of advanced diagnostics and therapeutics, and an adverse events profile is discussed. The issue of improved safety with ultrasound guidance of thoracic structures such as the lung and vasculature is appropriately emphasized time and again.

Another impressive aspect of this book is that the editors were able to assemble a who’s who of writers for each chapter, all of whom are recognized international experts in their respective fields. They not only do a terrific job of explaining each technique, they also have vast clinical experience and often point out small but important caveats, which will improve the reader’s ability to utilize this technology to its highest potential.

Because ultrasound is such a visually based skill, much weight must be placed on the figures and illustrations. The authors paid careful attention to that detail in the book and include 214 figures within the text to emphasize anatomic detail and to distinguish normal from diseased structures where appropriate. Further, there is online supplementary material, which includes video clips of specific procedures. For those who do not have a great deal of experience in performing these procedures the video clips will be an invaluable tool.

There are very few drawbacks to this book. Because of the usual time delays between writing and publication, and because this is a new field with much added to the peer-reviewed literature in a short time frame, the reference lists in some chapters are incomplete. This is only a slight critique though, and can be overcome with a simple computerized library search.

In summary, this is an excellent reference text, which is both scientifically strong and of great practical use for clinicians who perform procedures in the intensive care unit and bronchoscopy laboratory. It is a must-read for trainees and a terrific read for those

out in practice who want to keep pace with technological advances in the clinical arena.

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The author has disclosed no conflicts of interest.

Chemistry and Physics for Nurse Anesthesia: A Student Centered Approach.

David Shubert PhD and John Leyba PhD.
New York: Springer. 2009. Soft cover, illustrated, 423 pages, \$80.

For many years, educators in the allied health sciences have been challenged to provide courses in mathematics, chemistry, and physics that provide support for clinical curricula in respiratory care, nursing, and nurse anesthesia. Because of the compact time frame, community colleges frequently offer generic mathematics classes and a blended “science” course. Four-year colleges and universities typically offer a series of mathematics courses (pre-algebra through calculus), 2-semester courses for both general chemistry and organic or biochemistry, and physics courses are frequently either elementary or linked toward graduate level.

Regardless of the pre-professional preparation, many students entering programs of respiratory care and nurse anesthesia possess a marginal background in the physical sciences. In addition, mathematics skills are often incomplete. Therefore, many programs are forced to incorporate applications of chemistry and physics in their pre-clinical and clinical-based classes with attention to upgrading mathematics abilities.

In the past there have been textbooks that were specifically designed for either allied health science students or with a specific focus toward respiratory care and anesthesia. However, these texts no longer remain in print. An alternative approach has been to incorporate chapters in applied chemistry and physics as part of comprehensive textbooks on clinical care. This was done for early textbooks in inhalation therapy, and the theme has continued, especially in books on equipment.