

adrenergic receptors on airways inflammatory cells.

Chapter 4 reviews combination therapy for asthma. This chapter focuses on the combinations of inhaled corticosteroid plus long-acting  $\beta$  agonist. Other combinations, such as inhaled corticosteroid plus leukotriene modifier or inhaled corticosteroid plus theophylline, are not discussed. There is speculation on mechanisms of synergism of the combination of long-acting  $\beta$  agonist plus inhaled corticosteroid. Preliminary data suggest that inhaled corticosteroids may block the down-regulation of  $\beta_2$  receptors, and  $\beta_2$  agonists may activate glucocorticoid receptors.

Chapter 5 discusses the leukotriene modifiers, both in comparison to inhaled corticosteroids and in combination with inhaled corticosteroids. The chapter does not differentiate between the leukotriene-receptor blockers zafirlukast and montelukast and the 5-lipoxygenase inhibitor zileuton.

Chapter 6 examines the phosphodiesterase inhibitors. Work on the development of new selective phosphodiesterase-4 inhibitors is described. Chapter 7 reviews the anticholinergic agents. Chapter 8 reviews research on anti-immunoglobulin E monoclonal antibodies in asthma. Chapter 9 discusses immunotherapy for asthma, which preliminary research suggests may attenuate the progression from allergic rhinitis to asthma.

Chapter 10 investigates strategies to shift the T helper cell type 1 (Th1) phenotype to Th2. The research focus is on purified bacterial products, specifically the immunostimulatory bacterial CpG deoxyribonucleic acid, either alone or as an adjuvant with traditional immunotherapy. Preliminary proof-of-concept studies demonstrated suppression of Th2-associated cytokines and increased production of Th1-associated cytokines from administration of immunostimulatory deoxyribonucleic acid conjugates. The authors caution that definitive clinical data are lacking.

Chapter 11 examines research on antimicrobials in asthma. The chapter notes that the studies that found no benefit from antimicrobials in asthma failed to examine medications effective against chlamydia and mycoplasma. The chapter describes seroprevalence data that suggest an association between chlamydia, mycoplasma, and asthma, and describes molecular mechanisms by which chronic, subclinical infection with these organisms could lead to the

phenotype of chronic asthma. Clinical studies of macrolide therapy in asthma have suggested some benefit but have not yielded consistent dramatic sustained improvements. The authors speculate that failure to eradicate the organisms may be a factor in the lack of sustained response, and that some of the benefits observed may be from immunomodulatory (rather than antibacterial) properties of the macrolides. They note that studies are limited by small numbers and differences in the methods used to define infection.

Chapter 12 covers treatment of acute asthma. The authors note studies that found harm from administration of 100% oxygen in acute asthma and suggest that the fraction of inspired oxygen should be titrated to target  $P_{aO_2}$  or arterial oxygen saturation. They also review the studies on levalbuterol versus racemic albuterol and conclude that, although there are theoretical advantages to levalbuterol, the randomized studies found no clinically important difference between the two. The authors were also not convinced that the research showed any advantage of formoterol over albuterol in acute asthma.

Chapter 13 looks at the use of inflammatory markers to guide therapy. The authors note that sputum eosinophilia suggests corticosteroid responsiveness, although lack of sputum eosinophilia does not rule out a corticosteroid response. Exhaled nitric oxide increases with deterioration of asthma control. The authors note that one study suggested that exhaled nitric oxide monitoring may allow a lower inhaled corticosteroid dose than would be used if following the Global Initiative for Asthma guidelines.<sup>2</sup> On the other hand, it is not clear if a high exhaled nitric oxide in an otherwise asymptomatic patient requires action. The authors conclude that exhaled nitric oxide monitoring in asthma requires further evaluation to determine if it will be useful in routine clinical practice.

The final chapter examines the effect of cigarette smoking on asthma. The authors point out the decreased response to oral and inhaled corticosteroid among both active smokers and individuals with involuntary tobacco smoke exposure. Of course, the best treatment is smoking cessation, but the authors point out that this is often difficult to achieve in tobacco-dependent individuals. They also note that, because of the exclusion of smokers from medication trials in asthma, optimal pharmacotherapy for asth-

matics who smoke has yet to be determined. Smoking increases urine cysteinyl leukotrienes, and the authors speculate that leukotriene-modifier medications might benefit asthmatics who smoke.

In summary, this book meets its stated goal to "provide readers with an overview of possible novel approaches in a field in need of innovation," particularly in relation to asthma pharmacotherapy. The book is likely to be useful to scientists and others who wish to investigate novel approaches to asthma. However, individuals looking for a clinically useful summary of current asthma treatment would be better off referring to the asthma management guidelines.<sup>1,2</sup>

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The author of this review reports no conflict of interest.

1. Expert panel report 3: guidelines for the diagnosis and management of asthma. Bethesda, Maryland: National Institutes of Health, National Asthma Education and Prevention Program; 2007. NIH Publication No. 08-4051. <http://www.nhlbi.nih.gov/guidelines/asthma/asthgdln.pdf>. Accessed April 1, 2008.
2. Global Initiative for Asthma. Global strategy for asthma management and prevention. Updated December 2007. <http://www.ginasthma.com/guidelinesresources.asp>. Accessed April 1, 2007.

**Models of Exacerbations in Asthma and COPD.** Ulf Sjöbring and John D Taylor, editors. *Contributions to Microbiology* series, volume 14, Axel Schmidt and Heiko Herwald, series editors. Basel, Switzerland: S Karger. 2007. Hard cover, illustrated, 145 pages, \$132.

Exacerbations of asthma and chronic obstructive pulmonary disease (COPD) are important components of these airway diseases. As we try to enhance our understanding of these phenomena, we need experimental models that mimic the pathobiological processes in exacerbations. These model systems could include both animal models and human experimental models. This book is a timely addition to the literature in this growing field of research. The book has 5 sections: Introduction, Human Asthma Models, Animal Asthma Models, Human COPD

Models, and Animal COPD Models. The contributors are experts in the field and are actively involved in developing the model systems they describe.

My expectation about such a book would be that each chapter would address the biological relevance of the model being discussed, outline the experimental approach in the model, discuss the model's limitations, and discuss the future of the modeling approach. The introduction section reviews the definitions, clinical manifestations, and epidemiology of exacerbations. Though adequate, this section would have benefited from a description of the relative importance of the various etiologies of asthma and COPD exacerbations, which would have provided context for the subsequent chapters. Another interesting discussion that would add value would be on the overall role of modeling in exacerbation research.

The chapters that deal with the models themselves for the most part met the criteria described above, and provide adequate and up-to-date information. The human asthma models address human rhinovirus models as well as allergen inhalation challenge. The biology of both these models was well addressed, but the chapter on rhinovirus lacked details of the models. The chapters on animal asthma modeling addressed rhinovirus infections, house dust mite exposure, and respiratory syncytial virus. There are a few animal models for rhinovirus, but several cellular models are well described and are adequately discussed. The house dust mite exposure chapter is the longest chapter, and it does an excellent job of describing the models, their historical development, and the underlying philosophy of modeling airway diseases. The chapter on respiratory syncytial virus did not add much to the book, because there were no animal models discussed, and it is basically a review of respiratory-syncytial-virus-induced pulmonary disease and asthma.

The human COPD exacerbation models discussed include lipopolysaccharide challenge and rhinovirus infection. Both of these sections had well written descriptions of the models' biology, experimental details, and results. This is a field that is likely to have exciting developments in the near future.

Another burgeoning field of research is animal COPD models. Cigarette-smoke-induced COPD models and animal models of exacerbations are discussed in 2 separate chapters. The discussion on the smoke-induced COPD model was authoritative and

well written, but it lacked a description of the methods. Animal modeling of COPD exacerbations is just emerging, but the authors did an excellent job of laying the groundwork of how such models should be developed.

In summary, modeling exacerbations of asthma and COPD is a growing research subject, and this book provides an excellent overview of the field and the contemporary knowledge of the biology underlying exacerbations. The book should be useful for investigators interested in asthma and COPD exacerbations and who want to model them as part of their research.

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The author of this review reports no conflict of interest.

**Pleural Diseases**, 5th edition. Richard W Light MD. Philadelphia: Wolters Kluwer/Lippincott, Williams & Wilkins. 2007. Hard cover, illustrated, 427 pages, \$139.

Pleural disease is a common clinical entity that may present to general physicians and respiratory physicians alike. This is an expanding field, and a subspecialty within respiratory medicine, so it unsurprising that there have been important recent clinical and basic-science advances.

**Pleural Diseases** is a well written and thorough textbook by one of the world's leading authorities on pleural disease. It is aimed at respiratory physicians and pleural disease researchers, and it is authoritative and comprehensively referenced. It offers a detailed review of pleural anatomy and physiology in health, the effects of pleural disease on normal lung physiology, and all aspects of clinical pleural disease, and encompasses investigation (radiological, biochemical, microbiological), clinical manifestations, and treatment.

The book has 30 chapters, the first 3 of which address the basic structure and function of the pleural space. Two chapters then cover animal models and cytokines. The rest of the book addresses clinical manifestations and management. There are chapters on radiology, clinical manifestations, and

useful tests, and a well written approach to the patient with pleural disease, which will be particularly relevant to and useful for practicing clinicians. Eighteen chapters cover specific pleural disease syndromes, and the final 3 chapters are devoted to specific procedures associated with pleural disease, such as thoracentesis, pleural biopsy, chest drains, and medical thoracoscopy.

This is the fifth edition of **Pleural Diseases**, which was first published in 2001. Since then there have been substantial advances in the understanding of basic mechanisms, and some landmark clinical studies. The recent advances are covered in excellent detail, and presented in a readable manner. Three new chapters have been added since the previous addition: one on physiological effects of pleural effusion and pneumothorax, one on cytokines in pleural disease, and one on animal models of pleural disease.

The book is well laid out and has clear and appropriate illustrations and tables. Algorithms are often used to good effect, are based on current European and American guidelines, and are likely to be very useful to clinicians.

There is good depth in the subject matter. Common scenarios (eg, transudative pleural effusion, malignant effusion, pleural infection, and pneumothorax) are dealt with thoroughly, current evidence is evaluated, and there are descriptions of pathways for investigation and treatment on the basis of this evidence. Less common and more "esoteric" pleural diseases, such as chylothorax and pleural effusion in pregnancy, are well covered.

The chapter order is lucid. The book starts with basic structure and function, then describes research tools and models, then generic investigations, then the common pleural diseases, then the less-well-known pleural diseases.

Though pleural disease is common, there is relatively little evidence from randomized controlled trials to inform clinicians on optimal treatment or investigation strategy. Where good-quality evidence exists, the book deals with it in detail and presents clear and logical arguments about study findings and conclusions. Where there is a lack of good-quality evidence, the author intelligently summarizes the current evidence, such as it is, and offers a personal opinion on the correct management or investigation strategy. The book occasionally suggests management strategies that are "current