

**Acute and Chronic Cough.** Anthony E Redington and Alyn H Morice, editors. *Lung Biology in Health and Disease*, volume 205, Claude Lenfant, executive editor. Boca Raton, Florida: Taylor & Francis. 2005. Hard cover, illustrated, 434 pages, \$199.95.

A few weeks ago I developed an upper-respiratory-tract infection. It began, typically enough, with the sniffles, but within a couple of days had developed into a dry, irritating cough. It was a particularly nasty one, probably due to a rhinovirus—not that I, my family, or work colleagues cared, as I proceeded to cough persistently day and night. However, it did prompt the necessary action required for me to write this review, and it reminded me just what a disruptive and annoying symptom such a cough can be. Thankfully, the cough settled down after about a week, as most do, but it left me with the thought, “What if it hadn’t?” How would I manage with the disrupted sleep? What if I suffered constant coughing during my clinical ward rounds and out-patient consultations, or when teaching medical students, or taking a night off and going to the cinema? Suffice to say, persistent and seemingly purposeless cough is associated with considerable morbidity and impaired quality of life. Anyway, enough about me, and on with the review! Coughing is the most instantly and widely recognized airway maneuver, yet, paradoxically, it is probably the least well understood. In the last 50 years there have been notable advances in understanding the basic science and clinical aspects of cough, and many of the authors of chapters within this textbook contributed to those advances. Currently, scientific and clinical research into cough is a fluid and fast-moving topic, so I believe this is a good time to take stock of what has gone before, carefully evaluate current observations, and plan future scientific, clinical, and treatment strategies. Therefore any book that sets out to do this, as the editors suggest in their preface, is most welcome.

**Acute and Chronic Cough** is part of the *Lung Biology in Health and Disease* series. I congratulate the editors on assembling an international field of true experts in the many clinical and scientific aspects of cough. Like cough and cramp, clinicians and scientists can be uncomfortable bedfellows, and ensuring that a text written by both scientists and clini-

cians is balanced, interesting, and valuable to readers from both disciplines and to those from neither is quite a task.

The book comprises a staggering and brain-crunching 23 chapters, laid out into 4 sections, beginning with the basic science of the cough reflex, followed by the pharmacology of cough, then a series of chapters on experimental methodologies for the clinical and research evaluation of cough, and finally a section on the clinical aspects of acute and chronic cough. This organization may only be apparent to those who read the book’s preface, and I believe these 4 sections should have been more obviously identified within the contents section and throughout the book.

The first section, on the basic science of cough, begins rather abruptly, and each chapter is composed of fairly dense text, which at times (at least for the nonscientist) could make for difficult digestion. However, the chapters are well written, contemporaneous, and only occasionally let down by the quality and cramped appearance of some of the figures. Examples of this include Figures 1 and 3 in the first chapter, which would have benefited from being bigger, and Figure 3 would have been more helpful if printed in color. The fascinating immunohistochemistry slides (Figures 1, 2, and 4) in Chapter 2 were not reproduced terribly well, which is a pity. My final comment regarding this section relates to Chapter 5, which covers angiotensin-converting-enzyme-inhibitor-induced cough, a topic that has been a challenge to elucidate scientifically (a mind-boggling 159 references in this chapter alone), but less of a problem clinically (just stop the drug and use an alternative agent). The discontinuity between the pathophysiology of cough in animals and in man is made obvious in this chapter, and it serves as the perfect place from which to begin the second section on the pharmacology of cough.

Although there is some overlap, Chapter 6 focuses largely on the evidence for the vanilloid receptor and acid-sensing ion channels as possible cough receptors, whereas Chapter 7 reviews a large number of other ion channels and G-protein-coupled receptors. These are both well-written chapters, although Chapter 6 would have benefited from an illustration, and Chapter 7 has possibly been hindered by its Figure 1, which is too small and indistinct. Two key themes emerge from these chapters: the need to identify the endogenous ligands for these recep-

tors, and the lack of consistency of treatment effect seen thus far with new drugs on translation from animal studies into humans.

The penultimate section deals with existing and emerging methods of cough assessment. Chapter 8, “Analysis of the Cough Sound,” should be dedicated to all those who have devoted substantial portions of their work lives to cough-sound analysis! This chapter highlights the many obstacles that impede development of what would be the holy grail of cough evaluation, namely, a reliable and accurate ambulatory cough recorder. Arguably, the next 3 chapters (Chapters 9, 10, and 11) could have been condensed into one. Though each cough-provoking agent and method of delivery has its own merits, there is an overwhelming need to bring some standardization to this important topic of cough research. Each chapter has been carefully compiled, offering practical advice that should be of value for those interested in setting up cough laboratories.

The final section deals with the clinical aspects of acute and chronic cough. Chapter 12 opens with an interesting insight into the seasonality and economic costs of acute cough. It also provides a useful review of currently available therapies, the benefits of which rely in no small part on the placebo effect. The focus of Chapter 12 is on acute cough associated with the common cold, with little reference to bacterial infection (including pertussis) or acute cough in a smoker with worrying symptoms, such as blood in the sputum.

The subsequent 4 chapters deal with the evaluation and management of chronic cough in the adult. There is a practical review of the literature, which provides the rationale for a systematic approach to clinical management, and each of the “big 3” of cough (asthma/eosinophilic syndromes, gastroesophageal reflux disease, and upper-airway disease) are covered in detail in separate chapters. Much of the seminal work on the association between the gut and the airway in humans is summarized in Chapter 14. Even with the very best efforts, it is impossible for a textbook to remain up to date, and emerging topics of interest in cough, including laryngopharyngeal reflux and nonacid or volume reflux, are only briefly mentioned.

Following on from the most common causes of cough, Chapter 19 is devoted to psychogenic cough, a condition that is al-

most never encountered among adults and very occasionally among children with chronic cough. Although very readable, this chapter loses focus and extends into topics such as factitious sneezing, globus hystericus, and vocal-cord dysfunction. It would have been preferable briefly to mention this rare condition elsewhere, perhaps in a chapter dedicated to other causes of cough. Such a chapter is missing from this book, but should have included idiopathic cough, lung cancer, and pulmonary fibrosis—all conditions in which achieving adequate control of cough is a substantial clinical challenge.

The next 3 chapters are very good; they cover cough-reflex sensitivity in health and disease, cough and gender, and the impact of cough on health status. However, they do seem a little out of place in this section; in particular, Chapter 20 would have been better placed as a link between the earlier chapters on the neurophysiology and pharmacology of cough. The final chapter is an excellent overview of chronic cough in children. What particularly appealed to me was the section that highlights the major conceptual differences between children and adults with chronic cough.

On a final note, I searched the entire textbook and did not find a definition of cough! I left this comment to the end because I believed that somewhere in the book I would find a definition that would satisfy the scientist, the physician, the interested student, and the worried patient. Alas, none was to be found, so perhaps such a definition does not exist.

In summary, this book accurately reviewed most of the existing literature, presented practical approaches to the clinical evaluation of cough, and highlighted future topics for scientific focus. I believe this book has achieved much that it set out to do, and I thoroughly recommend it to all who have a clinical and scientific interest in this common yet complex symptom.

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**Severe Pneumonia.** Michael S Niederman, editor. *Lung Biology in Health and Disease*, volume 206, Claude Lenfant, executive editor. Boca Raton, Florida: Taylor & Francis. 2005. Hard cover, illustrated, 422 pages, \$199.95.

Volume 206 of the *Lung Biology in Health and Disease* series reviews the clinical, microbiologic, pathogenetic, and treatment issues related to severe pneumonia. Pneumonia remains the number one cause of death from infectious diseases in the United States, and the severe form of the disease is associated with high mortality (21.7–57.3%), extensive use of resources, and substantial health-care costs. This book aims to provide readers with a better appreciation and understanding of this clinical problem, to improve the management and prevention of severe pneumonia. Niederman assembled 31 contributing authors from all parts of the world to review the pathogenesis, clinical definition, microbiology, prognostic scoring systems, role of mechanical ventilation, diagnosis, empirical treatment options, and antibiotic-optimization issues relevant to severe pneumonia. The diversity of the contributors provides perspective on how this problem is approached worldwide. The book is intended primarily for physicians and physicians-in-training who care for patients with pneumonia. The book consists of 15 chapters, 9 of which focus on ventilator-associated pneumonia (VAP).

The first chapter deals with the definition of pneumonia severity, which is influenced by the intricacies of the host-pathogen interaction. The author emphasizes the current limitations of definitions for severe pneumonia and the evolutionary nature of the disease, which hinder predictive models that are based on an evaluation at one point in time. The initial definition of severe community-acquired pneumonia was based simply on need for admission to an intensive care unit (ICU), but this does not provide an objective definition, because it is controlled by subjective opinions and local practices. The Pneumonia Severity Index, modified British Thoracic Society rules (CURB65 [confusion, urea nitrogen, respiratory rate, blood pressure,  $\geq 65$  years of age]) and the American Thoracic Society criteria are reviewed, and the author concludes that the modified American Thoracic Society rules provide the best currently available criteria for the definition of severe pneumonia, but

that these are not infallible and should be used with sound clinical judgment.

Along the same theme, the 4th chapter addresses the issue of using the above criteria as predictive models for severe illness and mortality, and the author discusses whether these criteria could be used to improve pneumonia outcomes. The prediction models are presented in table form and compare the operating characteristics in predicting ICU admission, mechanical ventilation, medical complications, and death, using the Pneumonia Patient Outcomes Research Team (PORT) patient cohort. The various criteria are compared, in table form, with respect to practical issues in implementation, such as the need for laboratory results and number of variables assessed. This is helpful information for any practitioner trying to improve his or her medical practice by using a practical, easy-to-apply, applicable, and validated prediction model. Clearly, illness severity in community-acquired pneumonia can be predicted, but it is not yet clear whether this can be translated into improved patient outcomes. Ultimately the author concludes that clinical acumen remains important in managing patients with community-acquired pneumonia.

The 2nd chapter explores the issue of why some patients develop severe pneumonia. The chapter discusses the potential roles of microbial virulence factors, patient comorbidities, age, alcohol use, ethnic differences, and host genetic factors such as polymorphisms of immunoglobulin receptors and variations in tumor-necrosis-factor secretion. The different distribution of pathogens in severe community-acquired pneumonia is discussed at length, and the Spanish authors of this chapter review the important facts about each of the major pathogens involved, including *Streptococcus pneumoniae*, *Legionella pneumophila*, Gram-negative enteric bacilli, and *Staphylococcus aureus*. Notably, in multiple studies, despite extensive diagnostic evaluations, a pathogen is not isolated in 50–60% of cases. Differing bacteriology in specific risk groups is also reviewed, including the elderly, alcoholics, people with human immunodeficiency virus, and nursing-home residents. This chapter also reviews the need for early adequate empirical therapy to cover the most likely pathogens, and it examines the recommendations of the various international pulmonary and infectious-disease societies. Two key factors that affect pneumonia outcomes are emphasized: adequate initial ther-