vention of pulmonary infections is gaining success now that there is a better understanding of the delivery systems and the effect of the patient's pathophysiology on aerosol delivery. Similarly, specialized aerosols (prostacyclins and phosphodiesterase inhibitors) for treating pulmonary hypertension are beginning to show promise, though most of the research is still in the experimental stages and definitive clinical applications have not yet been described. Topical delivery of cyclosporine for the prevention of acute pulmonary rejection in lung allograft recipients is also showing promise. Also being researched is nebulizer delivery of opioids for palliative care of patients dying from terminal lung cancer and end-stage COPD, though that is controversial because of the difficulty in adequately assessing outcome.

Chapter 7 covers the use of aerosolized antibiotics for cystic fibrosis (CF) and bronchiectasis. Use of nebulized antibiotics for those conditions was first described in the mid-1940s and has had variable success over the years. Currently, nebulized antibiotics are regarded as effective therapy for *Pseudomonas* infection in patients with CF. There is now good potential to improve the quality of life and survival, owing in part to our better understanding of aerosol delivery of antibiotics.

Chapter 8 describes various other drugs that can be aerosolized for patients with CF or bronchiectasis. These include various mucolytics and wetting agents, bronchodilators, steroids, amiloride, and heparin. Because CF patients are frequently prescribed a multitude of inhalation drugs, the chapter warns about the mixing of medications in the same nebulizer. Tempting though that may be, in order to cut down on treatment time, mixing drugs may result in deleterious drug-drug interactions, untoward effects on the patient, or may impair the functioning of the aerosol delivery system so that its performance is not predictable or consistent. The chapter does a very good job of reviewing the clinical use and outcomes of 2 agents that CF patients use as mucolytics: inexpensive hypertonic saline solution, and the much more expensive solution of recombinant human deoxyribonuclease (aka, rhDNase or dornase alfa). The chapter describes and provides references about the implications of using various aerosol delivery systems with rhDNase.

Chapter 9, "Diagnostic Uses of Nebulizers," is chiefly concerned with nebulization as a means of administering an aerosol challenge test to quantify airway responsiveness. The chapter describes various test approaches and their interpretation and usefulness. A nebulizer is necessary to generate the aerosol for an airway challenge test. The physical characteristics of the aerosol (nebulizer output and particle size) and, thus, the device that creates the aerosol, are important determinants of the success of the procedure. Similarly, radioactive aerosols are widely used for lung-deposition imaging and for measurement of mucociliary clearance. The chapter mentions these in a mere 3 paragraphs; we would have preferred to see more on this topic, because radioaerosol studies have provided valuable methods for investigating the interactions between inhaled particles and the human respiratory tract.

Pediatric patients present special challenges for nebulization therapy, although nebulization can be quite effective with children. Chapter 10 describes the anatomical and physiological differences that give rise to those challenges.

Chapter 11 covers the use of nebulizers in primary care, and the authors acknowledge that nebulizers should not be the first choice for maintenance therapy of asthma or COPD. Nevertheless, greater emphasis should have been given to the increased use of long-acting bronchodilators such as salmeterol, formoterol, and tiotropium (as well as the use of long-acting bronchodilator/steroid combination products) that do not use nebulizer technology. The change from short-acting bronchodilators to long-acting bronchodilators will probably decrease nebulizer use, and the clinical and pharmacoeconomic implications of that trend merit greater emphasis, in our view.

In conclusion, **Practical Handbook of Nebulizer Therapy** provides a valuable and detailed review of the clinical applications of nebulization, and despite its Eurocentric tendencies, it should be a valuable reference on nebulization for respiratory therapy departments and libraries.

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Acute Exacerbations in Chronic Obstructive Pulmonary Disease. Nikos M Siafakas, Nicholas R Anthonisen, and Dimitris Georgopoulos, editors. (*Lung Biology in Health and Disease* series, Volume 183, Claude Lenfant, executive editor.) New York: Marcel Dekker. 2004. Hard cover, illustrated, 603 pages, $195.

Volume 183 of the *Lung Biology in Health and Disease* series is devoted to exacerbations of chronic obstructive pulmonary disease (COPD). This is a timely contribution and nicely complements the previous volume in this series, which was devoted to pharmacotherapy for COPD exacerbation. The editors assembled over 50 contributors, from all over the world. The book has 32 chapters and 9 parts. The reason for grouping the chapters into parts was not clear to me and did not seem to help the flow of the volume.

The first part begins with some general aspects of COPD exacerbation, including definitions, epidemiology, and the effects of exacerbations on the natural history of COPD, and it ends with a chapter on the economic burden of COPD exacerbation. The chapters in this part are quite short and probably could have been combined. The chapter on economics highlights the lack of data available on the human and economic cost of exacerbations of COPD.

Part 2 has 2 chapters that focus on the pathology and immunology of COPD exacerbation, and it gives a nice overview of the role of oxidative stress and cytokines in smoking and COPD exacerbation. Some of the pathology figures are hard to interpret because they are in black-and-white, with low resolution. This section includes a chapter that covers biomarkers of COPD, a subject of growing interest that may help us better manage COPD exacerbation.

Parts 3 and 4 are made up of chapters that cover the clinical and diagnostic aspects of COPD exacerbation. There is a discussion of how COPD exacerbation may be a systemic illness, and a comprehensive review of the infectious causes of COPD exacerbation. There is not much new in the chapter on signs and symptoms, but it is a nice review and a good update. The chapter on gas exchange is detailed and basic, but not oriented toward the clinician. There is an excellent chapter on imaging, with some very crisp radiographs and some nice computed tomograms, and this chapter was one of my favorites. Following it is a chapter on

the assessment of severity of COPD exacerbation. This chapter has useful tables with guidelines, and a discussion of relevant translational research. The section on the complexities of the cardiopulmonary interactions in COPD exacerbation focuses on predictive models and is an interesting read, but, again, hard to apply in practice. Skeletal muscle weakness is a major issue in COPD, especially at the end stages, and this is covered in an excellent chapter that includes discussion of bed rest, deconditioning, oxidative stress, and systemic inflammatory response syndrome.

Water and electrolyte imbalance, metabolic derangements, and nutrition are covered in individual chapters. It was nice to get into the details of these topics and to learn more about the complexities of the nonpulmonary aspects of COPD exacerbation. In addition to background, these chapters provide useful guidelines for management. The chapter on sleep is adequate but might have benefited from a discussion of translational research on this subject.

The treatment of COPD exacerbation has inched forward with very slow progress over the past 20 years. The chapters on antibiotics, corticosteroids, and oxygen include little new data. There is a nice discussion of how to identify responders to corticosteroids. The topic of carbon dioxide retention and oxygen treatment is also covered, but, again, there is not much new here.

There are 3 chapters devoted to mechanical ventilation. These chapters are good and well worth a read. They provide useful practical guidelines and are easy to read. Home management of COPD exacerbation and rehabilitation are covered, but there is not much new here either. I was, at first, puzzled by the title of Chapter 31, "Acute Exacerbations of COPD as Outcome of Therapeutic Interventions." The chapter is more of a treatment summary, and, again, there is not much new here. The final chapter is an interesting discussion of research and future advances, and gives one hope for the future of COPD-exacerbation treatment.

So, in summary, the volume is comprehensive and covers the pertinent issues of COPD exacerbation. I enjoyed reading it and learned a lot. However, I had some problems with it also. The chapters are not all consistent. For example, not all have summaries, which is a pity. There are some topics that I was surprised were not included. A chapter on the role of smoking in COPD exacerbation would have been worthwhile. An outline of nicotine-addiction treatment strategies would have been helpful and relevant. This is a common problem in treating COPD exacerbation. Pollution can also contribute to oxidative stress and is relevant to COPD exacerbation and probably could have been included. The genetics of COPD and COPD exacerbation is a growing subject and might have warranted a chapter at the end.

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Fast Facts—Chronic Obstructive Pulmonary Disease, 2nd edition. William MacNee and Stephen I Rennard. Oxford, United Kingdom: Health Press. 2004. Soft cover, illustrated, 129 pages, $24.

This book, **Chronic Obstructive Pulmonary Disease**, is part of a series called *Fast Facts: Indispensable Guides to Clinical Practice*, which is published by a British publisher, Health Press. The authors, both highly regarded scholars and thought-leaders in research on chronic obstructive pulmonary disease (COPD), state that the book's goal is to "present an up-to-date summary of our understanding of COPD and of how patients should be evaluated and managed." Though a target audience is not explicitly stated, the language of the text and the inclusion of chapters on pathophysiology (with discussion of, for instance, cytokines) suggest an intended physician audience, of general practitioners, family physicians, internists, and physicians in training. At the same time, in my view, the concise, well-presented material recommends itself to practicing respiratory therapists, advanced students, and to nurses in practice and training.

The book consists of 126 pages, organized into 9 brief chapters: "Pathology," "Etiology and Natural History," "Clinical Features," "Lung Function Tests," "Imaging," "Smoking Cessation," "Therapy in Stable Disease," "Acute Exacerbations of COPD," and "Future Trends." The final page offers useful Internet addresses, including those of important American and British Web sites. Indeed, the joint authorship, which includes professors in Scotland and the United States, gives the book a more global scope and flavor, with discussions of the magnitude and health-care burden of COPD in both the United States and the United Kingdom. For example, the chapter on COPD exacerbations begins with a discussion of the scope of exacerbations and their burden on the British health system. In the context of this international focus, the book may be of interest to respiratory clinicians on both sides of the Atlantic Ocean.

In keeping with the "Fast Facts" appellation, the style is succinct and the included material is current, clinically relevant, focused, and designed for easy availability. For example, each chapter has a distinct color scheme that is indexed on the book's cover, and coordinated colored margin tabs make it easy to locate material. The text combines readability with scholarship. The figures are cited from key studies and summaries, such as the 2003 update from the Global Initiative for Chronic Obstructive Lung Disease (GOLD). In keeping with the 2004 publication date, the citations are current (eg, they include the 2003 update of the GOLD guidelines and COPD staging system), though, as is inevitable with publication deadlines for books, some late-2003 guidelines (eg, the American Thoracic Society/European Respiratory Society standards document on managing alpha-1 antitrypsin deficiency[1]) are not cited.

As another helpful feature of the text, the first 8 chapters conclude with tables of key references and of key points summarizing the material in the chapter. Readers who want an accelerated review of the essentials of COPD will find these 8 tables a succinct primer.

The tables and figures are crisp and clearly rendered, with excellent readability. Of particular value is the authors' dedicating an entire chapter to smoking cessation—a critical intervention in clinical management of COPD—and their inclusion of a table that very nicely summarizes the various nicotine delivery systems (eg, patch, gum, inhaler, and nasal spray). One small exception is Figure 4.5, which depicts flow-volume loops from patients with various degrees of airflow obstruction. To my eye, the classically "coved" appearance of the expiratory loop, representing the concave appearance of the curve that stems from the decreased flow rate at lower lung volume, was difficult to appreciate in Figure 4.5.c.

Features that especially commend the book to respiratory therapists are its concise

Chronic obstructive pulmonary disease. From Wikipedia, the free encyclopedia. "Emphysema" redirects here. For other uses, see Emphysema (disambiguation). Chronic obstructive pulmonary disease. Other names. Chronic obstructive lung disease (COLD), chronic obstructive airway disease (COAD), chronic bronchitis, emphysema, pulmonary emphysema, others.Â COPD is a type of obstructive lung disease in which chronic incompletely reversible poor airflow (airflow limitation) and inability to breathe out fully (air trapping) exist. [2] The poor airflow is the result of breakdown of lung tissue (known as emphysema) and small airways disease (known as obstructive bronchiolitis). COPD (chronic obstructive pulmonary lung disease) is a group of diseases that includes chronic bronchitis and emphysema. Over time, COPD makes it harder to breathe. Although you canâ€™t reverse the lung damage, medication and lifestyle changes can help you manage the symptoms.Â What is COPD (chronic obstructive pulmonary disease)? COPD is an umbrella term for a range of progressive lung diseases. Chronic bronchitis and emphysema both can result in COPD. A COPD diagnosis means you may have one of these lung-damaging diseases or symptoms of both. COPD can progress gradually, making it increasingly difficult to breathe over time. Chronic bronchitis. Chronic bronchitis irritates your bronchial tubes, which carry air to and from your lungs. Bronchiectasis. Bronchiolitis Obliterans. Chronic Obstructive Pulmonary Disease (COPD). Cystic Fibrosis. â–º Interstitial Lung Diseases.Â 3. Pulse oximetry and arterial blood gas measurements are performed to estimate the severity of COPD exacerbations, in chronic respiratory failure, and to monitor the safety of oxygen therapy (risk of increasing hypercapnia). 4. Sputum cultures (or tracheal aspirate cultures in intubated patients) are performed in patients with severe or prolonged exacerbations and an increased sputum volume or purulence. 5. Other tests : 1) Complete blood count (CBC) : Polycythemia (hematocrit often >55%) in patients with hypoxemia or normocytic normochromic anemia (anemia of chronic disease).