

Pharmacology and Therapeutics of Asthma and COPD. Clive P Page and Peter J Barnes, editors. (Handbook of Experimental Pharmacology series, volume 161. K Starke, series editor) Berlin: Springer-Verlag. 2004. Hard cover, illustrated, 376 pages, \$349.

There are many books, review articles, Internet sites, and traveling lecturers offering information on every practical aspect of therapy for asthma and chronic obstructive pulmonary disease (COPD), so why is there a need for another 376-page book on the topic? A second question is, who will benefit by referring to this book? And a third question is, does it offer any important new insights into the practical treatment of these common bronchospastic diseases?

The first question is partly answered in the preface, which points out that the editors previously published a book on the pharmacology of asthma, in 1991, and that the subsequent decade had been one in which an enormous mountain of new information had been generated. It would have been of interest if the authors had written a summary chapter detailing pharmacologic advances over the decade and explaining the relatively scant progress in drugs for asthma and COPD with the deluge of advances in other major therapeutic battlefields such as heart failure and peptic ulcer. It is notable that this new book can list only the leukotriene drugs as an important new class of traditional therapeutic molecular agent, whereas most of the other marketed agents of the 1990s and early 21st century are drugs similar to the old ones and simply offer the one major advantage of greater persistence of effect.

So why is there a need for a new book? The main justification is that the 2 editors are the foremost investigators of respiratory pharmacology in the world, and they wrote or contributed to half of the chapters. The remaining 7 chapters were written or contributed to in similar style by a total of 17 other authors, all of whom were selected for their depth of knowledge of the literature in their topics. The book is relatively unique in providing a critical discussion of a huge number of published articles, with the reference list for each chapter being similar in length to the text. What is extraordinary is

that in each chapter this enormous literature has been evaluated and then woven into a logical text that places the huge body of work into a meaningful context that very few individual readers could have generated on their own by delving into the wide range of journals that the authors have scoured, devoured, and absorbed. This is a scholarly tome that compresses a mass of disorderly facts into a cogent narrative history, which, not unexpectedly, does not always make for easy reading.

Who will gain by looking into this book? The editors suggest that it will be of value to research scientists and research clinicians, and those involved in the development of new drugs. Undoubtedly this is correct. They also express the hope that it will be invaluable for clinicians and respiratory physicians who treat asthma and COPD, but undoubtedly this is doubtful. Through their analysis of the exhaustive burden of increasing information on drug mechanisms, and the reported properties of individual agents that have been subjected to research studies, the authors have provided investigators with extremely valuable reviews. One is awed by the insights provided in this book's analysis of the ever-burgeoning information on pharmacology and molecular biology, and the innovations that have emerged from university and industrial research laboratories. Clinician readers will find much of this information to be impressive, but they are likely to be overwhelmed by the detail. Moreover, it is disappointing to find that very little of the current understanding of bronchospasm and inflammation is being translated into dramatically innovative therapy in the clinic or in the intensive care unit. However, it can be envisaged that a keen fellow in training would be happy to read and retain some of this emerging knowledge so as to regurgitate it to impress juniors and to confuse seniors, although such erudition will not influence patient care.

This leads to the third question regarding new insights into treatment. The information is at best encouraging, but very little in the way of practical information can be extracted that will influence the experienced practitioner. Clinicians who treat patients will perhaps read the first half of this book on the current drugs and therapies of asthma

and COPD to gain a thoughtful view of standard drugs. They will be particularly impressed with the chapter on corticosteroids, which makes the complex actions of these agents surprisingly understandable. The 5 figures provided by Barnes will be borrowed by lecturers who will like the clarity of his drawings. In contrast, the chapter on β -adrenoceptor agonists has only one good figure, explaining the molecular pathways, while the chapters on anticholinergics and theophylline are not illustrated. The chapter on mediator antagonists and anti-allergy drugs lacks illustrations and only offers relatively brief attention to the antihistamines, leukotriene receptor antagonists, and chromones. Furthermore, this chapter leaves the impression that these "advances" are doomed to be therapeutically disappointing.

The second half of the book is totally different. Eight chapters discuss the wealth of research information on new drugs, most of which, however, are never going to be used in the clinical setting. These include the familiar classes such as bronchodilators, phosphodiesterase inhibitors, anti-allergic drugs, and novel anti-inflammatory agents. The new bronchodilators encompass the fashionable nitric oxide and less impressive agents such as vasoactive intestinal peptide, atrial natriuretic peptide, and potassium channel openers. This is certainly grist for the researcher, with discussion on agents such as Ro25-1553 (Ac-Glu, Lys, Nle, Ala, Asp, Leu, Lys, Gly, Thr-vasoactive intestinal peptide (cyclo 21-25)). (Note: Some reference numbers are included inappropriately, and the final bracket is missing in the text on page 157). This complex chapter is dignified with one figure, which is partly colored green to make it more palatable, but it is still a digestive challenge. The chapter on new phosphodiesterase inhibitors (which are also covered to some degree in the preceding chapter) is certainly for the intrepid. If you can cope with single sentences that include information on AH-2132 (benzafentrine), ibudilast, and MKS492, or sentences that discuss PDE4 (phosphodiesterase) or IL-2mRNA (interleukin-2 messenger ribonucleic acid), this is the chapter for you.

The chapter by Barnes on cytokine inhibitors dilutes the intellectual assault with 12 of his characteristic "Barnesograms,"

which illustrate the bewildering complexity of the inflammatory reaction. However, the findings are not very encouraging, since novel drugs that inhibit single cytokines seem to have little therapeutic promise, although emerging research drugs that inhibit multiple cytokines may be more successful.

A novel aspect of the airway inflammatory response is discussed in the chapter on inhibitors of leukocyte endothelial adhesion. Such drugs could inhibit the migration of white cells into pulmonary tissue and thereby abort the bronchospastic response. This avant-garde approach to asthma introduces us to the various adhesion molecules, such as selectins and glycoprotein ligands, and to integrins, while epidermal growth factor and novel statins make cameo appearances. At this point the reader is sufficiently impressed with the ranks of dangerous cell invaders that it becomes disappointingly easy to envisage new drugs serving as hopelessly outnumbered border police that are designed to inhibit this dangerous trafficking across cell membranes.

The chapter on new anti-allergic drugs is slightly out of date, since the only truly interesting and innovative agent to emerge from research is the recently released rhuMab-E25, which we know as omalizumab. This should have been greeted with a greater fanfare, since it is the sole truly original asthma drug to be marketed, and it would have been useful if this chapter included more suggestions on how to position this agent in clinical therapy. The authors go on to provide an interesting discussion on deoxyribonucleic (DNA) acid vaccination, plasmid vaccination, and immunostimulatory DNA sequences combined with allergenic protein. However, much more clinical research will be needed before such agents enter into the daily practice of the allergist or pulmonologist. Similarly, as the following chapter on gene therapy points out, such cutting-edge research may have a relatively limited value in therapeutics, since the derived treatments would be cost-effective in only a small proportion of patients.

Clinical researchers will find the chapter on new drug evaluation to be very valuable, and this chapter is likely to be the one that is most appreciated by those who refer to this book selectively. It provides a general review of all the current tests and clarifies what end points should be sought. Although details are generally skimpy, the well-selected reference list will direct readers to relevant airway function tests, exercise eval-

uations, blood analyses, and even sputum analysis reports. Allergen challenge tests and herbal medicine challenge tests are also alluded to in this comprehensive review.

The final chapter by the 2 editors refers to about 100 references on novel anti-inflammatory therapies. The agents considered are a bewildering array of mediator antagonists, protease inhibitors, transcription factor inhibitors, signal transduction inhibitors, immunomodulators, vaccines, and remodeling agents. This skillfully organized account includes a variety of newly emerging terms that might be destined to become more commonplace, such as metalloproteinases, mitogen-activated protein kinase, GATA-3 (DNA sequence), calcineurin, nuclear factor (NF)-kappa β , c-Jun N-terminal kinase (JNK), and chaperonins. Unfortunately, an enormous number of drugs that have been designed to work on molecular pathways involving these agents have been shown to be unsuitable for clinical use. This information, however, could help the public understand how much effort with so many frustrating journeys into pharmacologic cul-de-sacs goes into bringing a suitable medication into the advertising pages of medical journals.

Overall, one must question the role of a book that evaluates such a wealth of material. Much of the research information is available in reviews or state-of-the-art articles in scientific or clinical journals, and the therapeutic uses of available drugs is presented in more practical format in numerous books and other published articles. Such a book can never be up to date, although a few of its listed references are as recent as 2002. Clinicians and investigators will be able to find most of the information on the Internet or in the abstracts of presentations at national meetings. This book could have made it easier to access its complex information by presenting more summaries in detailed tables or with more explanatory diagrams or cartoons. It is regrettable that the index in this book is a disaster, and it raises the question of whether an index is necessary, since each chapter provides a detailed tabulation of the chapter contents and a concise abstract that reviews the information.

Although I was pleased to have had the opportunity to review this book, it is evident that its main market will be research libraries rather than individuals or hospital libraries. More important, it makes one wonder if books such as this will be published in the future, since information retrieval is

becoming far less dependent on volumes that are filled with a mixture of chapters, each of which is likely to appeal only to a very selective audience, with most readers having little interest in the rest of the book. The volume is listed as number 161 in the series *Handbook of Experimental Pharmacology*, but it is now time to reclassify the series as "Shelfbook," since the truly useful books are metamorphosing into handheld personal libraries. For those who enjoy books for their evocative decorative appearance, this book may provide a welcome addition to this erudite series.

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ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities, 2nd edition. J Larry Durstine PhD and Geoffrey E Moore MD. Champaign, Illinois: Human Kinetics. 2003. Hard cover, illustrated, 374 pages, \$49.

This is the second edition of this title, which surveys a broad range of chronic diseases and disabilities that may be represented among the expanding spectrum of persons referred for exercise testing or exercise prescription. The conditions covered range from cardiovascular diseases to orthopedic conditions to mental illness. The number of chapters has increased from 42 in the first edition to 49 in this edition, due to splitting some of the earlier edition topics into subsets and adding a few additional conditions.

The book is intended for exercise specialists, which would include respiratory therapists involved in an exercise testing laboratory or a rehabilitation service, as well as individuals with primary training in exercise science. It is written at a level that requires some familiarity with medical terminology but not extensive medical expertise. It does assume that the reader is familiar with exercise physiology and has the technical knowledge and proficiency for performing exercise testing and/or training.

The content is organized into 8 sections. The first section is mainly introductory, with considerable space given to explaining the editors' intent, the terminology used in the text, and the structuring of the individual chapters. A chapter on testing children is included here, apparently because it didn't fit neatly anywhere else. Subsequent sections include cardiovascular diseases, pul-