

## ■ REVIEWS OF EDUCATIONAL MATERIAL

James C. Eisenach, M.D., Editor

**Anesthesia Drug Manual.** Edited by Paul F. White. Philadelphia, W.B. Saunders, 1996. Pages: 378. Price: \$35.00.

This manual is an honorable and courageous attempt by these authors to produce a comprehensive, user-friendly outline of commonly and not so commonly used pharmacologic agents. This treatise is directed at anesthesia health care providers, both in practice and in training and critical care and pain management specialists. Intensive care unit nurses might find many portions of this text useful.

The drugs are grouped according to the pharmacologic classification system used by the Physicians Desk Reference and the United States Pharmacopeia. Within each specific drug group, the drugs are listed alphabetically according to their generic names. The authors classify each drug into 1 of 34 chapters from "Adrenergic Agonists and Antagonists" to "Vitamins and Nutritional Supplements." Each drug is examined according to the following parameters: indications, pharmacokinetics, pharmacodynamics, dosages/concentrations, contraindications, and drug interactions/allergy. The editor also includes an additional section on "Immunizing Agents."

In the "Indications" sections, we find an effort by each author to briefly describe the clinical situations in which a particular drug is most likely to be used. This is generally done in 10 words or less, and for the majority of drugs this suffices. However, several notable exceptions exist, and for the novice anesthesiologist or nurse anesthetist some of these indications could be misunderstood and thought to be the only indications where the particular agent might be used. As written, this section is primarily useful to those already familiar with the proper use of each pharmacologic agent. Lacking are a few lines on appropriate alternate therapies, if for example, the reader's first choice is contraindicated in a particular patient.

The "Pharmacokinetics" section will not prove as useful to many readers because this section assumes that all readers are familiar and comfortable with terms such as;  $C_{max}$ ,  $V_d$ , clearance, protein binding, and  $T_{1/2}$ ,  $\alpha$ ,  $\beta$  and  $\gamma$ . There appears to be no set format to this section as the presented information varies between and within chapters, from molecular weights to oil and water solubilities and  $pK_a$  for some agents (calcium channel blockers). Additionally, descriptions of many of the drugs lack any words on metabolism, active metabolic byproducts, or routes of elimination.

The "Pharmacodynamics" section was most informative, well outlined, and easy to read and understand. This section uses a systems approach and covers the side effects and systems interactions of each described agent. The outline format allows the reader to identify key words necessary to the understanding of the proper uses of each drug.

The "Dosage/Concentrations" section offered information on the concentrations of the drugs available but does not always inform the reader as to how these agents are supplied, and many inconsistencies are evident in this section. The most obvious occurred with those drugs described in more than one section (scopolamine and cimetidine). Although the authors made some attempt to include pediatric dosages, there are many sections where these dosages are omitted when considering drugs well known in the pediatric arena. Additionally, many doses were not described in the routine, pediatric mg/kg format. A few pediatric doses were incorrect; phenobarbital and dilantin being among the most obvious examples. Finally, the most

obvious of dosage errors occurred where the authors neglected to mention the minimum pediatric dose for atropine.

The sections on "Contraindications" and "Drug Interactions/Allergy" elegantly display the author's goal of offering a manual that would assist in the evaluation of patients on the day of surgery. This is perhaps the most useful section (along with the Indications section). This section outlines possible contraindications or adverse reactions that a particular drug could provoke in pointed and easily readable terms.

Finally, the section on "Immunizing Agents" could have been augmented by using the authors' previous format of "Dosage/Concentrations," "Contraindications," and "Drug Interactions/Allergy." As written, it adds little to the text.

The sections on antimicrobial agents, antineoplastics, bronchodilators and antiasthmatics, hormones, and psychotropic drugs are put together well and worth a read, especially as a quick, fairly comprehensive guide to patients admitted for same day surgery.

The editor skillfully identified many well-respected authors for each chapter. In addition, the outline of the text was fairly easy to digest. The laminated paperback format and price make this text portable, durable, and affordable. Although an excellent idea, this treatment falls somewhat short of the mark of its stated goals and projected target audiences. Expectedly, such a large task produced several inconsistencies. Overall, there is not enough practical information presented in a fashion that will allow most readers to find this a valuable addition to their libraries. It will prove useful to the seasoned health care provider as a pocket reference for drugs not commonly encountered in our daily practices.

**Dolores B. Njoku, M.D.**

**Jackie L. Martin, Jr., M.D.**

Department of Anesthesiology and Critical Care Medicine  
The Johns Hopkins University  
Baltimore, Maryland

**Geroanesthesia. Principles for Management of the Elderly Patient.** By Stanley Muravchick. St. Louis, Mosby-Year Book, Inc., 1997. Pages: 306. Price: \$64.95.

*Geroanesthesia* is an ambitious, thought-provoking "how-I-rationalize-what-I-do" treatise discussing a physiology-based approach to the perioperative treatment of the elderly patient and not a "how-to-do-it" manual or a standard textbook chapter expanded into full text. Its uniqueness is reflected in the quirkiness of its title, which is defined in the Preface. For this monograph to be truly appreciated, it first should be recognized for what it is not because it focuses on a select audience for a serious intellectual purpose. It is not a reference book to select the night before the administration of an anesthetic to a geriatric patient. It is not a book to be read without a strong basic knowledge of normal physiology or anesthesiology. It is not a book to be read in preparation for the written or oral certifying examinations. Finally, it is not a book to be read casually. But it is a book that could serve as the sole background reading for a consensus development conference convened to define the subspecialty of ger-



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anesthesia. Each chapter is really a serious essay by the same author who has written extensively in the field of geriatric anesthesia. To fully appreciate this book, the reader should forget speed reading, ignore its Index, and set aside some time. Each chapter is meant to be perused, each conclusion challenged, and each revelation savored. If the standard textbook chapter is viewed as a cup of instant coffee to be drunk on the run, this book is a pot brewed for the evening from the best beans freshly ground.

Chapters 1 and 2 provide overviews of aging, preoperative evaluation, and perioperative management. Chapters 3-8 are organized as follows: physiologic overview of an organ system, specific discussion of how aging affects physiologic function within this system, anesthetic implications, and a case history. All the illustrations are original with the author, and they contributed significantly to my understanding of the author's line of reasoning. The physiologic interpretations in the chapters devoted to the central nervous system, the peripheral and autonomic nervous system, body composition and metabolism, the cardiovascular system, and the respiratory system inspired many "I-didn't-realize-that" and "that's-an-interesting-way-to-present-this" thoughts. But the combination of renal and blood functions in the final chapter seemed awkward and contrived. A separate chapter on blood functions including an extensive discussion of oxygen delivery and transfusion criteria in the elderly population would have been welcome. The bibliography for each chapter averages more than 200 references.

The real strength of each chapter is the physiologic overview and how aging affects function. In the Preface, the author states that "... for perhaps the first time, we now have an adequate understanding of general concepts of human aging and sufficient data regarding organ function and functional reserve in older adults to attempt a comprehensive and detailed overview of the implications of aging with regard to the perioperative management of the elderly patient. That is the purpose of this book." I think he has demonstrated that we are not there yet because each chapter consistently becomes less satisfying when anesthetic implications and perioperative management are discussed. The brief clinical histories provided as clinical correlations at the end of each chapter do not really work and could easily have been deleted.

The risk of challenging readers is to invite criticism. I would like to suggest just a few. First, the American Society of Anesthesiologists' physical status is vigorously defended as "... influenced neither by the patient age nor by the type of surgery ..." yet the effect of aging discussed in each chapter could be classified at least as significant as mild systemic disease. Second, the statement is made that "... the importance of avoiding arterial hypotension intraoperatively in elderly patients with pre-existing hypertension and cerebrovascular disease would seem to be self-evident ..." [to avoid a perioperative stroke] despite no definition of hypotension, an acknowledgment of the success of deliberate hypotensive techniques, and the nonacknowledgment that most perioperative strokes are embolic or hemorrhagic in origin. Third, although the body composition and metabolism portion of Chapter 5 is enlightening, the ensuing pharmacokinetic discussion tries too hard to associate mathematical with physiologic compartments. I would also recommend skipping the pharmacokinetic discussions on pages 166-174—the only really significant blemishes in 306 pages.

In summary, *Geroanesthesia* is like a movie that succeeds in the eyes of the critics but does poorly at the box office. The serious in-control-of-his/her-time anesthesiologist will find this introspective effort worth the price and the time commitment. The harried trying-

to-catch-up anesthesiologist will be annoyed that the author expects the reader to read whole sections of "why" rather than just one paragraph of "how" to answer a specific clinical question. Sadly there are more of the latter than the former.

**Raymond C. Roy, M.D., Ph.D.**

Professor and Chair

Department of Anesthesiology

University of Virginia Health Sciences Center

P.O. Box 10010

Charlottesville, Virginia 22906-0010

**Essays on the History of Anaesthesia.** Edited by A. Marshall Barr, Thomas B. Boulton, and David J. Wilkinson. International Congress and Symposium Series 213. London, The Royal Society of Medicine Press, Limited, 1996. Pages: 237. Price: £15.50 (plus £2.50 p&p in Europe, and £5.50 worldwide).

This diverse, stimulating group of essays is a representative cross-section of papers presented at the first four annual meetings of the History of Anaesthesia Society (Reading, England) from 1986 to 1989. The editors have grouped the papers, revised for this publication, under such headings as "Therapeutics and Science before 1846," "Early Days of Anaesthesia in Britain," "Apparatus, Agents and Techniques," and "Complications and Safety." Readers in the history of medicine, and particularly early anesthetic practice in Britain, will find this a valuable collection. The following sampling draws from several essays to suggest the variety and interest of the whole.

Five essays on the evolution of anesthetic practice in Scotland and especially in Edinburgh appear under the heading of "The Scottish Tradition." One of those papers, R. H. Ellis's "Edinburgh Threads in the Tapestry of Early British Anaesthesia," points out a schism that developed between London and Edinburgh clinicians by 1848 "over whether or not chloroform was inherently safe." Edinburgh colleagues believed chloroform to be entirely safe and held that the preferred administration was in a large and rapid dose. Londoner John Snow took exception to that view. He believed chloroform's potency required that it be administered gradually and with knowledge of the concentration being given. Edinburgh practitioners insisted on their position after 1848 when reports of death under chloroform and knowledge of its potency were becoming widely known.

Thomas B. Boulton's "The Development of the Syringe" ably reviews the 23-century story of the device. This saga supposedly began about 280 B.C. in Egyptian barber shops with the discovery of the pneumatic principle of a piston running in a cylinder, found by the invention of an adjustable mirror. One of the most significant applications of the syringe for anesthetic practice came with its first use for subcutaneous injection of medication, apparently in 1839. Dr. Alexander Wood, an Edinburgh physician, injected morphine subcutaneously in 1853, "making parenteral medication a practical and universally applicable technique." Wood was "aiming at local anesthesia of peripheral nerves" by injecting morphine through the skin. He reported the successful results from nine cases in an 1855 paper and in a second paper in the *British Medical Journal* in 1858 "triggered world-wide acceptance of subcutaneous medication." Al-