

Cardiovascular Drugs in the Perioperative Period.

By Pierre Foëx, D.Phil., F.R.C.A., F.A.N.Z.C.A., Gaisford G. Harrison, M.D., D.sc., F.F.A.R.C.S., Lionel H. Opie, M.D., D.Phil., F.R.C.P., (Eds). Authors Publishing House, New York, and Lippincott-Raven Publishers, Philadelphia, 1999. Pages: 391. Price: \$ 54.95.

THIS book has an unusual shape: it measures $4\frac{1}{2} \times 10$ inches (12×25 cm). Its bottom fits nicely into an anesthesiologist's white coat or scrub suit pocket, while its top, with the title, remains visible. Why should anesthesiologists put this book into their pockets, which are already brimming over with an array of indispensable tools? Hopefully it is not to impress their colleagues or patients with their profound interest in medicine, but rather, so that they can consult this handbook to conscientiously care for their patients with cardiovascular disease when they feel at a loss for the correct answer in this expanding, complex, and quickly changing field of cardiovascular pharmacology. All of us are well aware of those ever-recurring questions: How will these drugs interact with my anesthesia plan? Should the drugs be withdrawn or continued throughout the perioperative period? Which drug or drug combination represents the best therapy when an hemodynamic catastrophe occurs? What can I do to prevent adverse outcomes? Without much exaggeration we might describe anesthesia and perioperative intensive care as a kind of applied pharmacology. With particular regard to the prevalence of cardiovascular disease in the ever-increasing category of older surgical patients and with the variety of drugs and therapies already involved in their treatment, cardiovascular pharmacology is predominantly what many of us are practicing on a daily basis. Proper knowledge, understanding, and application of drugs that act on the heart and vessels are all prerequisites to keeping cardiac adverse effects at a minimum and, thus, further increasing patient safety. This know-how distinguishes the anesthesiologist from the technician.

The book was written as a reference for all physicians (residents, practitioners, and faculty alike) involved in perioperative patient care. Its concept and outline follow the most successful *Drugs for the Heart*, conceived by the cardiologist Lionel Opie, and already in its fourth edition. I suspect that Lionel Opie realized how exciting anesthesia and perioperative care are and seduced two outstanding anesthesiologists and distinguished teachers, Pierre Foëx and Gaisford Harrison, into cowriting and editing this handbook with him. Of course, it may also have been the other way around. I commend the editors for recruiting excellent contributors, the majority of whom are from the United States, and for the excellent editorial guidance that they give their contributors; the resulting text is well-balanced, uniformly organized, and easily read.

The handbook consists of two parts: the first part covers the pharmacology of cardiovascular drugs used perioperatively, while the second part is dedicated to pharmacological management of the most frequent cardiovascular disease-states relevant to the perioperative period. The first part begins with a review of the autonomic nervous system and the mechanisms involved in myocardial contraction, peripheral vessel tone, and overall control of the cardiovascular system. The chapters following are dedicated to cardiovascular effects of volatile and intravenous anesthetic agents, adrenergic receptor agonists, adrenergic inhibitors, calcium channel antagonists, and vasodilators. I wonder why local anesthetic agents with their important indirect and direct cardiovascular effects were not included?

The second part of the handbook opens with a chapter on cardiac arrhythmias and their management. The basics of electrophysiology and perioperative arrhythmogenesis and the available antiarrhythmic drugs are described in great detail, and algorithms for treatment are presented. The high prevalence of both treated and untreated hyper-

tension in the surgical population underlines the importance of the ensuing chapter that offers clear and rationale guidelines for perioperative management of patients with hypertension and hypertensive heart disease. The subsequent chapters are dedicated to prevention and treatment of perioperative myocardial ischemia, management of heart failure, cardiopulmonary resuscitation, and cardiopulmonary bypass. Every chapter contains clear headings and closes with a concise summary and a list of references. The latter are appropriate, both with regard to their number and selection. Given the copyright year 1999 it is understandable that the references do not extend beyond 1997. The index is well organized and allows an expeditious search for topics of interest.

The reader will certainly appreciate the comprehensible diagrams that are extraordinarily helpful in understanding the complex matter of cardiovascular cell signaling and drug action. These diagrams are the trademark of Lionel Opie's publications and are well enshrined in the memory of many former students and readers. In addition to the explanatory diagrams, a great deal of useful information on therapy with cardiovascular drugs is summarized in clearly structured and user-friendly tables. The dosing recommendations are correct and standardized throughout the handbook, with the exception of nitroglycerine (pages 147, 264, and 293): these excessive doses must be a typing error.

Given the structure and contents of the handbook, it is not surprising that there are some overlaps, because often one drug is used in different clinical situations and therefore is dealt with in more than one chapter. This is not a weakness; rather it facilitates the search for desired information.

A transatlantic information gap is noticeable; in Europe anesthesiologists have had a long experience with intravenous clonidine for perioperative pressure control and many also use intravenous boluses of urapidil to control perioperative hypertension. Nevertheless, this very useful and safe drug is not mentioned in this handbook. In continental Europe, sublingual or oral nifedipine is not considered safe for treating acute hypertension because of the risk of stroke, particularly in the elderly. Interestingly enough, the loading dose of amrinone is still given as 0.75 mg/kg throughout the book; this dose, in our experience, is too high, can cause excessive vasodilation, and can put the patient at risk of severe hypotension.

When consulting this type of handbook, anesthesiologists or intensivists often seek answers to ongoing controversies such as the choice of vasopressors and inotropes (often influenced by indoctrination during the residency), correction of potassium deficit, administration of calcium, prophylactic low (renal) dose of dopamine, use of sodium bicarbonate, prophylactic perioperative β -blockade, preoperative withdrawal of drugs interacting with renin-angiotensin system, and many others. He or she should not expect to find clear-cut answers or never answers, because the required evidence is still inadequate for such a final statement and often is in conflict with clinical experience. Nevertheless, the handbook provides the available and relevant facts that should allow for optimal custom-made clinical decisions.

Handbooks on pharmacotherapy usually have a great deal of trouble keeping pace with drug development and are at risk of quickly becoming outdated. New drugs are introduced, therapeutic studies and guidelines are published, novel therapeutic concepts emerge, and clinical experience is growing steadily. Hopefully, the editors will respond to this ever-changing progress by publishing a new revised edition in the near future.

Are there any issues that could have been included in the book or emphasized more? Given the natural diversity of medical thinking and clinical experience it would be surprising if this were not the case. For example, many anesthesiologists use regional anesthesia either alone or in combination with general anesthesia for patients with cardiovascular disease. Vasoactive drugs are often needed, in particular to treat the hypotension induced by sympathetic nervous block. It is known that vasopressors may differ in their cardiac effects depending on the

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height of sympathetic blockade. Clearly, updated information on the cardiovascular effects of regional and combined anesthetic procedures, particularly in cardiac patients, would be valuable. I would also have appreciated comments on ischemic preconditioning, combination of phosphodiesterase inhibitors and adrenergic receptor agonists, dynamic obstruction of the left ventricular outflow tract (worsened or even induced by inotropes), use of insulin and thyroid hormones in acute heart failure, and use of adenosine in transluminal aortic stenting. Perhaps more emphasis should be put on acute heart failure, which manifests as pulmonary edema, low cardiac output, or cardiogenic shock, and on isolated right ventricular failure. In the latter condition, use of separate ports for the administration of vasodilators and vasopressors administration should be considered. Drugs represent an important part of cardiopulmonary resuscitation. An update, based on the new cardiopulmonary resuscitation guidelines established by the American Heart Association and European Resuscitation Council, particularly with regard to the addition of vasopressin and to the dosing recommendations for adrenaline, amiodarone, and magnesium should also be included. The last chapter on vasoactive drugs and cardiopulmonary bypass concentrates more on the management of the postbypass period and provides no data on the pharmacokinetics and pharmacodynamics of cardiovascular drugs during extracorporeal circulation. Many practitioners would welcome evidence-based recommendations concerning blood pressure control during bypass.

These suggestions are by no means meant to demean the present value of this excellent and important pocketbook, which is certainly worth its reasonable price. In contrast to the standard final recommendations, it really does not merit resting on a bookshelf in the library, but rather it should circulate on the ward, in the operating room, and in the intensive care unit, as the editors suggest in the Preface of the book, until its contents have been fully memorized by all who care for patients.

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Board Stiff Too: Preparing For the Anesthesia Orals, Second Edition. By Christopher J. Gallagher, M.D., Steven E. Hill, M.D., David A. Lubarsky, M.D. Woburn, Butterworth-Heinemann, 2001. Pages: 390. Price: \$46.00.

ANESTHESIOLOGISTS encounter intense stress on a daily basis. The nature of the profession demands that they anticipate, recognize, and manage potentially lethal complications during the case of every patient. Interestingly, there is a situation that can be even more stressful

for the anesthesiologist than those dreadful complications—taking the oral board examination.

The final stage of the board certification process requires the candidate to display, during simulated clinical scenarios, the qualities worthy of a professional consultant in anesthesiology. In addition to knowledge, however, a successful candidate should possess an appropriate level of judgment, application, adaptability, and clarity of expression. For those who have been taking written examinations all of their lives, the requirements may seem vague and subjective. Unfamiliarity with the format can be a critical weakness in taking this type of examination.

Board Stiff Too, the second edition of the very successful original, provides unconventional, yet indispensable, information to those who are knowledgeable of the particulars involved, yet unfamiliar with the oral board process. As represented by the title, this expanded version is unique among the professional textbooks and review books available. First, the tone and style of the text cannot be more conversational and empathetic. The authors do not present themselves as superior to the reader, either intellectually or professionally. The only difference is experience. These authors already have gone through the process of taking and passing the oral examination. As a result, the authors quickly establish intense emotional bonding with a trusting and receptive readership. The authors represent friends, not enemies. Second, *Board Stiff Too* delivers content not found in any other review book. It focuses on strategies and advice. It basically compiles all recurrent advice and tips floating around the operating room area during the frenzy time just before the examination. *Board Stiff Too* will not teach you how to practice anesthesiology well, but it may teach you how to prepare for an oral examination. The new and improved edition is divided into three sections. The first section, "Driving School," contains advice on strategies for preparation, common reasons for failure, and the examination format. The second section, "Mechanic's Manual," contains a general overview of problems associated with vital signs, equipment, airway, obstetrics, trauma, pediatrics, and so on. By no means is the information here sufficient to prepare for the examination, but then, that is not the purpose of the section. The third section, "Test Tract," provides simulated test outlines and answers mixed with personal critiques.

The authors expect two things of the readers. First, the reader must have already acquired a sufficient base of knowledge to pass the examination. Second, the reader must repeatedly practice mock oral examinations aloud before the actual examination. Without either of these two factors, this book is not going to serve its sole purpose: to help the reader pass the oral board examination. In short, *Board Stiff Too* is ideal for the candidate with sufficient knowledge, who needs to familiarize him or herself with the examination format and develop appropriate strategies for expressing knowledge and judgment.

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