

## BOOK REVIEWS

Edward Lowenstein, M.D., Editor

*This month we are publishing for the first time in the Book Review Section of ANESTHESIOLOGY a review of a commercially published software package. This constitutes a modest experiment that reflects the increasing availability of personal computers, the increasing familiarity with their use, and the development of software to provide and teach new and old information relevant to medicine in general and anesthesiology in particular.*

*Educational software is probably still in its infancy. "Artificial intelligence" systems, thus far primitive and requiring more power than most PCs now possess, may soon become practical. Hopefully, they will permit far more sophisticated and effective approaches than are now possible. It will be interesting to see whether the computer will augment or supplant books and journals as the major vehicles for disbursement of medical information, or whether it will prove to be one of those seemingly revolutionary developments that never lived up to its apparent potential.*

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**Arterial Blood Gases.** [Computer Software Package] BY EDWARD P. HOFFER, M.D., AND G. OCTO BARNETT. Baltimore, Williams and Wilkins, 1985. Price: \$95.00.

The *Arterial Blood Gases* program is supplied on one 5¼" floppy diskette, intended to run on MS-DOS or greater. Hardware requirements include an IBM-PC® or compatible with 128K memory and a double-sided disk drive. This instructional software is menu driven and uses a clinical case-method approach to teach the evaluation of ventilatory status, pulmonary oxygen exchange, and acid-base status. A small booklet describes the basic responses that direct the program through the levels of a case. The same instructions also reside on the diskette. However, these instructions introduce the fundamental analytic skills needed to approach the clinical cases.

This software explains the classic concepts used for the routine evaluation of arterial blood gases in the clinical setting. The authors are didactic and rigorous in reinforcing the principles they intend to teach. Concepts such as arterial-alveolar gradients are discussed, and the alveolar air equation is clearly described. Underlying assumptions include a respiratory quotient of 0.8, and the calculations for  $P_{O_2}$  of dry room air and  $P_{O_2}$  after oxygen supplementation are explained. Respiratory and metabolic acidosis and alkalosis are presented.

After spending an hour with this program, one will have mastered the skills necessary to evaluate any arterial blood gas and derive data on ventilatory status, oxygen exchange, and acid-base balance. Assuming that one goal of computer-aided instruction is to teach a small subject area quickly in a "workbook" fashion, it appears that this program performs well.

There are several drawbacks that should be noted. The copy-protection scheme enables the user to render the entire program useless by accident. The neophyte computer user should proceed cautiously because of this. This software will not run on a hard disk or RAM disk. The opening minutes of the program are a nuisance, asking the user for name and status (physician or nonphysician), with no apparent purpose. The program neither scores nor analyzes student errors; nor does it keep track of a user's performance.

Some questions appear interactive at first glance; however, this is misleading, as this software does not have the necessary logic or data base to respond as an "artificial intelligence" system. The program's inability to differentiate answers and proceed down the expected stem of a logic tree nullifies the interactive quality the authors try to present.

The software is rather perfunctory in its responses to therapeutic maneuvers and does not venture very far down the path of a patient's work-up. Typically, the user is quickly directed to the proper circumstances from which a correct diagnosis can be made. The authors give short explanations for some therapeutic maneuvers and their implications; only on a rare occasion is a reference provided.

Overall, the *Arterial Blood Gases* package patiently teaches the rudiments of arterial blood gas analysis. It does not contain the logical elements needed for physiologic simulation or for "intelligent" responses to user input. This software would be useful to students learning the fundamentals of arterial blood gas analysis.

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**Sudden Death of Athletes.** BY ERNST JOKL. Springfield, IL, Charles C. Thomas, 1985. Pages: 124. Price: \$19.75.

Whether malignant hyperthermia is a manifestation of "human stress syndrome" is still an unresolved question. It has been suggested that many victims of heat stroke or sudden death actually succumb to a stress-triggered malignant hyperthermia reaction. With this question in mind, one might seek answers in *Sudden Death of Athletes* by Ernst Jokl. I was alerted to this publication by a book review in JAMA.<sup>1</sup> The reviewer sharply criticized the book from a cardiologist's standpoint. Jokl had viewed his monograph as a sports medicine contribution to cardiology.

In trying to look at the problem of sudden death from an anesthesiologic viewpoint, I appreciated the format. In six chapters, Jokl reports a great number of cases and also elegantly distills literature from the first half of this century and before. Chapter II, "Sudden and unexpected death", and Chapter III, "Collapse syndromes," deal with mortality and significant morbidity associated with physical exertion. In all, there are three case reports that bear resemblance to malignant hyperthermia reactions. However, probably because the physicians reporting these cases were not familiar with this condition, they did not gather crucial information. Therefore, this book offers little help to those who seek insights into malignant-hyperthermia-related problems. It is, however, easy to read and reminds us of the many causes of sudden, unexpected death, even in physically fit individuals. Maybe some anesthetic mortality can be attributed to events analyzed in this book. Therefore, this monograph can be recommended to physicians interested in an overview of case reports dealing with cardiac pathology in athletes.

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## REFERENCE

1. Weiner DA: Book review. JAMA 254:3243-3244, 1985

*Editor's Note:*—The recent death from cocaine of Len Bias adds another important cause of unexpected death in young, healthy individuals. In our society, drug-related events may outnumber all intrinsic causes.