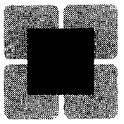

Z. NICHOLAS ZAKOV, MD, EDITOR

DIAGNOSTIC METHODS IN CRITICAL CARE: AUTOMATED DATA COLLECTION AND INTERPRETATION

Edited by William C. Shoemaker and Edward Abraham
Marcel Dekker

This general text contains 15 chapters that review current technologies used in the intensive care unit (ICU) for diagnostic and therapeutic purposes.

Chapters 1, 4, and 15 offer a good analysis of predictors of outcome of critical illness, although the discussion is somewhat short-sighted regarding long-term outcome of the application of technology in the ICU. Specifically, the necessity for follow-up at 3, 6, and 12 months following a critical illness is not mentioned and should have been emphasized.

In the chapter on cardiac monitoring as related to arrhythmias that occur in the ICU, there is no discussion of echocardiography or the overall assessment of cardiac function (contractility of the myocardium, newer technologies to assess ejection fraction, and the importance of using noninvasive techniques to determine the overall functional status of the myocardial muscle). Discussion of the overall ability of the heart to meet the oxygen demands of the tissue is good, but fails to emphasize the price the myocardium must pay to meet these demands.

Manipulation of tremendous amounts of data with the use of computer technology is described in two chapters, although there is little mention of the use of graphics display to facilitate the decision-making processes required for day-to-day care of the critically ill. Neither is there any discussion of data storage, which is a very important issue for computerization of the ICU. One chapter is devoted to a technical discussion of computer technology—and indeed is so technical that it would not benefit the reader who lacks computer expertise.

With respect to pro-active management of patients, three chapters review the importance of drug-level monitoring, analysis of various mediators of deteriorating physiology, and susceptibility to infection. While these sections underscore the necessity of having greater computer application in the ICU, the authors do not sufficiently emphasize this point.

The chapters dealing with oxygenation and ventilation offer a vast amount of information. One chapter offers an extensive analysis of techniques frequently used in the pulmonary function laboratory. This chapter has some discussion about respiratory muscle function and a brief mention of the interrelationship between respiratory muscle fatigue and analysis of respiratory muscle function. However, the authors would have served the reader better by evaluating how pulmonary function testing might be directed toward rehabilitating the ventilator-dependent patient. The chapters on technologies to assess oxygenation are well written, but unfortunately the authors make no mention of the use of pulse oximetry for the overall assessment of oxygenation of the blood. This is a definite deficiency because this technology will eventually be applied more widely than the transcutaneous oxygen electrode.

Although this text is disappointing from the standpoint of review of automated data collection and interpretation, *Diagnostic Methods in Critical Care* serves as a good reference for anyone interested in embarking on projects leading to computerization of the entire ICU.

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PULMONARY ENDOTHELIUM IN HEALTH AND DISEASE

Edited by Una S. Ryan
Marcel Dekker

Pulmonary Endothelium in Health and Disease is the latest volume in the highly respected Lung Biology in Health and Disease Series, published by Marcel Dekker. Like most of its predecessors, *Pulmonary Endothelium* is a comprehensive and authoritative text written by recognized experts and assembled by a distinguished editor.

Until recently, the vascular endothelium of the lung was thought to have little importance except as a thin semipermeable barrier that allows gas exchange between

the alveolus and capillary. As chronicled in *Pulmonary Endothelium*, this narrow conception has given way to research findings showing that the lung vasculature is important to many hemostatic, inflammatory, and metabolic functions. For instance, although the lung is not traditionally viewed as an endocrine organ, several circulating hormones with diverse pharmacologic functions (including biogenic amines, prostaglandins, and peptides) are normally modified during passage through the lungs. Since such metabolic activity of the pulmonary endothelium probably has an important homeostatic function in health, alteration of this activity in disease states may have adverse consequences. For example, studies of patients with the adult respiratory distress syndrome (ARDS), a disease that extensively damages the lung microvasculature, demonstrate depressed lung metabolic activity. It is possible that such dysfunction contributes to the systemic pathophysiology of ARDS.

This volume spans a spectrum of research from in vitro studies of cultured endothelial cells to clinical investigations of patients. The emphasis, however, is clearly on basic science. This fact, along with the high price of the book ($125), dictates that *Pulmonary Endothelium* will serve primarily as a reference source in libraries and research laboratories. Perusal of this volume by clinicians interested in pulmonary diseases is recommended, however. Such readers will be enlightened by learning of the important "nonrespiratory" functions of the lung, a subject that receives little attention in medical school or training programs.

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IMMUNOLOGY OF THE MALE REPRODUCTIVE SYSTEM

Edited by Pierluigi E. Bigazzi
Marcel Dekker

This book is one of a series on immunological aspects of healthy and diseased states. The authors are distinguished for their contributions to the field of reproductive immunology. Initial chapters deal with antibody production and the various laboratory techniques for detecting the presence of those antibodies. Later sections include detailed descriptions of animal and human studies regarding the cause, effect, and potential treatment of immune infertility. A chapter by Mettler and Czuppon illustrates the possible role of a purposefully caused immune state as a means of fertility control in men. The last three sections enumerate what is currently known about the immunobiology of the normal prostate gland, as well as testis and prostate tumors.

The clinician interested in the field of male infertility should find the sections titled "Immunologic Effects of Vasectomy in Men" and "Treatment of Immunologic Infertility in Men" interesting and easy to read. Some knowledge of laboratory techniques and background in basic immunology is required to appreciate the chapters on the biology of the immune response, particularly the discussions of the animal studies from which much of the information about the immune response is derived. Kosuda and Bigazzi put it quite succinctly in their chapter when they wrote: "After 86 years of research on animal models of testis autoimmunity, the literature on this subject has become overwhelming, often contradictory, and practically impossible to review in its entirety . . ." Despite this difficulty, the authors have made a commendable effort to be all-inclusive. With over 1,000 references (dated from 1899 to 1986), this book should be of use to both the clinician and basic scientist.

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GUIDE TO CLINICAL INTERPRETATION OF DATA

GUIDE TO PLANNING AND MANAGING MULTIPLE CLINICAL STUDIES

by Bret Spilker
Raven Press

The second and third volumes of Dr. Spilker's trilogy, *Guide to Clinical Studies*, emphasize the essential role of clinical interpretation in evaluation of data and examine the processes involved in managing multiple clinical studies. The first of the three volumes, *Guide to Clinical Studies and Developing Protocols* (1984), described the various processes in planning and managing a single clinical study. Its three sections described processes used to choose a study design, write a protocol, and plan, conduct, and terminate a clinical study. Its sequel, *Guide to Clinical Interpretation of Data*, builds upon the previous work, describing various ways of interpreting the data that result from a clinical study, as well as aspects of publishing the data. It is oriented primarily toward interpretation of clinical data insofar as it affects development of drugs. The third volume, *Guide to Planning and Managing Multiple Clinical Studies*, expands consideration from a single study (i.e., conducted at either single or multiple sites) to consideration of processes involved in