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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

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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