
Preface

The practice of intensive care medicine is at the very forefront of treatment and monitoring response. The substrate of this care is the critically ill patient who, by definition, is at the limits of his or her physiologic reserve. Such patients need immediate, aggressive but balanced life-altering interventions to minimize the detrimental aspects of acute illness and hasten recovery. Treatment decisions and response to therapy are usually assessed by measures of physiologic function, such as cardiorespiratory monitoring. By necessity, the treatments and monitoring are constantly evolving and require intimate knowledge of the operation of complex instruments, like echocardiography, mechanical ventilation, and hemodialysis. Furthermore, they need to be applied quickly and correctly at the bedside by the primary care intensivists. However, how one uses such information from the monitoring and guides treatment is often unclear and rarely supported by prospective clinical trials. In reality, the bedside clinician is forced to rely primarily on physiologic principals in determining the best treatments and response to therapy. However, the physiologic foundation present in practicing physicians is uneven and occasionally supported more by habit or prior training than science.

A series of short papers published in Intensive Care Medicine from 2002 until July 2011 with the rubrics Physiologic Notes and Technical Notes attempt to capture the essence of the physiologic perspectives and technical challenges that underpin both our understanding of disease and response to therapy and treatments. The present volume combines these papers with associated seminal articles addressing these central issues and published in the same time interval. This volume was created to address this fundamental unevenness in our understanding of applied physiology, to underscore what is currently known, and to illustrate how measures and monitoring interact with organ system function and response to therapy. This collection of physiologic perspectives written by some of the most respected experts in the field represent an up-to-date and invaluable compendium of practical bedside knowledge essential to the effective delivery of acute care medicine. Although this text could be read from cover to cover, the reader is encouraged to use this text as a reference source, referring to individual physiologic notes and reviews that pertain to specific clinical issues. In that way the relevant information will have immediate practical meaning and hopefully become incorporated into routine practice.

We hope that the reader finds these papers and reviews useful in their practice and enjoys reading them as much as we enjoyed editing the original articles.

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Applied Physiology in Intensive Care Medicine 1
Physiological Notes - Technical Notes - Seminal Studies
in Intensive Care

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2012, XXII, 435 p., Hardcover

ISBN: 978-3-642-28269-0