

However, there is no commercially available system to apply this therapy in the United States, so the clinical relevance of this chapter will be obscure to most readers. The same can be said for the chapter on partial liquid ventilation. It is also hard to know what to do with the chapter on inhaled antibiotic therapy, given the paucity of the evidence in support of this therapy (as pointed out by the authors of that chapter).

I was taken aback by the chapter, "Interpreting Clinical Trials of Mechanical Ventilation: The Importance of Routine Care." To my reading, this chapter is more about a rant against the Acute Respiratory Distress Syndrome Network than about interpreting clinical trials. This chapter seems out of place in a book where the chapters are, for the most part, balanced. There seems to be an underlying bias throughout the book to discredit or minimize the importance of the Acute Respiratory Distress Syndrome Network studies. I do not think that the Acute Respiratory Distress Syndrome Network results are, by any means, the final word on mechanical ventilation of patients with acute lung injury and the acute respiratory distress syndrome, but I think they are the best evidence to date and should not be discarded or ignored while awaiting additional evidence.

Overall, this book contains a wealth of information about mechanical ventilation. I am pleased to have it in my library. There is no other single source where a reader can turn to find so much contemporary information about mechanical ventilation. I consider myself knowledgeable on the subject of mechanical ventilation, but I must admit that I learned a lot studying this book to prepare this review. This book, however, is not for the faint of heart. It is written at a very high level. Those with a working knowledge of mechanical ventilation will find the book more useful than the beginning student of the subject. Given its cost (\$189.95), I suspect this book will be out of reach for many to add to their personal libraries. For those with an interest in mechanical ventilation and who have a generous academic allowance, this book is a must-have. I think it should be an essential text in the libraries of hospitals, medical schools, pulmonary medicine departments, anesthesia departments, critical care units, respiratory care departments,

and respiratory care schools. This is a book that I'm sure I will refer to over and over for years to come.

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Conflict of Interest: Dean Hess is co-author of the textbook *Essentials of Mechanical Ventilation*, 2nd edition. Hess DR, Kacmarek RM. McGraw-Hill. 2002.

Clinical Critical Care Medicine. Richard K Albert MD, Arthur S Slutsky MD, V Marco Ranieri MD, Jukka Takala MD, Antoni Torres MD, editors. Philadelphia: Mosby/Elsevier. 2006. Hard cover, illustrated, 523 pages (with CD-ROM), \$105.

Clinical Critical Care Medicine is an excellent distillation of the clinical and scientific breadth of our global critical care community. One hundred and twelve authors from 14 countries combined their efforts to deliver an exceptional one-volume guide on care of the critically ill adult. The editors are from University of Colorado (Albert), University of Toronto (Slutsky), Università di Torino (Ranieri), University Hospital, Bern (Takala), and Universitat de Barcelona (Torres). The text has 10 sections and 64 chapters. Sections 1 and 2 review general aspects of critical care, and the other sections catalog specific organ and system problems and conclude with miscellaneous issues in critical care. All the chapters are well presented, with clear graphics and good visual design. Each chapter begins with a "key points" box that highlights the most important concepts and information. All the graphics are also on an included CD-ROM that is useful for presentations, teaching, and other purposes.

Starting with the basic science behind the specialty (including chapters on inflammation, genetics, stress response, vascular tone, cellular metabolism, and tissue hypoxia), each author provides a thorough review of the current understanding of these important but complex topics. These include strong clinical correlation, a pathophysiological rationale for therapies, and a discussion of relevant outcome-based research.

This is followed by an extensive and well-written section on the practice of critical care, including sedation and analgesia, an-

tibiotics and infection prevention, severity-of-illness scoring systems, hemodynamic monitoring, mechanical ventilation and its complications, nursing issues, nutritional support, and end-of-life care. The chapter on antibiotic therapy emphasizes pharmacology and promotes a pharmacokinetic/pharmacodynamic approach to antibiotic selection and dosing. The section on infection prevention focuses on nosocomial infections, including central line infections and ventilator-associated pneumonia. Despite a detailed description and approach to these issues, the current strategies developed in the United States, such as the "ventilator bundle," "sepsis bundle," and checklists from the Institute for Healthcare Improvement, are not mentioned. There is a comprehensive chapter dedicated to the development, validation, and utility of severity-of-illness measures. The next chapter focuses on hemodynamic monitoring, including the physiologic basis for hemodynamic monitoring, the techniques, equipment, and outcomes associated with various techniques, including the pulmonary artery catheter. The concept of pulse pressure and systolic blood pressure variation related to fluid responsiveness and its difference with preload is discussed in detail. However, this book does not provide a procedure manual, appendix, or chapter on the various hemodynamic monitoring modalities and central venous access techniques.

The next several chapters discuss mechanical ventilation, including ventilation modes, noninvasive ventilation, tracheostomy, monitoring mechanical ventilation, and patient/ventilator interactions. These chapters provide the physiological basis of monitoring mechanically ventilated patients, and they make it clear that mechanical ventilation can cause morbidity. Besides respiratory mechanics and gas exchange, the authors propose continuous monitoring of the "stress index" to ensure a lung-protective ventilation strategy, and they provide a nice flow diagram to troubleshoot increased peak pressure during constant-flow mechanical ventilation. An entire chapter is dedicated to weaning, and the chapter discusses protocols and controversies about various weaning methods.

It is important to recognize the mechanical ventilator as a nonphysiologic but necessary therapeutic tool in the intensive care unit (ICU) and that ventilator-induced lung injury and ventilator-associated pneumonia are common complications. The next chap-

ters focus on these topics and provide substantial detail. The concepts of volutrauma, barotrauma, atelectrauma, and biotrauma are reviewed, as are the pathogenesis, diagnosis, and treatment of ventilator-associated pneumonia. These chapters conclude the segment on mechanical ventilation.

A unique feature of this book is the chapter on the general approach to the unstable patient. This chapter, "Clinical Assessment of the Acutely Unstable Patient," is a great resource for trainees and inexperienced personnel who are not regularly involved with critical care. Nursing issues, nutrition, and end-of-life care also merited their own chapters, which conclude the section on general aspects of critical care.

From this point forward, the sections are organ/system-specific, and the chapters describe the most relevant conditions in critically ill patients. Section 3, which encompasses pulmonary problems, includes 5 easy-to-read and visually appealing chapters, which cover exacerbations of chronic obstructive pulmonary disease and asthma, acute respiratory distress syndrome, pulmonary embolism, obesity and perioperative respiratory management of these patients, and respiratory failure due to neuromuscular disease.

The next section discusses the heart and vasculature. These 5 chapters begin with a comprehensive but practical discussion on pathophysiology of cardiovascular failure, followed by state-of-the-art chapters on acute coronary syndromes; arrhythmias in the ICU; and hypertensive and miscellaneous cardiovascular emergencies, including cardiogenic shock and the use of the intraaortic balloon pump, left-ventricular free wall and septal rupture, myocarditis, endocarditis, cardiomyopathy, cardiac trauma, acute valvular heart disease, prosthetic valve complications, cardiac tamponade, and aortic dissection. This section concludes with an extensive and important description of heart-lung interactions and a review of the hemodynamic consequences of mechanical ventilation.

Section 5 is divided into 6 chapters, regarding neurologic problems in the ICU, beginning with a physiologic review of intracranial pressure and cerebral blood flow auto-regulation, and including colorful diagrams and pictures that explain the rationale and method for intracranial pressure monitoring. The rest of the section discusses the management of traumatic brain injury, subarachnoid hemorrhage, spinal cord

trauma, seizures, brain death, and organ donors. These chapters provide a solid guide for neurologic critical care. However, an appropriate discussion of acute management of stroke in the ICU is absent.

The next section includes 6 chapters on renal and metabolic problems. The first chapters in this section are on acid/base and electrolyte disorders. Described with appropriate detail and visual aids are the traditional approach and Stewart's approach to acid/base disturbances, and there is a comprehensive discussion on electrolyte abnormalities. The prognostic importance of acute renal failure in the critically ill is well recognized, and the tribute to this condition is exemplified in a state-of-the-art chapter that includes the Risk, Injury, Failure, Loss, and End-stage (RIFLE) kidney classification criteria and a practical discussion of renal replacement therapy in the ICU. Hepatorenal syndrome earned an entire chapter in this section, followed by 2 chapters on endocrine emergencies, which describe thyrotoxicosis, critical hypothyroidism, pheochromocytoma, acute adrenal crisis, hypoglycemia, diabetic ketoacidosis, and hyperosmolar nonketotic coma. This section has visual aids and diagrams that will help readers retain the information.

Section 7 includes 3 chapters on major gastrointestinal emergencies: gastrointestinal bleeding, pancreatitis, and acute liver failure. These topics are reviewed with a practical approach and there are very good flow diagrams and photographs. The chapter on acute liver failure provides a good overview of varied clinical presentation and prognosis, but falls short in discussing perioperative care following liver transplantation.

The next section focuses on hematologic problems, including coagulation and blood product replacement. The overview of coagulation is divided into 2 chapters that emphasize the close interaction with the inflammatory response. The discussion on blood product replacement has several limitations; namely, there is a lack of information about transfusion-related lung injury and transfusion-related circulatory overload, and the uses and indications for factor VIIa. Furthermore, there is no chapter or discussion regarding the care of patients with hematological malignancies and oncologic emergencies in the ICU (eg, tumor lysis syndrome, superior vena cava syndrome, and peri-engraftment syndrome).

The section on infectious diseases includes 3 crucial chapters about community-acquired pneumonia, pneumonia in the immunocompromised host, and sepsis, all of which are easy to read and provide the pertinent and latest evidence.

Finally, the section on miscellaneous problems in the ICU includes "trauma," which is not generally within the overall scope of this book. However, a discussion of the abdominal compartment syndrome, including recognition and management during a damage-control approach to abdominal trauma, would have been helpful. This extrapolates to medical ICU patients who require massive fluid resuscitation. The 2 chapters on environmental emergencies describe burns, inhalation injury, electrical injury, hypothermia, and hyperthermia.

An excellent review of critical care in pregnancy is offered in Chapter 59, which includes an appropriately comprehensive discussion on maternal physiology and conditions specific and not specific to pregnancy, including obstetrical trauma. Postoperative critical care is discussed in 2 chapters, which divide cardiac surgery and major surgery and describe the unique aspects of surgical critical care. This is supplemented with interesting diagrams and flow tables. The toxicology chapters cover alcohol, drug ingestions, and carbon monoxide poisoning, aided by pictures and a very useful antidote table.

No current textbook on critical care is complete without a section on bioterrorism. The final chapter of this book consists of a 10-page discussion about bioterrorism and preparedness.

Broadly, this book is nicely written, easy to read, and has excellent visual aids, including photographs, flow diagrams, and colorful tables. There is a low incidence of typographical errors, and the "key points" boxes usefully summarize important points. The authors state in the preface that "the book is directed to house officers, critical care trainees, critical care practitioners, hospitalists, pulmonologists, anesthesiologists, general internists, and family physicians whose practice encompasses critically ill patients," and we agree. The reader should have a critical care background or interest, and for the most part, it is directed towards physicians.

In summary, **Clinical Critical Care Medicine** is a great ICU or office information resource for any physician with interest

in critical care. It will serve its readers well as a reference textbook that includes state-of-the-art chapters and offers an international perspective on intensive care medicine.

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Tuberculosis & Nontuberculous Mycobacterial Infections, 5th edition. David Schlossberg MD. New York: McGraw Hill. 2006. Hard cover, illustrated, 523 pages, \$105.

In September 2006 there was news about a cluster of extensively drug-resistant tuberculosis (TB) in southern Africa, which had extremely high mortality (52 of 53 patients died). Tuberculosis remains one of the leading causes of death worldwide; approximately 2 million people die of TB yearly and one third of the world's population is infected with *Mycobacterium tuberculosis*. The current epidemiology makes TB one of the most important pathogens in the world.

Tuberculosis & Nontuberculous Mycobacterial Infections, 5th edition, is a comprehensive, multi-author textbook of TB and nontuberculous mycobacteria. Many of the contributors are internationally distinguished TB experts. The book has a hard cover, 523 pages, 39 chapters, and 3 sections. This new edition includes new chapters on bacillus of Calmette and Guérin, new TB vaccines, and paradoxical reactions and the immune reconstitution inflammatory syndrome. The book is most suitable for pulmonologists, infectious disease specialists, and public health practitioners involved in the field of mycobacterial diseases. There are complete and current reference lists at the ends of the chapters. Most chapters contain many tables and figures that highlight important points in the text. The index is comprehensive and accurate.

Part I, "General Considerations," includes TB epidemiology, pathophysiology, laboratory diagnosis, latent TB infection, and TB treatment. The chapter on TB epidemiology discusses the intriguing issue of "epidemic waves" of TB and gives a historical perspective on how TB has affected the world. The chapter on TB pathophysiology

is a concise yet comprehensive review, with many citations for new basic scientific findings. The chapter on latent TB infection includes a discussion of the QuantiFERON test, a relatively new whole-blood interferon gamma-release assay to diagnose latent TB infection. The chapter on multiple-drug-resistant TB contains the up-to-date approach for the treatment and management of the most important and lethal strains of TB. The chapter on bacillus of Calmette and Guérin and new TB vaccines includes the horizon of new candidate vaccines. The chapters on TB in "enclosed populations" and "role of the health department" will be useful to readers in the public health sector, to optimize local TB control.

Part II, "Clinical Syndromes," consists of 20 chapters, which cover the clinical presentation of TB, including pulmonary and extrapulmonary TB, pediatric TB, TB and human immunodeficiency virus, and diagnosis and management of specific TB sites (eg, ocular TB, genitourinary TB, and gastrointestinal TB). The chapter on endocrine and metabolic aspects of TB describes the interaction between the endocrine system and active TB. The chapter on hematologic changes in TB reviews the known hematologic effects of TB and its therapy.

Part III, "Nontuberculous Mycobacterial Syndromes," consists of 7 chapters on clinical manifestation and treatment of disease caused by nontuberculous mycobacteria. These chapters deal with mycobacterial disease commonly seen in clinical settings (*M. avium*, *M. kansasii*, *M. marinum*, *M. scrofulaceum*, and rapidly growing mycobacteria).

The editor states in the preface, "the goal of this book is to provide clinicians with a comprehensive yet practical resource for understanding, diagnosing, and treating TB." I believe he achieved his goal and provided a practical and informative resource for health care professionals who manage TB patients, at-risk populations, and patients with nontuberculous mycobacteria disease.

Unfortunately, the reproduction of some of the radiographic images was suboptimal. In addition, there are some illustrations in which color would have been beneficial (eg, World Health Organization statistics and graphs, and clinical physical images, including endoscopy images), but I understand the cost issue.

In summary, **Tuberculosis & Nontuberculous Mycobacterial Infections** is a valu-

able reference textbook for clinicians who encounter TB patients in their practice, and will also be a useful reference for public health practitioners in the field.

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Reichman and Hershfield's Tuberculosis: A Comprehensive International Approach, 3rd edition. Mario C Raviglione, editor. *Lung Biology in Health and Disease* series, volume 219, Claude Lenfant, executive editor. Boca Raton: Informa Healthcare. 2006. Hard cover 2-volume set, illustrated, 1,246 pages, \$229.95.

The resurgence of tuberculosis (TB) in the United States and other developed nations over the last 2 decades, and recognition of the magnitude of the global TB epidemic have resulted in unprecedented levels of interest, investigation, and program development in this field. Major advances have occurred in our understanding of TB epidemiology, microbiology, genetics, pathogenesis, and host-pathogen interactions. We have new TB diagnostic tests, new therapies, better approaches to the management of drug resistance, and better understanding of TB co-infection with human immunodeficiency virus. New TB-control approaches have globally uniform principles yet can be tailored to the resources and priorities in different countries and regions. These programs rely on collaborative international interactions between governmental agencies, nongovernmental organizations, novel pharmaceutical industry programs, and local health care providers and volunteers.

Through these exciting times, Reichman and Hershfield's **Tuberculosis: A Comprehensive International Approach** has served as a reliable and authoritative guide to the key global developments in TB, and is written by an international "who's who" of TB experts. This text is part of the National Institutes of Health's *Lung Biology in Health and Disease* series, edited by Lenfant. The first and second editions were published 10 years apart, in 1990 and 2000.

