

Evidence-Based Management of Patients with Respiratory Failure.

Andrés Esteban MD PhD, Antonio Anzueto MD, Deborah J Cook MD, editors. (Update in Intensive Care and Emergency Medicine series, volume 41, Jean-Louis Vincent MD PhD, series editor) Berlin: Springer-Verlag. 2004. Hard cover, illustrated, 171 pages, \$129.

Delivery of critical care requires both the insight-driven application of accumulated experience—"the art of medicine"—and the meticulous application of those few hard-won nuggets of data that have passed the test of scientific rigor. It is in service of the latter that **Evidence-Based Management of Patients with Respiratory Failure** is offered as an installment in the *Update in Intensive Care and Emergency Medicine* series.

This slim volume is composed of 17 chapters that cover topics both specific to the respiratory intensive care unit and of more general interest to those delivering intensive care. The respiratory intensive care chapters include those on the epidemiology of acute respiratory failure and the utility of monitoring pulmonary mechanics. The more general-interest chapters include venous thromboembolism prophylaxis and the efficacy of hand-washing for prevention of nosocomial infection. Several "bread-and-butter" respiratory critical-care topics with important evidence bases are here as well, including ventilator-weaning, lung-protective ventilation for acute respiratory distress syndrome, exacerbations of chronic obstructive pulmonary disease, ventilator-associated pneumonia, and noninvasive ventilation. The editors, who are respected researchers in evidence-based critical care, recruited contributors primarily from Europe, South America, and Canada. Drs Esteban, Anzueto, and Cook state in the introductory chapter that the intent of the book is to "critically review and discuss the clinical evidence available for the diagnosis and management of patients with respiratory failure." They do not explicitly target physicians, nurses, respiratory therapists, or technicians, although this is a text written by physicians and seems to address concerns usually within the primary purview of the doctor rather than the nurse or therapist. The editors state their intent to adhere to the usual structure of evidence-based medicine publications in describing more fully the literature-search strategies used by their contributors, the form that the reviews were

intended to take, and the methodologic grading system employed by the authors.

Strengths include an appropriate emphasis on studies examining patient-centered outcomes, the thoroughness of those chapters covering the better-studied areas, and the admirable and entirely justified brevity of chapters dealing with certain practices, both diagnostic and therapeutic, with virtually unstudied patient-centered outcomes. Additionally, the editors attempt to specifically discuss this issue of choice of end points.

Certain chapters adhere more closely than others to the usual structure of evidence-based-medicine publications. Those on the differences in use of various ventilator modes, chronic obstructive pulmonary disease exacerbation, ventilator-associated pneumonia, tracheostomy, sedation, and current trials all describe the search strategy implemented. Each of these chapters, as well as those on weaning and on noninvasive ventilation, include some type of formalized grading of the quality of evidence presented. Most chapters include a chart comparing the important studies in the field of interest—a valuable bibliographic resource for a newcomer to the topic.

The best chapters in the collection are well conceived and well organized. The chapters on chronic obstructive pulmonary disease exacerbation, weaning, noninvasive ventilation, and tracheostomy are complete, concise, and readable enough to serve as "one-stop-shopping" for readers of any discipline who wish an update on the current evidence in the field. I was excited at the inclusion of a chapter explicitly addressing the important topic of the effects of choice of outcome in clinical studies of acute respiratory distress syndrome/acute lung injury. This issue of physiologic versus patient-centered outcome is an important one to critical-care evidence-based medicine as a whole, and is wisely included in this collection.

On the negative side, the authors' execution of the editors' intent varies widely. A few sections, such as that on the general approach to respiratory failure, contain awkward phrasing that could have been readily addressed by the editorial staff. The space and effort allotted to critique of the evidence base and to placing studies into the context of daily practice varied widely among chapters.

For example, the section on tracheostomy extensively discusses the primary literature

in the field, but ultimately acknowledges the lack of definitive clinical data while still attempting to make reasonable and evidence-driven recommendations. In counterpoint is the fascinating but out-of-place chapter on new advances in diagnosis and treatment of respiratory failure. The authors explicate well the science at the frontier of the field, including neurally adjusted ventilatory assist, ventilogenomics, and the molecular biology of immunomodulation in acute lung injury, but the section has little to do with "evidence-based management of patients with respiratory failure."

Important weaknesses ultimately diluting the effectiveness of the evidence-based-medicine message include the heterogeneous application of the rigorous review standards proposed by the editors and the clear enthusiasm of some authors for certain publications at the expense of others within the field.

For example, the authors of the chapter on ventilator-associated pneumonia offer an interpretation of an important, large, well-structured, and well-executed randomized clinical trial (that of Fagon et al) and conclude that the results are "useless." They proceed to omit the study from the list of those useful in generating summary conclusions. While critical evaluation of the protocol of a clinical trial is acceptable, summary dismissal of the trial as fatally flawed should be done only with reluctance. When such a study is ruled inadmissible for consideration, but two of the author's own publications (which happen to have drawn the opposite conclusion) are included, a reviewer wonders whether a refresher in the rules of evidence-based medicine would be useful. At the very least, a novice to the field will be left unawares, with a skewed notion of what evidence exists and of the consensus as to its quality.

The inclusion of a moderate number of studies examining physiologic surrogate end points, such as those discussed in the section on monitoring of respiratory mechanics, may confuse the reader who is unaware of the usual hierarchal primacy of clinical outcomes of death and disability typically applied in critical-care evidence-based medicine.

In this same vein, the editors chose to include chapters on subjects either poorly addressed in the current evidence base, such as utility of physiologic monitoring, and on others only tangentially related to respiratory failure (a chapter on infection control

largely focuses on hand-washing). In addition to the concerns about surrogate end points raised above, one worries that these additions may distract the reader interested in the detailed understanding of what evidence does exist regarding the stated topic of the book. On the other hand, this does serve to illustrate the important point that much of what is done in the intensive care unit on a daily basis is living the life unexamined.

Structurally, the book is clearly printed and easily read. A rapid search through multiple chapters would be facilitated by standardizing both the placement of charts of references and the structure of each chapter into sections on search strategy, methodology grading, study critique, and summary recommendations. Illustrations are few and the index brief.

However, a more serious critique is whether, given current information technology, the hardback book is the appropriate repository for information in a rapidly changing field. The most recent references discussed in this text (published in 2004) are dated 2002. By definition, a book like this will be out of date as soon as any new high-quality studies are published, and for \$129 I have serious reservations as to the wisdom of the investment for either individuals or libraries. Thus, although certain sections of this text are exemplary and clearly live up to the editors' ambitions, their publication in hardback form is more important as an opportunity to contemplate the ongoing challenge of disseminating new data and placing the data in clinical context.

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Interventional Pulmonary Medicine. John F Beamis Jr MD, Praveen N Mathur MBBS, Atul C Mehta MBBS. (Lung Biology in Health and Disease series, volume 189, Claude Lenfant, executive editor) New York: Marcel Dekker. 2004. Hard cover, illustrated, 689 pages, \$195.

This book is an outstanding resource for physicians, respiratory therapists, bronchoscopy technicians, nurses—anyone who is interested in learning more about interventional pulmonary medicine! The topics range from the usual rigid bronchoscopy and flexible bronchoscopy chapters to less-addressed topics such as whole-lung lavage, medical thoracoscopy, and gene transfer. The book is easy to read, with chapters about many topics in interventional pulmonary medicine. Each chapter deals with a different mode of intervention. Some subjects got more than one chapter (eg, photodynamic therapy and medical thoracoscopy), and in those cases, each of the chapters contributes to a broader knowledge of the subject. Until now I have used several texts as references for the variety of interventional pulmonary techniques and therapies; however, this is an excellent start for a one-stop reference. The excellent index also makes it an easy reference text. Another positive attribute of this book is the outstanding international authorship. The “giants” have contributed to this book.

If one has an interest in reading the primary literature, each chapter is well referenced, so original sources can easily be determined and sought. Most of the literature in interventional pulmonary medicine has been case reports and case series of procedures done with patients who have a particular condition, such as tracheal or main-bronchus narrowing due to tumor. When possible, the chapters review the evidence base, and this aspect of the book is commendable. Examples include the chapters

on laser bronchoscopy for malignant disease, silicone airway stents, and photodynamic therapy for early lung cancer.

My criticisms of the text are few. I found very few typographical errors. Few of the photographs are of mediocre quality, though that is sometimes hard to avoid if the choice of photographs is limited (eg, Fig. 2, on page 243).

I think this text will be valuable to many types of providers, as it discusses both the basics and the more complex issues within interventional pulmonary medicine, thus helping both practitioners and their assistants to prepare for and provide these procedures. Most chapters discuss the indications, contraindications, equipment, preparation, and technique. The discussions elaborate on procedures to improve safety, and they address many of the complications, both early and late, that one might encounter. I particularly appreciated the detail with which whole-lung lavage is described. It is an example of a procedure that might be necessary if one is not able to transfer a patient to a tertiary-care hospital. The extended discussion of the physiology of whole-lung lavage, during and after, is outstanding.

The breadth of the topics reviewed is extensive. Chapters discuss topics from rigid bronchoscopy, which many pulmonary books address, to gene transfer and quality of life after interventional pulmonary procedures. The price of this book is typical for this class of books. It is a good value for the quality with which topics are discussed and referenced. I appreciated the effort to touch succinctly and thoughtfully on a variety of subjects. Without any reservation, I recommend this text to readers interested in interventional pulmonary medicine.

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