

Books, Software, & Other Media

Noninvasive Ventilation Made Simple.

William JM Kinnear MD. Nottingham University Press: Nottingham, United Kingdom. 2007. Soft cover, illustrated, 144 pages, \$30.

This book discusses the clinical indications for and applications of noninvasive ventilation (NIV). Its 28 brief chapters span 139 text pages. According to the publisher the book is intended for “busy ward staff to ‘dip into’ to improve their skills and understanding”—a reference book for United Kingdom nurses unfamiliar with mechanical ventilation in general and NIV in specific.

In the opening chapter the author contrasts invasive ventilation and NIV and emphasizes that NIV can be used in patients with acute or chronic respiratory failure. Throughout, he uses the term BiPAP (bi-level positive airway pressure) to describe a ventilation method suitable for spontaneously breathing patients who need pressure support, and the term NIV to describe a ventilation method for patients who cannot breathe on their own. Although the author uses these terms consistently, BiPAP and NIV may mean different things to an American audience.

The discussion on masks emphasizes the need to balance patient comfort with leak-reduction, and adds that oronasal (and full-face) masks are more effective for patients in acute respiratory failure, whereas nasal masks work better with patients in the non-acute setting.

The chapter about ventilator circuits gives step-by-step directions for setting up BiPAP and NPPV circuits and placing the circuits on patients with acute and chronic conditions, respectively. The author describes titrating oxygen into the NIV circuit, which led me to think that the bi-level ventilators he refers to do not have air-oxygen blenders; in the United States many bi-level ventilators have oxygen blenders. The chapter on ventilator triggering focuses on the triggering and cycling difficulties that leaks create, and contrasts flow triggering, pressure triggering, time cycling, and flow cycling.

The book effectively describes the role of inspiratory pressure in treating ventilation deficiencies, and expiratory pressure in treating oxygenation problems. The chapter about inspiratory pressure describes rise-time, and the chapter about expiratory pres-

sure emphasizes that applied expiratory pressure can counterbalance intrinsic positive end-expiratory pressure, but that high end-expiratory pressure can reduce cardiac output. The author also discusses the need to set a back-up rate when initiating NIV. The chapter on monitoring emphasizes that clinicians should look for improved patient comfort and decreased work of breathing after initiating NIV.

Chapter 11 discusses when to intubate and when to use NIV. Intubation is preferable in respiratory arrest, upper-airway trauma, inability to clear secretions, inability to protect the airway, and unconsciousness, but NIV can be used to ventilate unconscious patients for whom intubation is not an option.

Interspersed throughout the book are chapters on NIV to treat specific diseases and disorders, including an introduction to respiratory failure, chronic obstructive pulmonary disease, left-ventricular heart failure, obesity hypoventilation, hypoxic respiratory failure, clinical complications of NIV, neuromuscular disorders, and chest wall problems.

In his discussion of respiratory failure the author succinctly describes hypoxic and hypercarbic respiratory failure—concepts familiar to an American audience, but in terms that may be unfamiliar. He emphasizes that there is strong evidence for NIV in exacerbation of chronic obstructive pulmonary disease and congestive heart failure, and that NIV also can be used with patients with pneumonia, asthma, or acute respiratory distress syndrome, although the evidence for its effectiveness in those conditions is not high-level. Later chapters discuss NIV for obese patients with sleep apnea, and patients with neuromuscular diseases, chest deformities, or bronchiectasis.

The author also emphasizes that patients in acute respiratory failure who do not improve after one hour of NIV should be intubated without delay, and that heated humidification is a useful adjunct to NIV. The discussion of inspiratory/expiratory ratio reminds us to allow enough expiratory time in patients with severe chronic obstructive pulmonary disease.

The chapter on alarms advises to set alarms to indicate if the patient is discon-

nected from the ventilator, and to keep the alarm-setting process simple. The chapter on NIV complications discusses the need to avoid both simple complications such as nasal-bridge sores and eye irritation, and more serious complications such as gastric distention and pneumothorax. The author also contrasts volume-targeted and pressure-targeted ventilation.

The chapter on weaning from invasive ventilation to NIV and weaning from NIV to supplemental oxygen includes sections on weaning from an endotracheal tube and from a tracheostomy tube to NIV.

The chapters include learning points, key words, terminology, and chapter summaries. The writing style and the 2-color text design are readable and accessible. The book also has some 2-color line drawings, including pressure-volume, pressure-time, and flow-time graphs; basic layouts of ventilators, circuits, and masks; and depictions of physiology at the alveolar level.

I noted an error in the table of contents. Starting with Chapter 18 and through the end of the contents, the page numbers in the table of contents were off by 2.

This book uses British spellings (“metre” instead of “meter”), units (eg, kPa), and terms (eg, HDU for high-dependency unit, and AMU for acute medicine unit) that American readers might find unfamiliar. The text has a key-words section, an index, and a brief bibliography, but no references.

Noninvasive Ventilation Made Simple succinctly describes the rationale for NIV and its safe and effective implementation in clear and concise language. However, it is written for a United Kingdom nursing audience that is inexperienced in mechanical ventilation. George Bernard Shaw stated that “England and America are 2 countries divided by a common language.” Because it uses key terms that are new or unfamiliar, this book may not “translate” well to an American audience.

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