Editor’s Commentary

The Clinical Pulmonary Infection Score (CPIS) has been suggested as a simple approach to diagnose VAP. In a meta-analysis, Shan et al found that the diagnostic performance of the CPIS for VAP is moderate. However, because the CPIS is simple and easy to perform, it may still be useful in diagnosing VAP. As Kolobow points out in his editorial, although the diagnosis of VAP can be confusing and problematic, relatively simple protocols can be developed to accomplish the goals of early recognition and prompt treatment.

Continuing with the theme of VAP is the paper by Kolobow and colleagues. High-volume-low-pressure endotracheal tube cuffs form folds along its contact with the trachea, allowing mucus leakage into the lungs, which is a potential source of VAP. The authors report evaluation of a thin-walled endotracheal tube cuff made of Lycra polyurethane. This cuff provided complete tracheal sealing in an in vitro model. As Fisher points out in his editorial, not only do we need to know whether or not this design will reduce microaspiration in vivo, but we will also need to know if it is cost effective before widespread adoption.

Scala and colleagues conducted a national survey to analyze the changes in the number, structures, staff, procedures, diagnoses, and outcomes of respiratory high-dependence care units in Italy. Between 1997 and 2007, there was an increase in the number and expertise of these units, with a shift toward less expensive care, and greater complexity of interventions and patient dysfunctions. As Ferrer points out in his editorial, the results of this study reflect the high level of expertise and skills of Italian physicians in managing patients on noninvasive ventilation. In North America and elsewhere around the world, there will likely also be a greater need for these units.

The CoughAssist is a mechanical inspirator-exsufflator to assist airway secretion clearance in patients with ineffective cough. It is most commonly used by mask in patients who do not have an artificial airway. Guérin et al conducted a bench study to evaluate its performance in the presence of an endotracheal tube or tracheostomy tube. The artificial airway significantly reduces peak expiratory flow with the CoughAssist, but it might still be effective. I agree with Toussaint that the use of inspirator-exsufflator will increase in coming years in patients with artificial airways.

The predicted diffusing capacity of the lung for carbon monoxide can be adjusted to reflect abnormal hemoglobin or carboxyhemoglobin levels. Ruppel et al evaluated whether a new pulse oximeter, the Masimo RAD-57, can accurately measure hemoglobin and carboxyhemoglobin noninvasively. They found that pulse oximetry may be of limited usefulness for adjusting either predicted or measured diffusing capacity values, but might be useful to screen patients for invasive testing.

Walsh and colleagues surveyed neonatal/pediatric respiratory care educators and managers to gain insight into the adequacy of preparing RTs to enter the neonatal/pediatric environment, the length of orientation necessary to achieve a base level of competency, and the methods used to train new practitioners. They found that a dedicated respiratory therapy educator is valued, simulation is considered an effective tool for training, and the neonatal/pediatric certification exam is recognized as a valid method of verifying competence.

The CO2 response and duration of weaning from mechanical ventilation were evaluated by Raurich et al. Both hypercapnic drive response and hypercapnic ventilatory response were independent variables associated with the duration of weaning. The authors suggest that bedside measurement of CO2 response might identify patients who need prolonged weaning and might benefit from tracheostomy. Given the complexity of this test, further study is needed before it can be recommended as standard therapy.

Holland et al determined the feasibility of the 3-minute step test in adults with cystic fibrosis and whether test performance is associated with 12-month clinical outcomes. They found that desaturation during the 3-minute step test is associated with long-term pulmonary deterioration and more hospital days in adults with cystic fibrosis. This test may be a useful screening test for patients with moderate to severe cystic fibrosis who require increased intervention and monitoring.

Horie and colleagues conducted a cross-sectional study of elderly COPD patients and healthy subjects to identify factors that delay COPD detection. Walking endurance, quality of life, and proximal muscle strength in the extremities of patients with COPD were well preserved. This prevented COPD detection and hampered motivation to seek medical care. The authors recommend spirometry for COPD detection.

Parke and colleagues determined the relationship between flow and pressure with a nasal high-flow oxygen therapy system. Not surprisingly, they found that the mean nasopharyngeal pressure during nasal high-flow oxygen increases as flow increases. However, the absolute pressures were relatively low and usually < 5 cm H2O even at a flow of 50 L/min.

To investigate the effects of simvastatin on oxidative stress and lung histopathology, Altintas et al evaluated its use in 2 murine models of ALI. They found that pretreatment with simvastatin decreased the severity of ALI in oleic acid and endotoxin ALI models by decreasing inflammation and oxidative stress.

Dynamic hyperinflation, caused by expiratory flow limitation, markedly increases resting functional residual capacity in many COPD patients. Lopes et al evaluated the impact and duration of CPAP on hyperinflation and airway resistance in patients with stable COPD. They found that CPAP reduces lung volumes and airway resistance for 15 min, but that lung volumes return to baseline by 30 min.

We are pleased to publish the 37th Donald F Egan Scientific Memorial Lecture, “The Mechanical Ventilator: Past, Present, and Future” by Kacmarek. We are also pleased to publish the 26th Philip Kittredge Memorial Lecture, “COPD Heterogeneity: What This Will Mean in Practice” by Rennard.

This month’s case reports are on the subjects of iatrogenic reactive airways dysfunction syndrome, aspiration via congenital broncho-esophageal fistula after lobectomy, and extracorporeal membrane oxygenation in a patient with tracheal dehiscence following slide tracheoplasty. This month’s teaching cases are of recurrent pneumonia due to congenital broncho-esophageal fistula and of a puzzling bronchial trifurcation.