Editor’s Commentary

Adjunctive aerosolized antibiotics have been recommended in the setting of Gram-negative ventilator-associated pneumonia (VAP), but little is known about their influence on clinical outcomes. Arnold et al found that patients with *Pseudomonas aeruginosa* and *Acinetobacter baumannii* VAP may experience favorable survival when treated with adjunctive aerosolized antibiotics. As Moore and Mueller indicate in their editorial, with the increasing prevalence of multiple-drug-resistant organisms and a dearth of new antibiotics in development, prospective comparative effectiveness studies are needed to establish the utility of alternative administration methods such as aerosolization of colistin and aminoglycosides.

Berlinski and Willis conducted a survey of aerosol delivery techniques to spontaneously breathing tracheostomized children. This study is important because, although aerosol delivery can be affected by several factors, no recommendations for device/drug formulation choice are available. The authors found a wide variation in practice of delivering aerosols to spontaneously breathing tracheostomized children. In their editorial, Amirav and Newhouse recommend that pediatricians, respiratory therapists, aerosol scientists, otolaryngologists, and pulmonologists convene a focus group to establish evidence-based guidelines for aerosol therapy in this patient population.

Arunthari et al conducted a prospective, comparative trial of standard nebulizers and breath-actuated nebulizers. They found that patients and respiratory therapists stated greater satisfaction with the breath-actuated nebulizer. Moreover, the breath-actuated nebulizer was associated with a lower occurrence of adverse events. In their editorial, Ari and Fink provide some interesting insights into the dose delivery for standard nebulizers and breath-actuated nebulizers.

Kim et al explored the overlap between asthma and COPD. They found an intermediate type, lying between asthma and COPD, in clinical characteristics. As Tashkin points out in his editorial, since both asthma and COPD have overlapping clinical features, it is not surprising that some patients will be diagnosed with an intermediate type. The Importance of distinguishing between asthma and COPD, and identifying an intermediate type, is that treatment approaches and prognosis may differ.

Lellouche and L’Her evaluated an automated oxygen flow titration device designed to maintain constant oxygenation. They evaluated the device in healthy subjects during induced hypoxemia. They found that this system was more efficient at maintaining the oxygenation target and used less oxygen, as compared to traditional constant-flow oxygen.

One of the difficulties in comparing the numerous studies on manual chest physiotherapy is the wide variety of techniques used and terms employed to describe the intervention. Cross and Elander conducted consensus development meetings to identify the essential elements of manual chest physiotherapy and to provide a set of clear parameters within which treatment would be based and recorded. They found that the treatment protocol that resulted offered sufficient flexibility to the therapist while being robust enough to maintain clinical trial integrity.

Nimako et al explored the seasonal variability and meteorological factors on the incidence of pulmonary embolism. They found an association between seasonal variations in episodes of idiopathic pulmonary embolism and decreased atmospheric pressure and increased temperature. The clinical relevance of these findings is yet to be determined.

Some clinicians test the accuracy of office spirometers by comparing measurements made by 2 spirometers connected in series. Lefebvre et al conducted a technical assessment of this practice. They found that the practice of connecting spirometers in series gives variable results and thus individual tests are necessary.

Because many children with cystic fibrosis adhere poorly to airway clearance techniques, Bingham et al developed gaming technology that encourages forced expiratory maneuvers. They found that spirometer games elicited forced expiratory breath maneuvers in pediatric patients with cystic fibrosis. Whether or not this results in improved outcome deserves further study.

de Souza et al compared maximal inspiratory pressure, tracheal airway occlusion pressure, and its ratio in the prediction of weaning outcomes by use of a digital pressure gauge and a unidirectional valve. Consistent with prior reports of weaning parameters, they found that every index they studied had only a modest performance regarding prediction of weaning outcome. Also consistent with prior research, they found that use of a unidirectional valve performed better than the conventional technique.

Although decreasing electrostatic charge on valved holding chambers increases the amount of drug delivered, there are no data demonstrating that this increases bronchodilatation. Prabhakaran et al found that delivery of albuterol through an anti-static chamber provided a clinically relevant improvement in bronchodilator response during acute, reversible bronchospasm. These are important findings related to the delivery of inhaled bronchodilator.

Volsko et al compared the effect of targeting scheme on tidal volume delivery during volume-controlled ventilation. Specifically, they compared volume-controlled ventilation with set-point and dual targeting to pressure support ventilation, with simulated active and passive breathing. They found that dual targeting during volume-controlled ventilation allows increased tidal volume, compared to set-point targeting, but not as much as with pressure support ventilation.

This month we publish the 38th Donald F Egan Scientific Memorial Lecture by Schrager and colleagues, “Lessons From the Tip of the Spear: Medical Advancements From Iraq and Afghanistan,” and the 27th Philip Kittredge Memorial Lecture by Rubin and Haynes, “Myths, Misunderstandings, and Dogma in Respiratory Care.” Our case reports concern tidal volume variability during airway pressure release ventilation, inadvertent triggering of the ventilator caused by surgically placed pacer wires, and severe acute respiratory failure secondary to acute fibrinous and organizing pneumonia. Our teaching cases discuss acute management of the obstructed endotracheal tube and an unusual case of pulmonary embolism.