

Our Editor's Choice paper this month, by Bojmehrani and colleagues, compares usual and alternative methods to measure height in mechanically ventilated patients. Before surgery, actual height was measured while subjects were standing upright, and also estimated with alternative methods based on lower leg and forearm measurements. After surgery, height was visually estimated by a clinician and then measured while the patient was supine. They found significant variability between the different methods of measuring height in bedridden patients on mechanical ventilation. As Perren and Merlani cleverly state in their editorial, it can be difficult to measure the measurable.

Chetta et al evaluated ventilatory response to CO₂ in patients with chronic heart failure and in patients with COPD. They found that the ventilatory response to \dot{V}_{CO_2} during exercise was significantly different between subjects with CHF and COPD in terms of \dot{V}_E - \dot{V}_{CO_2} slope in those with moderate to severe reduction in exercise capacity, and with \dot{V}_E - \dot{V}_{CO_2} intercept, regardless of the exercise capacity. As Poon points out in his editorial, patients with CHF, COPD, and other diseases may actually be much smarter in optimizing their breathing for self-survival than has been traditionally appreciated clinically.

The purpose of the study by Boniatti and colleagues was to analyze the predictive performance of the modified integrative weaning index (IWI) in the extubation process. The 3 modified IWI values (the first and 30th minute of the spontaneous breathing trial, and the difference), as well as the other ventilatory parameters and extubation predictors, displayed poor extubation outcome discrimination accuracy. They concluded that the modified IWI, similar to other extubation predictors, does not accurately predict extubation failure.

The aim of the study by Fauroux and colleagues was to evaluate the effects of ventilator mode, breathing frequency, PEEP, and leak on the battery life of 5 commercially available portable ventilators. They found that battery life of home ventilators was not affected by the ventilator mode or the addition of PEEP. Battery life decreases with increases in respiratory frequency and during leaks with pressure support, whereas leak increased battery duration during volume-control ventilation.

Berlinski et al evaluated the performance of compressor/nebulizer units over a 24-week period under conditions similar to those of patients with cystic fibrosis. Four new units from 3 manufactures were tested. They found that long-term use of compressor/nebulizer system affected their performance. They suggest that measurement of maximum flow output with and without the nebulizer attached might help to identify compressors that are likely to fail.

Ju et al assessed twitch mouth pressures and disease severity in subjects with COPD. As compared to controls, twitch mouth pressure was about 25% lower with COPD. Twitch mouth pressures were decreased with increasing severity of the disease. Twitch mouth pressure might be an important factor reflecting the overall severity of COPD.

Vibration response imaging (VRI) is a novel imaging technique, and little is known about its diagnostic value in idiopathic pulmonary fibrosis (IPF). Guan and colleagues assessed VRI in this patient population. They report that VRI might be helpful to discriminate patients with IPF from healthy individuals. Abundant crackles might serve as a diagnostic tool of IPF.

The objective of the study by Liapikou was to characterize the incidence, microbiology, and outcomes for hospitalized

subjects with community-acquired pneumonia (CAP) and nursing home acquired pneumonia (NHAP). This was a secondary analysis of 5,160 subjects from the Community-Acquired Pneumonia Organization database. They found that only a very small proportion of hospitalized subjects with CAP present with NHAP, whose poor outcomes may be primarily due to a higher number of comorbidities compared to subjects without NHAP.

In collaboration with the German Sarcoidosis Society, Fleischer and colleagues examined fatigue in subjects with sarcoidosis. They found that multiple clinical factors, especially comorbidities, contribute to the high degrees of fatigue in sarcoidosis.

Sleeping metabolic rate (SMR) is used as a proxy for basal metabolic rate in infants when awake measurement is not practical. Summer et al measured SMR in healthy neonates and those with single ventricle congenital heart disease, to determine whether a smaller, non-standard hood measures SMR in neonates similarly compared to a standard large hood. They found that SMR measured with a small hood yields results similar to those measured with a standard large hood without affecting testing time or other aspects of the procedure.

The aim of the study by Lima and colleagues was to assess how volume-oriented incentive spirometry (IS) applied to subjects after stroke modifies total and compartmental chest wall volume variations, including right and left hemithorax. They found that IS promotes an increased expansion in all compartments of the chest wall and reduces the asymmetric expansion between right and left pulmonary rib cage. They suggest that IS should be considered as a tool for rehabilitation, but further research is necessary to confirm these finds before widespread adoption.

The purpose of the study by Taniguchi et al was to compare the responsiveness of 5 exercise measurements by evaluating the efficacy of pulmonary rehabilitation in subjects with IPF. They found that endurance time was the most responsive exercise measurement for evaluating efficacy of pulmonary rehabilitation in this patient population.

Guerin et al conducted a bench study to evaluate intrapulmonary percussive ventilation (IPV) superimposed on conventional mechanical ventilation with volume controlled or pressure controlled ventilation. They found that, when IPV was added to mechanical ventilation, the risk of hyperinflation is greater with volume-controlled ventilation than with pressure-controlled ventilation. They recommend using pressure-controlled ventilation to deliver IPV, and adjusting the trigger to avoid auto-triggering.

Mehring and colleagues used medical records of subjects with COPD to evaluate a disease management program (DMP) in Bavaria. They concluded that the German DMP for COPD has been effective in enhancing the quality of care in regard to an improved adherence to guidelines, pharmacotherapy, exacerbations and self-management education. However, it is disappointing that it was not able to prevent an increase in emergency admissions for the stable population in the cohort.

Kaneko reports the results of a study aimed to determine whether the 3-D distances on the chest and abdominal wall during deep breathing could be estimated using a newly developed breathing movement measuring device (BMMD). The results suggest that this BMMD is useful for quantitatively assessing deep breathing movement of the chest and abdominal wall in healthy young males. Its use in individuals with lung disease remains to be determined.