

This month's Editor's choice evaluates a smoking cessation program for parents of patients treated at a children's hospital. Taylor et al remind us that children are the most frequent victims of second-hand smoke and the least able to avoid exposure. The program included counseling and nicotine replacement therapy during hospitalization followed by an outpatient referral. In this study half of participants were able to quit before discharge. Goodfellow contributes an editorial pointing out that this is a good start for smoking cessation, but cautions that longitudinal studies confirming long-term cessation are needed.

Gallo de Moraes and colleagues describe the implementation of a protocolized treatment of ARDS at the Mayo Clinic. The emphasis of the protocol was early use of prone position in selected subjects. The results demonstrated earlier use of prone position, higher PEEP, and lower driving pressure, as well as a shorter ICU and hospital length of stay. However, mortality was unchanged. Spina et al contribute a similar paper regarding ARDS management at Massachusetts General Hospital. Their approach used a lung rescue team (LRT) for the management of refractory hypoxemia. The LRT evaluated respiratory mechanics using esophageal manometry, echocardiography and electrical impedance tomography. Evaluation by the LRT resulted in changes to patient management in two-thirds of subjects primarily through optimizing PEEP. Ratano and Fan provide an editorial that reviews the importance of both protocolized management of ARDS and individualized treatment by experts. They provide guidance based on evidence from the literature identifying interventions of merit, those that shouldn't be used, and those that require additional research.

Zhang et al evaluated lung function in children with asthma, trying to define indicators for determining severity of illness. They measured traditional pulmonary function indices and calculated the mean value of angle  $\beta$ . They found that angle  $\beta$  improved the sensitivity and specificity of exacerbation evaluations.

Kohlbrener and colleagues evaluated the 1-minute sit-to-stand test (STS) to evaluate exercise capacity in transplant candidates. They noted strong correlations between the STS and the 6-minute walk distance. However, the STS elicited greater dyspnea and lower oxygen saturation. They suggest the STS may be used when a walk test is not practical.

Elbehairy and others describe the impact of an ambulatory clinic for the treatment of dyspnea in subjects with COPD. They retrospectively reviewed 45 COPD subjects and found that interventions reduce dyspnea in approximately half of subjects. Importantly, those subjects with a reduction in dyspnea had fewer emergency room visits compared to non-responders.

In a study of adults with community acquired pneumonia (CAP), Rice and colleagues found that walking, measured by step count was reduced in subjects with frailty. They measured walking and non-walking time using a wearable activity monitor. Subjects with CAP spent little time walking and those with a higher daily step count had a shorter hospital length of stay. Greater frailty was associated with a two-fold reduction in step count.

Liu et al provide an evaluation of factors impacting the willingness of family members to consider palliative care in subjects requiring prolonged mechanical ventilation in Taiwan. Regulatory and prospective payment changes governing long term care recently changed and knowledge of these changes was not uniform. Two-thirds of families were willing to agree to palliative care. These data confirm the need to have subjects express their end of life choices and the need for cultural competence among caregivers.

Houze and others evaluated the rate of extubation failure related to upper airway secretions and aspiration. In a prospective

observational trial, patients on mechanical ventilation > 6 days had a 9-point swallowing assessment prior to extubation. Of 159 subjects, 16 required re-intubation in the first 72 hours, 7 related to excessive secretions/aspiration. They found that presence of one or both gag reflexes was associated with a reduced reintubation rate secondary to aspiration.

Qui and colleagues performed an observational study of postoperative monitoring in subjects using oximetry, capnography, and noninvasive respiratory rate and volume monitoring. Device-specific alarm types, rates, and respective actions were recorded and analyzed. They found that nuisance alarms were more common with oximetry and capnography compared to rate and volume monitoring. Adherence was also greater with rate and volume monitoring.

Poncin et al compared 6 oscillatory positive expiratory pressure (PEP) devices in a bench model of active expiratory flow. Using a pulmonary waveform generator they measured PEP, oscillation frequency and amplitude. They noted significant differences in performance of devices. The therapeutic impact of these findings requires patient testing to determine optimal characteristics.

Burnett and others compared physical activity level and perception of exercise in a group of subjects with cystic fibrosis (CF). Subjects were interviewed and completed self-reported questionnaires. Most subjects preferred walking and two-thirds felt exercise was important. Barriers to exercise included lack of energy, self-discipline and time constraints. The authors suggest that understanding perceptions can improve coaching of CF subjects regarding exercise.

Nakagawa and colleagues evaluated risk factors for inspiratory muscle weakness in subjects with heart failure. They recorded health risk factors as well as pulmonary and echocardiographic function. Half of subjects demonstrated inspiratory muscle weakness, which was associated with lower left ventricular ejection fraction, smoking history and lower systolic blood pressure. The ability of inspiratory muscle training (IMT) to remedy inspiratory muscle weakness requires further study.

Jacobs and colleagues contribute an invited review on extracorporeal carbon dioxide removal during continuous renal replacement therapy (CRRT). They note that almost half of patients with ARDS develop renal failure. Since a number of these patients require CRRT, systems adapted from CRRT platforms with blood flows under 500 mL/min could achieve significant CO<sub>2</sub> elimination.

Coudroy et al provide a systematic review of NIV on intubation rate in de novo respiratory failure. They identify 14 studies contributing 750 subjects, demonstrating an intubation rate of 39%. Higher PEEP was associated with lower intubation rate.

Seixas and colleagues contribute a systematic review on IMT in older adults. A review of the literature identified 7 trials involving 248 subjects. Studies revealed a positive trend towards the effectiveness of IMT for improving inspiratory muscle performance in the elderly. A period of 4 weeks appears to be a minimum time frame.

Lie et al and Chatburn and Mireles-Cabodevila contribute Year in Review papers on high flow nasal cannula and patient ventilator synchrony, respectively. Both feature seminal work published in the last 12 months.

Hess provides a new feature, the Cochrane Corner. These summaries highlight the key points of Cochrane Reviews developed by the Cochrane Rehabilitation Group. This first feature addresses the question, "Should noninvasive ventilation be used for treatment of acute cardiogenic pulmonary edema?" Cochrane Corners will become a routine feature in the Journal.