

This month's Editor's Choice compares interfaces used during noninvasive respiratory support (NRS) of premature infants. Drescher and Hughes report that the use of a nasal cannula with high-flow oxygen, CPAP, and noninvasive ventilation compared to a historical control using traditional nasal CPAP interfaces using the same NRS systems resulted in improved outcomes. The design of this study and variable NRS devices however, prevents singling out the cannula as the sole factor in these changes. Importantly, the use of the cannula was associated with reduced days on respiratory support and duration of oxygen therapy, but also an increased risk of retinopathy of prematurity. Hoffman's editorial cautions the off-label use of noninvasive interfaces and the importance of nasal CPAP as the current standard of care. Also, Hoffman encourages careful collection of data during evaluations of new technology.

Becker and Vargas evaluated websites of associate degree respiratory therapy programs in light of the initiatives supporting a baccalaureate degree (BS) for entry to the workforce. They found that fewer than half of the websites had any content related to BS degrees and only a third included BS matriculation agreements. Strickland contributes an accompanying editorial which describes the importance of the BS degree as an entry level to the respiratory therapy profession. She highlights the value of educating students on the degree completion process and providing guidance towards a degree advancement program.

Mechanical insufflation-exsufflation (MI-E) has become a standard of care for neuromuscular disease and has become more commonly used in invasively ventilated patients. The success of secretion removal is multifactorial but expiratory flow bias may be a key factor. Volpe and others describe a bench experiment with MI-E demonstrating that an optimized maneuver with an expiratory flow bias resulted in greater displacement of simulated mucus. In the accompanying editorial, Burle et al detail the importance of optimizing the MI-E maneuver to ascertain the value of MI-E in clinical medicine. They describe the importance of flow bias and how high inspiratory flow may not only force secretions deeper into the lung but cause lung injury.

Oliveira and coworkers describe methods for assessing respiratory muscle weakness in subjects with neuromuscular disease. They found that portable measures of maximum inspiratory and expiratory pressures and the sniff test correlated well with laboratory measurements. They suggest that this is a practical and accurate method for measuring respiratory muscle strength.

Silva et al also address the measurement of inspiratory muscle strength. They studied a new system for evaluating maximum inspiratory pressure and the influence of muscle warm up on the measured value. They concluded that 8 maneuvers were necessary to reach maximal and reliable values, and that inspiratory muscle warm up improved subject performance.

Respiratory care education and practice in the U.S. has helped shape practice around the world. Li and colleagues report the results of a nationwide survey on education and practice of respiratory therapy in China. Among their findings include that a third of therapists graduated with a BS compared to a quarter graduating from two-year programs. Nurses with

on the job training also often provided respiratory care. They conclude that the absence of licensure and failure to recognize the value of respiratory therapy were two major obstacles to the development of the respiratory care profession.

Kamio and Masamune evaluated mechanical ventilation safety incidents in both the ICU and general ward using data from a Japanese database. They identified over 250 adverse events, nearly 10% of which resulted in death. Human factors and insufficient knowledge base were the most common causes of error. Together with the previous paper, training of skilled respiratory therapists appears to be a current need worldwide.

Lung protection often requires small tidal volumes (V_T) delivered by full-featured adult ventilators. Moro et al describe the accuracy of V_T delivered by several ventilators in the presence and absence of humidity. In this systematic bench study, they reported that ventilators underdelivered V_T by 7–9% at low V_T and absolute humidity increased linearly with V_T .

Erçen Diken et al evaluated 61 subjects undergoing coronary artery bypass grafting (CABG) using the STOP BANG questionnaire as part of a perioperative assessment. This group of subjects did not have formal polysomnography. They reported that the STOP BANG questionnaire may predict obstructive sleep apnea risk and related pulmonary complications in CABG subjects who have not had polysomnography due to other limitations.

Corbellini et al evaluated changes in diaphragmatic mobility in COPD subjects before and after in-patient pulmonary rehabilitation. Using M-mode ultrasonography they reported that diaphragmatic mobility loss was common in subjects with moderate to very severe COPD and that those changes were correlated with COPD severity. Diaphragmatic mobility loss improved after in-patient pulmonary rehabilitation.

A report from Australia evaluates resilience factors as they relate to health-related quality of life (HRQOL) in subjects with COPD. Cannon and coworkers reported that resilience and confounding factors were of importance in COPD subjects' HRQOL. They recommend consultation at discharge with a professional who identifies, encourages, and approves of the patient's disease management abilities.

Ricardo and others describe the results of an email survey regarding methods of ventilation used during cardiopulmonary resuscitation (CPR). This international survey demonstrated that caregivers observed heterogeneous practices regarding the combination of assisted ventilation and chest compression during CPR. These practices were significantly different from international CPR guidelines.

Pleasant and coworkers contribute a systematic review of nebulized corticosteroids for COPD exacerbation. Using data from 9 trials in their meta-analysis, they conclude that nebulized high-dose budesonide is an acceptable alternative to systemic corticosteroids in non-critically ill hospitalized subjects with COPD exacerbations.

We also contribute an editorial regarding changes to the OPEN FORUM and publication of abstracts from the AARC Congress. We believe that the move to online publication of abstracts will allow them to be more easily searchable and accessible worldwide.