

Our Editor's Choice paper addresses the resistance of colorimetric carbon dioxide detectors commonly used in neonates. Brown et al evaluated 3 such devices and found significant differences in resistance between devices. Clinical trials are needed to determine the effects of this resistance on patient care. Mukhopadhyay and Sivieri point out that, until the results of such studies are available, it is prudent to avoid prolonged use of neonatal colorimetric devices without accounting for the high in-vitro resistance.

Solé-Lleonart and colleagues conducted an online survey on intra-tracheal antibiotic administration of anti-infective agents in mechanically ventilated adults. They found intra-tracheal administration of antibiotics is a common therapeutic modality in ICUs, but inadequate practices were widely encountered, independent of clinician experience with the technique. Wood suggests that this survey provides additional insights into some of the gaps in knowledge that concern clinicians, and it also reinforces the need for high quality data to inform the use of inhaled antibiotics.

Perino et al explored the mechanisms of orthopnea in stable obese subjects. They hypothesized that an increase in closing volume in supine position would be greater in subjects with orthopnea, and that the relationship of change in closing volume to change in dyspnea with position would be dependent on expiratory flow limitation (EFL) in the sitting position. They found that, in stable obese subjects, the magnitude of orthopnea correlated to an increase in the slope of phase III of the single breath nitrogen washout test in subjects without EFL. Thus, EFL should be taken into account in obese patients. Davies proposes that clinicians may need to modify current practices in obese patients when the clinical goal is to improve resting lung volume in sedentary patients.

To test whether regular, but fewer, hours of positive airway pressure (PAP) use would demonstrate clinically meaningful improvements and correlate with outcomes, Krakow et al retrospectively assessed compliant and sub-threshold compliant subjects with sleep apnea. In their subjects, 85% with sleep apnea regularly used PAP, but adherence was only 63%. Regular users showed clinical treatment effects and potential dose-response relationships, suggesting the term "use" offers advantages over the term "adherence." Sub-threshold compliance may not merit insurance coverage in many countries, which is an issue affecting many patients with sleep apnea.

In another sleep-related paper, Kogan and colleagues hypothesized that respiratory inductance plethysmography (RIP) can improve the sensitivity and specificity of scoring hypopneas when compared to both American Academy of Sleep Medicine recommended and acceptable criteria. In this small retrospective pilot study, there was improved sensitivity and specificity when scoring hypopnea by RIP sum channel.

In a third sleep-related paper, Sunnetcioglu et al investigated whether serum levels of asymmetric dimethylarginine (ADMA) and ischemia-modified albumin (IMA) are altered in subjects with obstructive sleep apnea (OSA). IMA and ADMA were significantly higher in subjects with OSA. IMA was independently associated with the severity of OSA defined by apnea-hypopnea index and severity of oxygen desaturation.

The aim of the study by Dag et al was to assess the association between cognitive function and age, pulmonary function, comorbidity index, and the 6-min walk distance in subjects with COPD, as well as to compare Mini Mental State Examination (MMSE) and Montreal Cognitive Assessment (MoCA) in their ability to identify cognitive dysfunction in subjects with COPD. They found that MoCA might be a more reliable screening test than the MMSE in detecting cognitive impairment in subjects with COPD.

Sancho et al assessed the effect of high-frequency oscillation (HFO) on the cough peak flow generated by mechanical in-exsufflation (MIE) in medically stable subjects with amyotrophic lateral sclerosis. They found that the addition of HFO to MIE did not effect the cough peak flow in this patient population.

Preoperative peak oxygen uptake in subjects with lung cancer receiving neo-adjuvant chemotherapy was evaluated by Fresard and colleagues. Neo-adjuvant chemotherapy was associated with lower preoperative \dot{V}_{O_2} peak in subjects with non-small cell lung cancer. Lower aerobic fitness may result from neo-adjuvant chemotherapy-induced reduction in pulmonary gas exchange, as well as heart or skeletal muscle toxicity.

The aim of the study by Owayed et al was to describe the frequency and spectrum of sinopulmonary complications among subjects with primary immunodeficiency disorders. Sinopulmonary complications were common in subjects with primary immunodeficiency disorders. These complications can be serious and continue even after proper treatment is initiated.

The objective of the study by Salepci and colleagues was to investigate the effect of identifying airway obstruction via spirometry, and explaining the results to subjects, on short-term success rate of smoking cessation. Advanced age and the presence of obstruction on pulmonary function testing increased the success of smoking cessation.

Figueiredo et al analyzed the effects of a family-based pulmonary rehabilitation program on close family caregivers of older subjects with COPD. Their findings support inclusion of family caregivers in a comprehensive pulmonary rehabilitation program. Family-oriented pulmonary rehabilitation maximizes caregivers' adaptive coping and potentially prevents negative psychological outcomes.

The purpose of the study by de Assumpção and colleagues was to determine reference equations for impulse oscillometry in healthy children and adolescents. Reference equations were developed for males and females. Height was the most influential predictor variable for impulse oscillometry parameters in the population studied.

The aim of the study by Vainshelboim et al was to identify practical prognostic predictors of mortality using cardiopulmonary exercise testing (CPET) in subjects with idiopathic pulmonary fibrosis. This study provides simple, practical and novel cut-points for CPET as predictors of prognosis to identify high-risk subjects with idiopathic pulmonary fibrosis. Impairment in exercise capacity and abnormal ventilatory responses during CPET were associated with poorer survival.