effects. While we might agree that the evidence basis for pulmonary artery catheters impacting outcome is weak, that has no bearing on the interventions discussed in this article.²

To argue that all bronchoscopic interventions need to be proven by RCTs is clearly flawed. Certainly, there is a need for RCTs to prove the efficacy of some bronchoscopic interventions, such as those for COPD and asthma. But for other interventions, such as stenting for malignant airway obstruction in carefully selected patients, the observational evidence meets the standard for a 1A evidence grade. To assert that conducting RCTs for all bronchoscopic interventions is warranted is less like the degree of treatment of severe tracheobronchomalacia. Contrary to a previous study,³ the clinical improvements noted in quality of life, dyspnea, and 6-min walk distance were not associated with a significant change in FEV₁. The authors offer placebo effect and observer bias as possible explanations for this finding. Another explanation is that the clinical improvements were real but were not identified using FEV₁ measurements.

Improved large airway conductance, as expected after tracheobronchoplasty, should be reflected by an increase in FEV₁.³ In patients with COPD, the knowledge that therapy with bronchodilators can improve dyspnea, exercise endurance, and health status, with little or no associated change in maximal expiratory flow rates, has prompted a search for other physiologic markers of improved dynamic airway function. These include inspiratory capacity, inspiratory reserve volume, and inspiratory capacity/minute ventilation ratio, all of which are markers of dynamic hyperinflation, which is also a strong predictor of exertional dyspnea. Although these measurements were not performed in the study by Majid et al,¹ one might assume that by decreasing the degree of expiratory central airway collapse, exertional airflow limitation and dynamic hyperinflation were also reduced, thus resulting in improved dyspnea and quality of life.

It seems that a majority of patients in the study by Majid et al¹ had expiratory central airway collapse from asthma or COPD. Bronchodilator treatment in patients with expiratory central airway collapse often improves hyperinflation, which is reflected by reduced residual volume and increased vital capacity, but results in only a small increase in airflow.⁴ When patients with expiratory central airway collapse breathe heliox, there is decreased exertional airflow limitation, dynamic hyperinflation, and dyspnea, resulting in improved exercise capacity.⁵ Heliox is known to modify gas density and improve density-dependent central airway flow. Therefore, treatment by tracheobronchoplasty, by stabilizing and reducing the central airways flow turbulence, might also result in clinical improvement with exertion that might not necessarily be detectable using FEV₁ measurements.

We read with interest the article in a recent issue of CHEST (October 2008) by Majid et al¹ on tracheobronchoplasty for the treatment of severe tracheobronchomalacia. Contrary to a previous study,³ the clinical improvements noted in quality of life, dyspnea, and 6-min walk distance were not associated with a significant change in FEV₁. The authors offer placebo effect and observer bias as possible explanations for this finding. Another explanation is that the clinical improvements were real but were not identified using FEV₁ measurements.

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Tracheobronchoplasty for Severe Tracheobronchomalacia

To the Editor:

We read with interest the article in a recent issue of CHEST (October 2008) by Majid et al¹ on tracheobronchoplasty for the treatment of severe tracheobronchomalacia. Contrary to a previous study,³ the clinical improvements noted in quality of life, dyspnea, and 6-min walk distance were not associated with a significant change in FEV₁. The authors offer placebo effect and observer bias as possible explanations for this finding. Another explanation is that the clinical improvements were real but were not identified using FEV₁ measurements.
Response

To the Editor:

We thank Drs. Murgu and Colt for their insightful commentary on our recent article (October 2008) in CHEST. It is stated that the clinical improvements noted in the quality-of-life questionnaires, dyspnea scores, and 6-min walk distance in our population are not paralleled by a significant change in the predicted FEV₁. They suggest that physiologic measurements intended to quantify the degree of hyperinflation may be a better marker in these patients.

We concur with these suggestions and believe that the quantification of resting and dynamic measurements on lung hyperinflation (inspiratory capacity [IC], inspiratory reserve volume [IRV], IC/minute volume ratio, residual volume, total lung capacity and residual volume/total lung capacity ratio) should be measured before and after surgical central airway stabilization, since there is strong evidence that their decrease correlates with improvement in symptoms and exercise endurance in the COPD population.

We do want to clarify some of the observations of Drs. Murgu and Colt. They quote a previous study by Wright et al., where they found an improvement in the mean percent predicted FEV₁ after the operation. In this study, the mean preoperative FEV₁ was 51.2% predicted and increased to 73.3% predicted after the operation (p = 0.0009). It is important to note that this study was much smaller that the one we reported, with only 14 patients, and of those only 5 patients (35%) had an improvement of > 200 mL in FEV₁.

We think that spirometric measurements (FEV₁) may not only reflect the collapse of the central airways, but may also relate to peripheral airway obstruction. For this reason, since the operation only stabilizes the central airways, improvement in FEV₁ is expected to be variable.

Although we agree with their observations, we know that dyspnea on exertion is not the only symptom that interferes with the quality of life of these patients. As shown in previous studies, orthopnea, choking sensation, intractable cough, inability to clear secretions, and recurrent infections are important symptoms in this patient population. We believe that these symptoms may be related directly to central airway collapse or indirectly from secondary complications. We hypothesize that when secretions are not cleared effectively, these patients are predisposed to superinfection. This will trigger local inflammatory mediators resulting in frequent bouts of bronchospasm, bronchitis, and pneumonia. Future studies need to address the underlying pathophysiology of this process.

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No conflicts of interest exist for either of these authors.

References


High-Dose Inhaled Corticosteroid Versus Long-Acting β-Agonist Addition in Asthma

To the Editor:

We read with interest the recent article in CHEST (December 2008) by O’Byrne et al. presenting a post hoc analysis of the FACET database, which concluded that the addition of a long-acting β-agonist (LABA) increases the probability of well-controlled asthma compared to an increase in inhaled corticosteroid (ICS) dose. Asthma control is a complex and multifaceted concept, and disconnects have been reported between “day-to-day” symptom control and exacerbation frequency. We believe there is value in further examining this disconnect.

In the current analysis, although an increase in ICS dose was unlikely to result in improvements in sustained symptom control, the exacerbation frequency (defined as the need for courses of oral corticosteroids) was considerably to be lower in the high-dose ICS group (0.36 courses per year) than in the low-dose group (0.72 courses per year), and the proportions of patients having one or more exacerbations per year was also lower in the high-dose ICS group (22% vs 32%, respectively). Interestingly, the exacerbation frequency was also lower in the high-dose ICS group (0.36 courses per year) than in the low-dose-ICS-plus-LABA group (0.48 courses per year), implying that a subgroup of patients may gain greater benefit from an increase in ICS dose than from the addition of a LABA. Although exacerbations are infrequent in most patients with mild-to-moderate asthma, they are the time when the patient has the most risk, distress, and health resource use, so reducing the exacerbation risk may be important for exacerbation-prone patients.

We have recently reported similar findings in an observational study comparing clinical outcomes in cohorts of asthmatic patients whose routine therapy was increased from the standard dose of an ICS by either increasing the ICS dose or by the addition of a LABA; we found that although LABA addition was associated with better odds for successful overall control using a composite measure, high-dose ICS treatment was associated with lower odds of requiring oral corticosteroid therapy (odds ratio,