Clinical Evolution in Asthma and COPD

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New approaches discussed at CHEST 2015 ranged from the impact of bariatric surgery on asthma control to endobronchial valve placement in COPD.

Obstructive lung disease is divided mainly into asthma (reversible) and chronic obstructive pulmonary disease (COPD [nonreversible]), but in clinical practice this distinction is often difficult to make—especially in older patients. In about 20% of patients, asthma and COPD may coexist. During the 2015 ACCP (CHEST 2015) meeting in Montreal, a final session about clinical updates in Asthma and COPD was held where assistant professor Jennifer McCallister, MD from the Ohio State University and Benjamin Smith, MD from McGill University Health Center and Montreal Chest Institute reviewed the most recent breakthroughs in managing both of these ubiquitous diseases.

Mepolizumab. First Dr McCallister highlighted the positive results from trials of the monoclonal antibody mepolizumab, used in the treatment of patients with recurrent asthma exacerbations and residual eosinophilic inflammation despite high doses of inhaled glucocorticoids. The study found that mepolizumab administered either intravenously or subcutaneously had a significant glucocorticoid-sparing effect, reduced exacerbations, and improved control of asthma symptoms with no difference in adverse events versus placebo.2,3

Tiotropium and GINA. Switching gears she emphasized the 2015 changes in the Global Initiative for Asthma (GINA) guidelines which add tiotropium—a long-acting muscarinic antagonist (LAMA)—to steps 4 and 5 of treatment for patients with uncontrolled or refractory asthma symptoms.4 This change is based on a strong meta-analysis and systematic review5 that showed tiotropium as an add-on to long-acting β2-agonists and inhaled corticosteroids improved peak expiratory flow and forced expiratory volume/1 second, reduced exacerbations, and improved overall asthma control.5

Bariatric surgery. Finally Dr McCallister reviewed recently published data6 on the effects of bariatric surgery on patients with asthma who are morbidly obese. The longitudinal study measured lung function, asthma control, cellular infiltrates in bronchial biopsies and circulating markers of systemic inflammation during follow up at 3, 6 and 12 months. Results included improved small airway function, decreased systemic inflammation, and number of mast cells in the airways of obese patients, effects that could explain recorded improvement in asthma control, quality of life, and lung function.

COPD in never-smokers. Dr Smith of McGill University Health Center talked about the CanCOLD study that examined characteristics of COPD in never-smokers and ever-smokers in the general population.7 It included 5176 subjects age 40 years and older. The prevalence of COPD in never-smokers was 6.4%, constituting 27% of all COPD subjects. The common independent predictors of COPD in never-smokers and ever-smokers were older age, self-reported asthma, and lower education level. In both never-smokers and ever-smokers COPD was characterized by increased respiratory symptoms, symptom exacerbations, and increased residual volume/total lung capacity. Only smokers, however, had reduced DLCO/Va and emphysema on chest CT scans.

Endobronchial valves. Finally, Dr Smith discussed the significance of results from the “Bronchoscopic lung volume reduction with endobronchial valves for patients with heterogeneous emphysema” trial.8 The randomized controlled double blinded trial involving 50 patients with very strict selection criteria concluded that unilateral lobar occlusion with endobronchial valves in patients with heterogeneous emphysema and intact interlobar fissures produces significant improvements in lung function. There is a risk of significant complications (2 deaths, 2 pneumothoraces, 2 pneumonias, and 4 expectorated valves in the treatment group) and further trials are needed that compare valve placement with lung volume reduction surgery.

Links: