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UCLA specialists target chronic obstructive pulmonary disease with innovative approaches

A team of experts in UCLA's Division of Pulmonary and Critical Care Medicine is offering the latest treatments for chronic obstructive pulmonary disease (COPD), including both medical and interventional therapies that are available through clinical studies not offered at most centers. These treatments go beyond the standard care — typically medical management and pulmonary rehabilitation — to offer innovative approaches for all stages of COPD.

COPD is a major cause of disability and the third-leading cause of death in the United States, affecting some 24 million Americans. While this progressive disease has no cure, new treatments can potentially slow its advancement, alleviate shortness of breath, and improve exercise capacity.

Ambitious research agenda

Some patients with severe COPD symptoms that don't respond to medical therapy may benefit from interventional treatments such as lung volume reduction surgery (LVRS). Emphysema traps air in areas of the lungs that have lost elasticity, creating dead spaces that don't support respiration.

UCLA offers referral center for a genetic lung disease

UCLA is among the few national referral centers for Alpha-1 antitrypsin (AAT) deficiency, a complex genetic lung disease. AAT patients don't make enough alpha-1 protein, which protects the body's organs — including the lungs — from the damaging effects of other proteins. AAT deficiency can lead to emphysema and liver disease.

There is no cure for AAT deficiency, but its related lung diseases have various treatments. UCLA pulmonary specialists are experts in matching appropriate treatments to individual patients. The UCLA COPD Program maintains a registry for patients with AAT-deficiency-related illnesses in addition to providing consultation and continuing care, family screening services, education and rehabilitation. UCLA's leadership as a center for lung transplantation further enhances our ability to care for these patients.

"Some people with AAT deficiency go undiagnosed or are misdiagnosed with asthma," says Christopher B. Cooper, MD, medical director, UCLA COPD Program. "With good genetic studies and expert intervention, AAT can be recognized and treated in time."

In performing LVRS, surgeons remove the diseased tissue to give normal lung areas more room to expand and improve overall lung function. LVRS also is used as a bridge to lung transplantation. UCLA helped lead development of LVRS as a member of a select group of medical centers in the nation's first multi-center clinical trial to evaluate its safety and efficacy, the federally funded National Emphysema Treatment Trial.

Now, UCLA pulmonary specialists are exploring a less-invasive and lower-risk alternative to LVRS — bronchoscopic lung volume reduction (BLVR). In this procedure, which is part of a phase III clinical trial, an intrabronchial valve (IBV) is delivered via catheter to the lungs' upper lobes. Once placed, the IBV prevents air from entering damaged areas of the lungs while permitting trapped air and secretions to escape. This enables healthier segments of the lung to expand more readily, which leads to better lung function.

Intrabronchial valves are also being used by UCLA pulmonologists to repair bronchopleural fistulas, abnormal passageways that develop between the large airways in the lungs and the membranes or pleura lining the lungs. This condition is often a serious complication of lung-cancer surgery. When a fistula develops, air may travel through this passageway into the space between the pleura. Using an endoscope, the IBV is implanted in the appropriate lung lobe; it then opens to temporarily block the passageway, allowing the surgeon to complete the repair.

Non-invasive approaches to the management of severe COPD have been advancing over past years and new therapies are emerging. The UCLA Division of Pulmonary Medicine is participating in a large, international, multi-center phase III study of a treatment for severe COPD using a new inhaler once daily. The inhaler contains a combination of three medications that include a long-acting beta agonist, long-acting muscarinic antagonist, and inhaled corticosteroid. The benefits of the triple inhaler used once daily include not only improved patient comfort and compliance, but better control of airflow obstruction.

Pulmonary care at UCLA

A weekly Advanced COPD Clinic brings together pulmonologists, radiologists and surgeons to offer personalized care and a growing education program for pulmonary fellows. The clinic expands the capabilities of UCLA's COPD Program, a regional referral center for the diagnosis and management of such obstructive lung diseases as emphysema, acute and chronic bronchitis, bronchiectasis and cystic fibrosis. In addition to clinical care and peer support, the pulmonary team offers family screening for genetic lung diseases, patient education and home monitoring services using tablet devices to reduce or prevent hospital readmissions.

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