

Potential treatment option for severe emphysema under study

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Emory University researchers are participating in a nationwide study to explore an investigational treatment for advanced widespread emphysema. The EASE (Exhale Airway Stents for Emphysema) Trial focuses on airway bypass, a minimally invasive procedure designed to reduce excessive lung inflation and shortness of breath – typical complications of emphysema - by making new pathways for trapped air to exit the lungs.

During the airway bypass procedure, new openings are created in the airway wall connecting the damaged lung tissue to the natural airway. These pathways are supported and kept open by several new drug-eluting stents.

"Emphysema permanently destroys lung function and there are currently limited treatment options for people with this devastating disease," says Rabih Bechara, MD, assistant professor and director of interventional pulmonology, Emory University School of Medicine. "This is an exciting study that could offer substantial relief to participants, and eventually possibly to the millions who suffer from the effects of emphysema."

Emphysema, usually caused by chronic tobacco smoking, is a persistent, progressive and irreversible lung disease characterized by shortness of breath and the destruction of lung tissue. Over time, the tiny air sacs in the lungs, or alveoli, are damaged and lose their elasticity.

This loss of the lungs' natural elasticity and the collapse of airways in the



lung combine to make exhalation ineffective, leaving emphysema sufferers with hyperinflation because they are unable to get air out of their lungs. Breathing becomes inefficient and patients have to work very hard to breathe – making normal activities, such as walking, eating or even bathing, difficult. There is no cure and few treatment options are available for most patients.

"By creating new pathways for airflow with the airway bypass procedure, we hope to reduce hyperinflation and improve lung function," says Bechara, principal investigator of the study at Emory. "Currently, patients are often in poor physical condition, struggling with each breath so if we can help patients breathe easier it is likely to improve their quality of life."

Physicians commonly use bronchoscopes to examine the airways within the lungs. Participants in the trial are randomized two to one to an airway bypass or a control group. If randomized to the airway bypass group, physicians will first use a Doppler probe inserted through the bronchoscope to identify a site in the airway that is away from blood vessels. A special needle is then used to make a small opening and the stent is placed in the passageway to keep it open. The procedure involves placing up to six Exhale® Drug-Eluting Stents – manufactured by Broncus Technologies, Inc.

Although this procedure is still under clinical investigation, feasibility data suggest it may hold promise for patients with emphysema. Results from the open-label Exhale Drug-Eluting Stent feasibility study were published in the October 2007 issue of the *Journal of Thoracic and Cardiovascular Surgery*. Positive results included a statistically significant reduction in the amount of air trapped in the lungs and an improvement in breathing for patients at six months after the airway bypass procedure.



Source: Emory University

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