

RESEARCH EFFORTS FOCUS ON ASTHMA-COPD OVERLAP



Asthma and chronic obstructive pulmonary disease (COPD) each affect millions of people in the United States. So it's not unexpected that a subset of patients would have both lung conditions. Yet surprisingly, little is known about the science of what's called asthma-COPD overlap, or ACO. Experts at Brigham and Women's Hospital are focused on changing that.

"From a clinical perspective, primary care doctors, respiratory specialists and emergency departments see these patients all the time. They know how to recognize when someone has both conditions," said [Craig P. Hersh, MD, MPH](#), a specialist in pulmonology and critical care medicine at [The Lung Center](#) at the Brigham. "But from a scientific perspective, much less is known."

Based on observational studies, experts believe anywhere between 15 and 45 percent of people with COPD have a previous asthma diagnosis. One effort that promises to help researchers get a better handle on those numbers is [COPDGene](#), a National Institutes of Health-sponsored, multicenter study in which Hersh is a site co-principal investigator at the Brigham. The study has enrolled 10,000 smokers with and without COPD to follow them longitudinally.

Seeking a Clearer ACO Diagnosis

The first step in studying these patients is learning to identify them. "Right now, we don't have a clear way to do that," Dr. Hersh said. "As part of the COPDGene study, we're collecting data on CT scans, lung function and blood samples, which we think will help to find markers that are unique to the subset of patients with ACO."

The lack of clear diagnostic markers has been a major impediment to clinical research. In fact, Hersh noted, a suspected diagnosis of ACO has traditionally been a disqualifier for clinical trials: Patients with an asthma diagnosis are excluded from COPD trials, and patients with a COPD diagnosis are excluded from asthma trials. Because people with a history of asthma were not excluded from COPDGene, the effort provides a unique opportunity.

Using what Dr. Hersh called a "fairly strict" definition, investigators have discovered that about 12 percent of people enrolled in the observational study have asthma-COPD overlap. "We've found that it's more common in women, which we already knew," he said. "But we've also found that it's more common in African Americans. That frequency wasn't known, and it's an important new finding."

COPDGene Study: A Move Toward Precision Medicine

As the name suggests, the COPDGene study is also seeking genetic variants that could be linked to a predisposition to COPD. "We know that both asthma and COPD have genetic or hereditary influences, so we've been studying that overlap as well," Hersh said. "To do these kinds of studies, you need very large patient populations, so we're not there yet. But we do have some suggestive findings already."

Another focus of COPDGene is to look for particular antibodies in the blood, although specific markers for ACO have not been found yet.

"There have been a lot of promising new treatments with asthma biologic therapies over the last several years, and there's a lot of interest in figuring out if these medications would be useful for patients with ACO," Dr. Hersh said. "If we can learn to define ACO based on biomarkers found on CT scans or in the blood, we may be able to more accurately apply precision medicine, offer these biologics or develop potential new medications for this important group of patients."

Dr. Hersh added that even before specific clinical trials for ACO are launched, having better diagnostic guidelines will have an impact on clinical care. "We could start using these biomarkers in clinical practice right away," he concluded.