BREATHE EASY

Breathe Easier with Two Medications

One of the goals of treating COPD and other respiratory conditions is to keep the airways as open as possible for as much of the time as possible. A key to this happening is being on the best bronchodilator program possible.

Bronchodilators are a group of medications designed to open (dilate) the lung airways (bronchioles). There are three major types of bronchodilators used in COPD. The first-class is called beta-agonists and includes the medication albuterol. Albuterol works by relaxing the airways so they remain more open. It also improves the clearance of mucus from the airways. Albuterol is fast-acting and the effect lasts 4-6 hours.

The second class is the anticholinergics, the most common being ipratropium. Ipratropium works by preventing airway contraction. It also reduces the amount of secretions in the airways without making them thicker (thicker would be bad). Ipratropium takes a bit longer than albuterol to start working and lasts for 4-6 hours.

The third major group is the methylxanthines, which includes the medication theophylline. Theophylline is related to caffeine. That may be why some people breathe better after drinking a cup of coffee. Although theophylline is known to open airways and even strengthen the respiratory muscles, it is not a first-line choice because of its side effects. Stomach upset is a common problem and if the blood levels become too high, the side effects can become serious. It is important for your doctor to monitor blood levels if you are using theophylline.

Patients are often started on just one of the bronchodilators, typically albuterol. However, many patients continue to exhibit symptoms (e.g. cough, wheeze, shortness of breath) when using just one medication (albuterol or ipratropium). For anyone whose symptoms are not well controlled when using a single medication, adding the other medication should be strongly considered.

Studies have demonstrated many benefits to adding ipratropium to albuterol and using both together. Clinical studies demonstrate the following benefits:

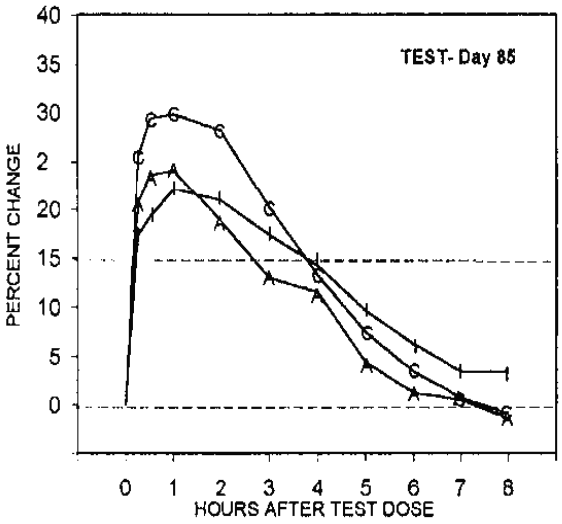
- **Reduced Shortness of Breath, Improved Activity Levels, and Decreased Cough** - One study notes, “Inhaled short-acting beta-agonists (e.g. albuterol) and anticholinergics reduce breathlessness by improving lung emptying and also reduce the severity of coughing. [Inhaled anticholinergic drugs] improve the individual’s health status, presumably by preventing episodes of breathlessness and/or improving exercise tolerance.”
- **Improved Sleep, Nighttime Blood Oxygen Levels, Improved Lung Size and Air Movement** - Doctors in another study stated, “Treatment with ipratropium bromide solution in patients with COPD led to a significant:

  1) Improvement in nighttime blood oxygen levels

  2) Improvement in perceived sleep quality,

  3) Increase in deep sleep time

  4) Increase in pre-sleep lung volumes and flow rate”
- **Fewer Episodes Requiring Additional Treatment, Hospitalization, and Lower Total Cost of Care** - Finally, a third study on adding ipratropium to albuterol concluded, “The inclusion of ipratropium in [COPD treatment] is associated with a lower rate of [episodes requiring additional medical intervention and hospitalizations] in COPD. The result is lower treatment total costs and improved cost effectiveness.” This study also demonstrated that the need for additional medications such as antibiotics and steroids was reduced.



This graph compares using two medications to one and clearly demonstrates that using both medications together (line C) produces a higher improvement in airflow out of the lung compared to albuterol alone (line A) or ipratropium alone (line I).

To determine if using a combination of two or more medications is best for you, talk to your doctor. Feel free to contact us and talk to one of our respiratory clinicians if you have more questions about these medications.