Leukotriene Modifiers- The New Medicine for and Age Old Problem

Medically speaking, we live in very exciting times. Our understanding of asthma as a disease of children and adults has greatly improved over the past 5-10 years and pretty soon, doctors may actually prescribe gene therapy to treat asthma. But other than newer, long acting bronchodilators and more potent steroid drugs, are there any other new drugs currently available?

Glad you asked! A new class of drug known as leukotriene (loo-ko-tri-eene) modifiers or inhibitors has been developed and two drugs are currently available by prescription treatment. Remember that steroids are, and probably will always be, the most effective drugs we have for inflammation. Steroids prevent permanent lung changes that occur with long term, untreated inflammation. And inflammation is that fundamental tissue process that triggers asthma and causes attacks.

Leukotriene inhibitors are not steroids, but if prescribed, may help control the inflammation that is triggering your asthma.

So how do leukotriene inhibitors control inflammation? Let's first discuss what leukotrienes are. Simply stated, when allergies or viral infections occur, inflammation begins with the release of a molecule from airway cell membranes, called arachidonic acid. Arachidonic acid acted on by two different enzyme pathways and becomes either leukotrienes or other molecules called prostaglandins. Leukotrienes and prostaglandins like histamine are called "mediators" and can trigger asthma. Leukotrienes interact with their own special receptors in the lung to increase mucus production, airway irritability and swelling, which lead to coughing, wheezing, shortness of breath or chest tightness. Most importantly, leukotrienes attract other cells along with other, potent chemical mediators in the cells to cause tissue inflammation. The inflammation must be controlled, or the lungs will become "twitchy" and, if left uncontrolled, will result in an attack or a hospital admission.

The leukotriene inhibitors are the first new class of anti-inflammatory asthma medication introduced in the last 10 years. Two drugs are available: once a day Singulair and twice a day Accolate. They are conveniently taken pills, rather than inhalers, and stop inflammation by blocking the receptor on the cell where leukotrienes work. They begin to work within 1-2 days and have minimal side effects. These drugs do not affect the liver so no blood tests are needed, and can be taken safely with other oral medications. Singulair is also indicated for children in an easy-to-take chewable form or powder granules, once a day. One added bonus is that allergies cause leukotrienes to be active in other parts of the body, leading to allergy symptoms, hives and/or sinusitis. Singulair, in fact has just been approved for treatment of allergic rhinitis.

Leukotriene inhibitors are effective fir mild to severe asthma and mild asthma induced by aspirin and exercise, but the question remains: should they be used alone or with inhaled steroids? If you currently take high doses of steroids, the addition of leukotriene inhibitor may help reduce the dose of inhaled steroids needed for your asthma.

Not all patients respond equally to these drugs. A certain group of patients, probably those with allergies and asthma, respond best to either Singulair or Accolate. Unfortunately, there is no way to predict who will or will not respond, so ask your provider whether adding these drugs will improve your health.