Is a Cure for Asthma on the Horizon?

by PATRICIA BRATIANU

Major Breakthrough for Asthma Research

Medical researchers at Cardiff University in Wales have identified a protein they believe is responsible for the occurrence of asthma attacks.

Finding a lasting cure for any illness depends upon identifying the primary cause of the problem. Now that the protein has been identified, researchers are optimistic that a cure for asthma may be within sight.

In addition to asthma, the scientists believe that a cure may be found soon for emphysema and chronic bronchitis.

The Calcium-Sensing Receptor Protein

The identified protein is a calcium-sensing receptor (CaSR). The researchers noted that people who have asthma have higher than normal levels of calcium in their lungs, and activation of the CaSR appears to trigger asthma attacks.

The researchers, who collaborated with experts at King's College in London and the Mayo Clinic, were able to identify and document how environmental stressors trigger the release of the CaSR in the airways of asthmatics. The CaSR promoted twitching, inflammation, and irritability of the air passages. As a result of the activation, airways, became inflamed, swollen, tight, and constricted.

While allergens, pollutants, and other environmental stressors are known to impact asthma attacks, the reason why some people have an increased sensitivity to those irritants was unclear until the researchers made this important discovery.

What Is Different About This Research?

The reason scientists are so optimistic about finding a cure for asthma is because a drug that reduces calcium within the lungs already exists.

The medication, known as a calcilytic, was developed approximately 15 years ago as a treatment for osteoporosis. The drug was found to be safe for that use; however it was not very effective so it wasn't widely used.

The calcilytic agent is now being used experimentally on mice as a treatment for asthma. The medication is applied to the lungs via a nebulizing device. When the medication reaches the protein in the lungs, the CaSR is deactivated and the asthmatic symptoms cease.

The Cardiff researchers report that the medication is able to reverse all symptoms of asthma.

When Will This Treatment Be Available?

While the research is very promising, it is still too early to state conclusively that a cure for asthma is right around the corner. So far, the medication has only been tested on mice and laboratory samples of human tissue.

Obtaining approval and funding for new medical treatments is a time consuming process. It is hoped that human studies for the new treatment may begin within two years.

Human clinical trials are expensive and time consuming, conducted in several phases. Initial trials will evaluate the safety of the calcilytics on small numbers of individuals. If the drug is found to be safe for use within the lungs, further trials will be conducted to compare the effectiveness of calcilytics with other known treatments for asthma.

Trials will be conducted in order to determine medication doses, and larger trials will continue to monitor the safely and effectiveness of treatments even after the drug becomes available.

Researchers believe that if all goes as hoped for, calcilytics may be available for the treatment of asthma in as little as five years. Because the research is being conducted on a drug that is currently available, albeit for other uses, that may speed up the process.

In rare instances, clinical trials are cut short when it is very clear that the agent being tested is extremely important and clinically safe. This potentially could be the case with calcilytic therapy.

Calcilytic therapy, if successful, will be the first major change in how asthma is treated in over half of a century.