

Test Drugs Raise Hope Of Preventing Asthma

Experimental medicines that attack allergies at their source open a new strategy for preventing asthma and hay fever, which afflict a quarter of all Americans, researchers say.

If the drugs work as well as researchers hope, they should provide a new weapon for controlling annoying and sometimes life-threatening allergic reactions without the side effects that limit many available medicines. But the drugs will not be available for the several years needed to test them for safety and effectiveness. New studies of small numbers of patients demonstrate, as scientists long suspected, that substances called leukotrienes are among the chief culprits in a variety of allergic reactions. In three reports, researchers show that drugs that interfere with leukotrienes can significantly reduce the wheezing of asthma and the runny nose of hay fever. Leukotrienes are known to cause tightening of the air passages in the lungs and to increase mucus production in the nose. But until the recent development of drugs that block leukotrienes, scientists could not prove their importance in allergic reactions. Preventing the Problem "What makes this important is that it's a new way of treating asthma," said Dr. Jeffrey M. Drazen of Beth Israel Hospital in Boston. "Other drugs put out the fire once it's started. We haven't had a way to prevent the problem in the first place, which is what these drugs do." Doctors said the new drugs, which appear to have no side effects, could supplement or replace several asthma drugs already in use, like cromolyn and theophylline. While the current drugs help many people, some cause unpleasant side effects, like tremors, nausea, vomiting, headaches and drowsiness. An estimated 35 million to 40 million Americans get hay fever, and 12 million to 15 million have asthma. Dr. Michael Kaliner of the National Institute of Allergy and Infectious Diseases said that more study would be necessary to prove the drugs' worth against these ailments, but that they could eventually have tremendously wide use. 'Promising and Exciting' Elsewhere, doctors are experimenting with similar leukotriene-blocking drugs against other ailments resulting from chronic inflammation. Among those ailments are rheumatoid arthritis, psoriasis and ulcerative colitis. "This is an area people have been studying for a long time," said Dr. Suzanne Hurd of the National Heart, Lung and Blood Institute. "This is the first example that we might have some payoff here. It's very promising and exciting." Dr. Howard R. Knapp of the University of Iowa used an experimental Abbott Laboratories drug, zileuton, to prevent hay fever symptoms in people allergic to ragweed and grasses. In the other studies, researchers from Beth Israel used zileuton to prevent asthma induced by breathing cold air, and doctors from McMaster University in Hamilton, Ontario, gave a Merck Sharp & Dohme drug, venezair, to prevent asthma touched off by exercise. The three studies are being published Thursday in *The New England Journal of Medicine*, along with an editorial by Dr. Daniel J. Stechschulte of the University of Kansas in which he said the studies "offer encouraging therapeutic insights." Blocking an Enzyme Leukotrienes, which tighten air passages in the lungs and raise mucous production, are made in the body through a complex chemical process that involves an enzyme called 5-lipoxygenase. Zileuton stops production of leukotrienes by interfering with this enzyme. Dr. Knapp gave zileuton to eight people with hay fever. When they were challenged with ragweed or grass, he said, seven of the eight "knew they had a lot less congestion." In the Beth Israel study, doctors tested zileuton on 13 people whose asthma was touched off by breathing cold, dry air. Taking the drug increased their tolerance of cold air by 47 percent. In the third study, Dr. Patrick J. Manning and others from McMaster University tested venezair on 12 people who regularly got asthma during exercise. The treatment reduced their asthma by 70 percent and in three people prevented it entirely. "These drugs appear to be very safe," said Dr. Paul M. O'Byrne, senior author of the study. "There may well be instances where these selective drugs will be very useful, rather than less selective drugs that tend to have more side effects."