

Histamine receptors found

Using newly designed drugs, scientists at several institutions in France and Germany have confirmed the presence of a third class of cell-surface receptors for histamine that apparently is involved in controlling the release of the bioactive substance. Histamine, which is secreted by blood, nerve and endocrine cells, causes smooth-muscle contraction and increased permeability of capillaries. Because histamine has such broad effects in the body, the new receptor-blocking drugs could hold potential for the treatment of allergies, cardiovascular disease and inflammation, say the researchers.

Results also show that the H₃ receptors are found in the lungs, spleen and skin. This, according to the scientists, is the first evidence that they exist in any tissue other than the brain. The scientists suggest that the presence of the H₃ receptors on the surface of the same cells that release histamine could indicate a feedback mechanism in which the receptors shut down histamine release when the substance reaches a certain level.

Related conclusions come from an independent study by researchers at the University of Cincinnati's College of Medicine, who found the H₃ receptor on nerve endings that surround blood vessels. Data from that study indicate that the receptors play a role in controlling blood circulation in some tissues. Both studies appear in the May 14 NATURE. □

Hereditary factor in AIDS?

A person's relative susceptibility to infection with the AIDS virus, as well as how rapidly the fatal disease progresses in the body, may be associated with genetic differences in a particular protein found in blood and on cell surfaces, say scientists at St. Mary's Hospital Medical School in London. They report their preliminary study in the May 2 LANCET, saying that homosexual men with a particular variation of the protein called group specific component (Gc) were more vulnerable to both infection with the AIDS virus and subsequent appearance of the disease.

For example, in the study of 203 homosexuals at risk of infection or infected with the AIDS virus, plus 172 healthy heterosexual and homosexual controls, 30 percent of the patients with AIDS had inherited from both parents genes for the protein's Gc 1f form, compared with only 0.8 percent of the controls. The authors suggest that the Gc protein, which binds vitamin D and transports calcium, helps regulate viral entry into host cells, in a process that may be affected by the form of protein found in an individual. □

Ballooning-out gets mostly good marks

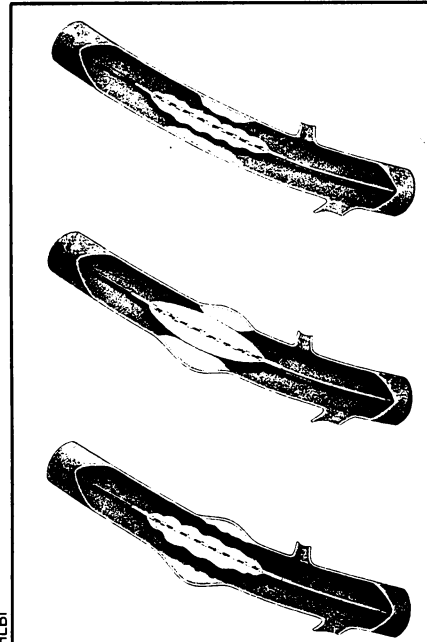
Results from the longest follow-up study of patients treated with balloon angioplasty — which opens blocked blood vessels in the heart — indicate that patients still benefit years after the procedure. However, in more than 30 percent of the patients, re-narrowing occurs within seven years, necessitating repeat angioplasty or heart surgery, say physicians.

Initial angioplasties on the 169 patients were done in Zurich, Switzerland, prior to 1981 by Andreas R. Gruentzig, who performed the world's first angioplasty on a human in 1977. By inflating a balloon-tipped catheter inside a blood vessel, cardiologists can spread apart the thickened walls and restore blood flow through the vessel. Designed to open arteries in the heart narrowed by plaque buildup due to atherosclerosis, angioplasty does not require major surgery. Researchers at Emory University School of Medicine in Atlanta and Zurich's University Hospital, who followed Gruentzig's first patients for five to eight years to measure the procedure's long-term success, report the results in the April 30 NEW ENGLAND JOURNAL OF MEDICINE.

Encouraged by the relative non-invasiveness of the procedure and reported successes, more physicians are recommending it in lieu of heart surgery for certain patients. But as the procedure's popularity increases, so do questions about whether it is merely a "stop-gap" measure, postponing inevitable surgery. The Zurich study could put to rest some of those doubts, yet reinforce others.

Six years after initial angioplasty, 79 percent of the patients had "event-free survival," defined by the authors as being alive, free of heart attacks and not having needed coronary bypass surgery. There is, however, a bleaker side to the success story. In 30 percent of the 169 patients, the affected artery became partially blocked again within six months after angioplasty. And more recurrences were observed years later. During the course of the study, repeat angioplasties were needed in 27 patients and coronary bypass surgery in 19 patients. The outcome of an angioplasty also depends on the number of vessels involved, say Spencer B. King III of Emory and his coauthors.

"[Recurrence] is a big concern . . . of great interest to us," says King. "The point is we need a more potent way to fight stenosis [blockage]." New ways to stop blockage are being tested at Emory and elsewhere, says King. He told SCIENCE NEWS those methods include using drugs to interfere with clotting and placing rigid tubes inside the artery.



NHLBI

Physicians inflate the end of a balloon-tipped catheter after guiding it through an artery in the arm or leg and into the coronary arteries. The increased pressure at the site of blockage dilates the blood vessel.

(Researchers in Switzerland and France recently reported success using stainless steel mesh to prop open arteries.)

At the National Heart, Lung and Blood Institute in Bethesda, Md., a comparison of data from the late 1970s and from 1984-85 indicates that the technique is becoming safer and more effective, says Eugene R. Passamani, an associate director for cardiology. Commenting on the Zurich study, Passamani says it is difficult to make generalizations from a small group of patients, but he calls the long-term results for the most part "reassuring." The institute is planning randomized trials to compare angioplasty with bypass surgery, says Passamani. "You can make arguments on both sides," he says. "With angioplasty, it's less invasive and the patient goes home earlier. But it can't do as complete a revascularization."

In an editorial accompanying the Zurich study report, Kenneth M. Kent of Georgetown University Hospital in Washington, D.C., says an estimated 150,000 angioplasties will be done in the United States this year. While concluding that the Zurich data will "contribute to the increasing acceptance" of angioplasty, Kent says that, until comparisons with surgical techniques are completed, decisions must be based on "incomplete information and on clinical judgment."

— D.D. Edwards