

## A major strike against stroke

For the first time, a treatment appears to have been found that can reduce the chances of subsequent stroke among persons who have already suffered one due to a ruptured aneurysm (a blood-filled bubble in a vessel). If this is indeed the case, Murray Goldstein, director of the National Institute of Neurological and Communicative Disorders and Stroke in Bethesda, Md., says, "It is a really important finding in terms of clinical care" and could potentially benefit 30,000 persons in the United States each year who suffer strokes due to a ruptured aneurysm. "This is a very important paper," says James Wood, assistant professor of neurosurgery and a stroke researcher at Emory University School of Medicine in Atlanta. "It will likely alter the preoperative and postoperative management of aneurysm patients...."

When a patient experiences a ruptured aneurysm, blood floods the brain, and nerve cells in the area die — a stroke occurs. This nerve cell death in turn can cause neurological impairments ranging from inability to speak or move to coma and death. About a third of patients with a ruptured aneurysm experience such extensive nerve cell death that they die. But even if a patient survives this initial nerve cell devastation without immediate neurological damage, blood vessels in the brain may still, during the next two weeks, go into spasm and clamp down in reaction to the hemorrhage. Then blood can't flow through them and more nerve cells in the brain don't get enough blood and die. It's this second stroke that a drug called nimodipine appears capable of preventing in many instances. Nimodipine is one of a class of drugs called calcium blockers that are able to keep calcium from entering cells; to go into spasm, cells in blood vessels need calcium from outside.

The study demonstrating nimodipine's effectiveness was conducted by George S. Allen, a neurosurgeon and biochemist with the Johns Hopkins Medical Institutions in Baltimore, along with colleagues at Hopkins and four other university centers. Within 96 hours of a ruptured aneurysm, 56 patients who survived without neurological damage got nimodipine and 60 patients who survived without neurological damage got a placebo for 21 days. During the study period all the patients were examined for subsequent neurological impairments due to blood vessel spasm. By the end of the study, eight of the 60 patients getting the placebo had suffered severe neurological impairments due to spasm such as inability to talk, paralysis, coma or death; in contrast, only one of the 56 patients getting nimodipine had.

These results, the scientists conclude in the March 17 *NEW ENGLAND JOURNAL OF MEDICINE*, "demonstrate that nimodipine significantly reduces the occurrence of

severe neurologic deficits from spasm" and, say the researchers, suggest that "patients who are essentially neurologically normal after a hemorrhage from an aneurysm will benefit from oral administration of nimodipine for three weeks after the hemorrhage."

Still other studies, Allen and his team say, are now needed to determine whether doses of nimodipine larger than those used in their investigation might be even more effective in preventing subsequent stroke among victims of ruptured aneurysms. The exploration of the effectiveness of larger doses, they point out, should be safe for patients because the dosage they used produced no serious side effects. —*J. A. Treichel*

## Widespread concern over satellite sale

The Reagan administration's proposal last week to sell to the private sector the nation's satellites for monitoring earth resources (Landsat) and weather has generated much concern and skepticism among scientists and politicians. While they express willingness to see what arrangement may be negotiated between the government and private industry, they are confused about the effects and benefits of such a sale.

The proposal follows several years of study during the Carter and Reagan administrations of turning the costly Landsat system over to the private sector. That the weather satellites might be sold as well emerged as a serious option last fall when the Communications Satellite Corp. (Comsat) proposed that it would take over the operation and development of the Landsat system if it could also purchase the nation's weather satellites. These include two geostationary satellites and two polar orbiters. Comsat would require a 15-year contract under which the government would agree to buy its data on earth resources and weather from Comsat at a guaranteed price. The government then would continue to disseminate weather information through the National Weather Service. Sale of weather data would ensure company profit during the years that it will take to develop a broader market for data from earth-imaging satellites.

At a recent hearing of the Senate Committee on Commerce, Science and Transportation, the testimony crackled with concern about the future of the weather satellites. Although the proposed sale was not the stated topic of discussion, the questions and comments encompassed the range of issues being raised in scientific circles: What effect would the sale have on the everyday lives of people in the United States? If private industry owns

and operates the satellites, would the government continue to fund the costly research and development necessary to ensure progress in short- and long-term weather prediction, and in satellite technology? Are the economic benefits claimed by the government realistic, and do they justify the commercialization of services?

Comsat asserts that the sale would save the government \$1 billion over the next 10 years. The company would operate the satellites and ground equipment and would continue to develop an "integrated environmental satellite system" called Earthstar, which would centralize satellite control and data processing.

If there are points of general agreement between industry and scientists, one is that the government must make a strong commitment to continuity of satellite operation — during a transfer to private industry, or if a sale does not occur. While uses of weather data are well known, world governments and researchers also depend increasingly on satellite images of the earth for continuous information on global changes such as tropical deforestation, soil erosion and use of agricultural lands.

Another mutual view is that the government must continue to fund the high-risk, long-term research and development that is unlikely to be pursued by a private company. A nongovernment advisory committee on land remote sensing satellites (SN: 11/27/82, p. 343) found that most proposals from the private sector provided for technical services that were "very low-keyed, and not very creative." Thomas M. Lillesand of the University of Wisconsin in Madison, a member of the committee, says, "They are using existing technology, and serving a need in the user community, but certainly are not keeping us on the cutting edge from a research standpoint."

A scientist with the National Aeronautics and Space Administration who asked not to be named said that one concern among scientists is that if the sale goes through, the price of land data will go up "dramatically," and that it is not known whether research programs will receive the added funds needed to buy the data. An advantage of the sale, he says, could be the proliferation of small companies that manipulate raw data and then sell them in specialized forms related to customers' specific interests such as minerals or agriculture.

If the administration pursues the satellite sale, congressional approval will be required. At the moment, given the fuzziness of financial and scientific detail, passage is far from certain. Senator J. James Exon (D-Neb.), echoing the sentiments of other senators participating in the recent hearing, said: "I am shocked at the proposal, and regardless of the push from the White House, it is not likely to get very far on the Hill." —*C. Simon*