MEDICINE

Drug to Replace Morphine

A new drug that relieves pain without causing addiction may replace morphine in less than a year, if approved by the Food and Drug Administration—By Faye Marley.

➤ A NEW NONADDICTING drug that can substitute for morphine has been successfully tested.

It will be available in less than a year if the Food and Drug Administration approves the drug, now called Win 20,228.

The new drug will not only prevent addiction in long-term illnesses, such as cancer, but it should cut down on illicit drug trade, Dr. Arthur S. Keats of Baylor University School of Medicine, Houston, Texas, who conducted tests on human patients, told SCIENCE SERVICE.

Morphine users do not like it, Dr. Keats said. This was found in trials on patients at the Addiction Research Center in Lexington, Ky. Because addicts do not like the drug, keeping account of every milligram will be easy. Supplies will not have to be guarded any more than penicillin or aspirin, Dr. Keats noted.

Win 20,228 was developed by Sterling-Winthrop Research Institute, Rensselaer, N.Y.

Dr. Sydney Archer of Sterling-Winthrop told SCIENCE SERVICE that how long Win 20,228 will maintain its effectiveness is not known because it has not yet been tested for tolerance. Five Veterans Administration hospitals are continuing clinical tests on patients. It is now given only by injection.

The whole problem of finding a drug to relieve extreme pain without causing addiction along with side effects has been studied for the past 80 years. One after another drug has been discovered with promise, only to be replaced by a successor.

Dr. Nathan B. Eddy, executive secretary of the Committee on Drug Addiction and Narcotics, National Academy of Sciences-National Research Council, gives a historical account in Public Health Reports 78:673, 1963, of efforts for the past 80 years to obtain a less addicting or non-addicting drug to replace morphine.

The Sterling-Winthrop compounds are especially interesting, he said. Win 20,228 has no pain-killing effect in animals, but is effective against post-operative pain in man at a dose of 30 to 40 milligrams as compared with 10 milligrams of morphine.

"Win 20,228 has not produced the bizarre psychic reactions which were troublesome with nalorphine," he pointed out. Nalorphine was developed in 1942 by the Merck Sharp & Dohme pharmaceutical company. Nalorphine did not produce physical dependence, or addiction, but its side effects have been troublesome.

Another Sterling-Winthrop compound called Win 20,740 has more potency than Win 20,228, but it will be six to nine months before a new drug application will be filed with FDA for it.

Both these new experimental drugs are structurally based on the series of chemical compounds called benzomorphans. The Win 20,228 new drug application is expected to be filed before Dec. 1, and unless more information is needed, Dr. Ralph G. Smith, FDA's acting medical director, told SCIENCE SERVICE, the drug could be approved in less than the 180 days allowed FDA for study.

Dr. Eddy points out that the addiction problem is not going to be solved overnight even if the long-sought nonaddictive pain killer without undue side effects has been found.

Such a drug will "contribute to the management" of the problem but we shall "still have the opium-producing countries with economic needs to oppose any cessation of poppy cultivation," he said.

"We shall still have the established machinery for illicit production and distribution of heroin which all efforts toward narcotics control have not suppressed. We shall have the social and psychological forces that encourage potential addicts to dose themselves with drugs."

• Science News Letter, 84:131 Aug. 31, 1963

Eli Lilly

LITTLE FROM MUCH—It will take four months to extract from this 15-ton stack of dried periwinkle leaves, the amount of chemical held in the beaker, enough to produce only one ounce of Velban now approved for treatment of leukemia in children. The huge quantities of the plant are imported from India by Eli Lilly and Company, manufacturers of the drug. (See SNL 79:181, March 25, 1961.)

MEDICINE

Shock Treats Heart Flutter

➤ THE HEART FLUTTER that grounded Astronaut Donald K. "Deke" Slayton is being treated in its more serious aspects by a new device called a cardioverter.

The direct current shock treatment is able to save the lives of persons who have been treated by drugs so long that their condition is toxic.

In other cases where patients do not respond to drugs, the electric shock treatment is used to stop the flutter, or atrial fibrillation, at the National Institutes of Health, Bethesda, Md., and in a number of hospitals.

Officials at Manned Spacecraft Center, Houston, Texas, told SCIENCE SERVICE that Maj. Slayton is not being treated for the heart flutter that kept him from the Mercury orbital flight. No decision has been made as to his future flights.

Atrial fibrillation is one of the most prevalent of the chronic rhythm disorders of the heart, a derangement with serious implications, Dr. Bernard Lown, originator of the cardioverter, points out in the New England Journal of Medicine, 269:325, 1963.

The cardioverter, produced by the American Optical Company, Buffalo, N. Y., is being used successfully, it was reported in Lancet, 2:159, 1963. In the first published work on this method in the United Kingdom, a team of doctors at King's College Hospital, London, said normal rhythm had been restored in 20 patients so treated.

Dr. Lown first described the cardioverter to the medical profession last year at the meeting of the American Society for Clinical Investigation in Atlantic City.

In the New England Journal of Medicine, with Drs. Mark G. Perlroth, Sami Kaidbey, Tadaaki Abe and Dwight E. Harken, Dr. Lown stated that "cardioversion was successful in restoring sinus rhythm" in 90% of the 50 patients treated. They did their work at Peter Bent Brigham Hospital, Boston.

In the majority of patients with atrial fibrillation, the researchers said, "cardioversion is to be preferred to the use of quinidine for restoring sinus rhythm because it is simpler, safer and more effective."

This does not mean that quinidine, in use since 1918 as the method of choice in stopping atrial fibrillation, is not still being used in maintaining the initial conversion.

The researchers reporting in Lancet were Drs. S. Oram, I. Weinbren, J. P. H. Davies and P. Taggart, with L. D. Kitchen of the cardiac department at King's College Hospital.

• Science News Letter, 84:131 Aug. 31, 1963