

MEDICINE

Abandoned Drug Is Antidote For Sleeping Powder Poison

Overdoses of Veronal and Luminal Are Counteracted By Powder From "Fish Berries" of East India

AN ANTIDOTE for otherwise fatal poisoning from overdoses of commonly used luminal, veronal and related sleeping powders has been found in picrotoxin, a drug formerly much in vogue but little used in recent years.

Two human cases in which the new treatment proved its worth and animal experiments leading to its use were reported by Drs. T. Koppanyi, J. M. Dille and C. R. Linegar, Georgetown University Medical School, to the American Association for the Advancement of Science.

Physicians will soon be able to use this new treatment in rescuing from death those who inadvertently or with suicidal intent take large doses of the barbiturate sleeping powders.

The patients on whom the new antidote was first used were both elderly persons, a man and a woman, patients of Georgetown physicians, Drs. Wm. S. Murphy and Connolly. The woman had taken luminal, the man amytal, both in very large doses, and both patients were absolutely paralyzed from the overdose of sleeping powder. The woman responded very favorably to picrotoxin, Dr. Koppanyi reported. She came out of collapse, began to move, eat, drink and even to talk, though not coherently. Unfortunately, she died of lung infections which had set in before the picrotoxin treatment had been started. Blood tests, however, showed that the amount of luminal in her body was progressively decreasing in relation to the improvement in symptoms noted following the picrotoxin treatment.

Man Seen Early

The man was fortunately seen very soon after he had taken the overdose of amytal. Picrotoxin treatment was started immediately and continued for two days. The patient progressively improved and after a final fairly large dose of picrotoxin suddenly showed what Dr. Koppanyi calls the "awakening effect of picrotoxin," began to move about, asked rational questions and from then on made an uneventful and complete recovery.

Picrotoxin, the substance which promises to save victims of overdoses of modern sleeping powders, is not suitable for treating all cases of poisoning due to narcotics, Dr. Koppanyi warned. In morphine poisoning, for example, picrotoxin produces no "awakening effect" and tends to make the condition of the subject worse. Before starting this treatment, the physician should find out whether the poisoning is due to sleeping powders like veronal or amytal, Dr. Koppanyi advised. This may be learned either from the history of the case or by performing the Koppanyi test for these compounds.

Picrotoxin is a bitter-tasting, white crystalline powder found in the famed fish berries of East India, where it got its name from the fact that the natives used it to poison fish. It is a powerful stimulant and formerly was an official drug in the U. S. and British Pharmacopoeias. In former times it was almost without exception put to the wrong use, Dr. Koppanyi explained, being used then to treat epilepsy and St. Vitus' dance, conditions characterized by convulsions which picrotoxin itself has a tendency to produce. It was therefore taken out of the pharmacopoeias and discarded as a useless remedy.

Wisconsin Research

Merit for rescuing it from oblivion and suggesting its new use as an antidote for a certain type of poisoning belongs to Dr. A. L. Tatum and associates of the University of Wisconsin, Dr. Koppanyi declared. These investigators first showed that picrotoxin shortened the recovery time of animals poisoned by the veronal group of sleeping powders.

Dr. Koppanyi and associates showed among other things that very large doses of picrotoxin may be necessary to counteract the effect of the veronal-amytal type of sleeping powder. In very severe poisonings it is necessary to give one animal a dose of picrotoxin large enough to cause convulsions in 300 normal animals. Yet the poisoned animals

are so depressed by the sleeping powder that they hardly show any twitches under these terrific doses of picrotoxin. This shows not only that picrotoxin is an effective antidote but that it is safe to use in these cases.

Even more dramatic than its life-saving effect is the "awakening effect" of picrotoxin, Dr. Koppanyi said. At the meeting, he showed moving pictures of animals to demonstrate this. These animals were poisoned not by very large doses of the sleeping powders, but had had enough to produce deep sleep and unconsciousness. They were lying perfectly helpless on the floor. When moderate doses of picrotoxin were injected, they suddenly awoke and began to move about in lively fashion.

Tests also showed that picrotoxin in some cases actually increases the rate at which amytal and similar sleeping powders are destroyed in the body.

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SEISMOLOGY

Earthquakes Reproduced With "Electric Eye"

ENGINEERS now have a new weapon with which to combat one of their most powerful enemies—the earthquake. A machine devised at the



DUPLICATES EARTHQUAKES

This machine makes it possible for the first time to duplicate in the laboratory the motions of destructive quakes directly from seismograph records. In the foreground Arthur C. Ruge, research associate, who designed the machine, is adjusting the optical system and electrical "thinking" device, which has an electric eye that follows the wavy outline of the shadowgraph of an earthquake record. The white shadowgraph shown here is a seismograph record of the Long Beach, Calif., quake of 1933.