

A new possibility in the search for an effective, non-habituating analgesic drug is lysergic acid diethylamide (LSD). Heretofore used only in psychic experiments and in studies of schizophrenia, the hallucinogenic drug now is being used experimentally to relieve pain.

The studies are being conducted by Eric Kast, MD, at Cook County Hospital in Chicago, in the department of anesthesiology (Vincent Collins, MD, chairman). Kast is attending in anesthesiology at the hospital and is assistant professor of medicine and psychiatry at Chicago Medical School. Collins is associate professor of surgery at Northwestern University Medical School.

Kast said the drug has been used to date on about 300 patients, most of them in the pre-terminal stages of cancer.

Results are both encouraging and puzzling. Encouraging—because LSD relieves pain much longer than other drugs; puzzling—because many of the patients declined a second administration.

The action of LSD probably is on the enzymatic basis, Kast said. A minute dose (25 mcg) can produce a reaction; absorption from the gastrointestinal tract is immediate, and the reaction is "more or less an all-or-none phenomenon."

The two drugs with which LSD was compared, dihydromorphinone HCL and meperidine HCL, decreased pain for two to three hours, after which pain slowly increased. With LSD, pain relief lasted as long as 13 days.

Initially, each patient received either 2 mg of dihydromorphinone or 100 mg of meperidine. Upon complaint of pain, and at least six hours later, he received the other drug.

At least six hours after administration of the second drug, and upon complaint of pain, 100 mcg of LSD were administered.

After the first two drugs, patients were observed for three hours, at 20 minute intervals. Starting immediately after LSD administration, patients were observed indefinitely at regular intervals.

Observation of the first 50 patients of the study showed that the mean number of pain-free 20-minute periods for meperidine was 5.7. For dihydromorphinone, the mean number was 8.4. For patients on LSD, the mean number of painless 20-minute periods was 95.6.

Both degree and duration of pain relief were greater, according to Kast. No medical contraindications were observed, he said. He described the initial reaction to LSD as consisting of fine tremors, perspiration, pupillary dilatation, and a panicky feeling.

About 90 minutes later the patient usually experiences the more highly publicized effects of the drug. He has a feeling of greatly heightened perception, gregariousness, experiences unreal visual images, and a feeling "that the world is wonderful," according to Kast.

The acute reaction lasts about eight to twelve hours, with pain free periods lasting up to two weeks.

"During this time the patients had a changed approach to their morbid condition and displayed a certain abandon, not usually seen in desperate situations, but most beneficial to the patients' psychic economy," the physician said.

Effects vary greatly from patient to patient. Kast said his patients experienced fewer visual distortions than the incidence reported for normal persons who have taken the drug experimentally. He theorized that this probably is because gravely ill patients are intensely preoccupied with their disease process.

Nevertheless, while under the influence of LSD, the patients showed unusual detachment from concern with their physical condition. Many, when asked whether they still had pain, answered that they did, but that it was unimportant.

This attitude appears to be the result of two effects of LSD, according to Kast. First, the drug "lessens the need to maintain bodily integrity and produces certain obliterations of the ego boundaries." This, he states, facilitates the "re-integration of the self-image by exclusion of the painful part. Expression of aggressive fantasies is thus facilitated and tension relieved."

Second, he said, the drug makes it impossible for the patient to select a particular sensory input, such as pain, and concentrate upon it. Instead, a vast spectrum of sensations occupies him. Although he may focus for a brief moment on his pain, he will quickly move his attention on to other matters.

Under LSD, Kast explained, a single visual impression, thought or fantasy, may take precedence over the pain input, "usually considered in western civilization as being of vital

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survival value."

The same psychic effects that relieve pain appear to discourage many patients from taking the drug a second time.

Of the first 50 patients, eight refused a second administration. Thirty expressed indifference, and only 12 expressed a desire to take it again. Figures for the succeeding patients are similar, Kast said.

Some of the patients have described the LSD treatment as "hard work." Kast believes this drug experience requires a great amount of "psychic energy."

"Ego control, and to a certain extent, super-ego control, of impulses and drives seems threatened, and the patient has to exert much energy to maintain his personality integration."

If the psychic effects of LSD can be attenuated and the drug made more acceptable to patients, LSD may become an important analgesic, Kast believes.

In another study of LSD, Kast is using the drug as a pre-anesthetic agent. In the nine cases studied to date, no adverse side effects have been observed. The most important finding, Kast said, is that when LSD was used as a pre-anesthetic, no analgesics were needed after surgery for up to 36 hours.