

## Brain peptides as psychiatric drugs

During the past several years, there has been growing excitement over naturally occurring brain proteins that, when injected as drugs into animals or humans, dramatically alter emotions and behaviors. These proteins, which include the enkephalins, endorphins and certain amino acid stretches of some pituitary gland hormones, are all derived from a larger parent protein in the brain—betalipoprotein (SN: 7/2/77, p. 6).

When injected into rats, Met-enkephalin has been found not only to relieve pain but also to speed up learning (SN: 7/23/77, p. 59). MSH (melanocyte-stimulating hormone), a short amino acid stretch in the pituitary hormone, appears to enhance attention and improve memory, when given to mentally retarded individuals (SN: 9/25/76, p. 202). The alpha-, beta- and gamma-endorphins have been reported to modify schizophrenia-like symptoms such as physical rigidity, negativism, excitement and stupor when injected into rats (SN: 10/30/76, p. 282). Now there is another provocative development in the brain protein-behavior story. Injected beta-endorphin has been found both safe and psychologically active in a small group of depressed and schizophrenic patients who had not been helped by conventional drugs.

This finding was reported at the recent World Psychiatric Association Congress in Honolulu by Nathan S. Kline, a psychiatrist and director of the Rockland Research Institute in Orangeburg, N.Y., and by Heinz Lehmann, professor of psychiatry at McGill University in Montreal. Their results also appear in the September ARCHIVES OF GENERAL PSYCHIATRY.

Kline and Lehmann gave beta-endorphin to three schizophrenics and to three depressives who did not respond to antipsychotic drugs. All patients gave informed consent, as did their families, to these experimental injections. Each patient was briefly interviewed and then given a placebo via an indwelling catheter. After the placebo came a second psychiatric interview. Finally, the patients received 1.5 milligrams of beta-endorphin and were reinterviewed periodically during the next few days. Twelve days later the trial was repeated, with three of the patients receiving larger doses of beta-endorphin—3 mg to 9 mg—instead of 1.5 mg. The beta-endorphin infusions helped all three schizophrenics and two of the three depressives, Kline and Lehmann report. The two depressives showed rapid mood uplifts after receiving the drug. The three schizophrenics experienced a mild euphoria lasting hours or even days.

In addition to the six psychiatric patients, a seventh subject took beta-endorphin in order to serve as an expert

control. He was Edward Laski, assistant professor of psychiatry at Albert Einstein College of Medicine in New York City. After being injected with 9 mg of beta-endorphin, Laski experienced a carefree buoyant mood that lasted five hours.

Although this small preliminary trial hardly proves that beta-endorphin, or any of the other brain proteins for that matter, can help psychiatric patients, it does show that beta-endorphin is safe for such patients and that it is psychologically active in humans. □

## Healthier adjustment for Vietnam POWs

A prisoner of war's nightmares do not end with his release. Follow-up studies of returned World War II and Korean POWs have shown long-term psychiatric and physical problems that hamper, and in some cases prevent, the men's readjustment to American society and to their families.

But it appears that returned American prisoners from Vietnam are having fewer problems than their earlier counterparts, and in many cases are faring even better than their fellow servicemen who were not captured. The "admittedly unexpected" findings come from an ongoing study of the 138 Navy POWs returned from Vietnam during the three-phase, 1973 negotiated return. The latest findings were reported at the recent World Congress of Psychiatry by John A. Plag, director of the Navy's Center for Prisoner of War Studies in San Diego.

Plag and his colleagues thus far have compared 78 POWs to 78 nonprisoner Navy pilots, matched by age, rank, occupation, marital status, years of schooling, number of flight hours, and other characteristics. Each man has undergone extensive yearly examination.

The researchers have found "pronounced" differences between the two groups. But it is the controls (non-POWs) who during the last few years are "manifesting more total diagnoses, suggesting a less healthy group," Plag says. The POWs are showing significantly less pathology in six health areas: Endocrine, nutritional and metabolic processes; nervous system and sense organs; the circulatory system; the genito-urinary system; the musculoskeletal network; and general, ill-defined symptoms and conditions. Plag traces much of the slightly but not significantly higher emotional problem rate of POWs to the high incidence of marital problems among returning prisoners. The POW divorce rate is two to three times higher than that of controls, he reports.

The findings are indeed "contrary to expectations," says Plag, who offers several explanations revolving around "a set of circumstances peculiar to the Vietnam POW experience." He notes that many of the POWs were overweight at the time of their capture, and while most

were not malnourished during confinement, the reduced rations—"undoubtedly lower in cholesterol and fat than the average American diet"—may actually have been healthful to them. "Many POWs fell to their ideal weight and remained at that level," he notes.

In addition, alcohol was generally unavailable, and cigarettes were administered, but only in very limited quantities. Many POWs engaged in a routine of calisthenics to maintain muscle tone, says Plag. Also, in addition to maintaining their structure of military organization, they benefited from a standard military practice, receiving regular promotions while in captivity.

"In contrast," Plag reports, "control group members usually had access to an abundant diet—high in animal fat—to tobacco, to alcohol, and experienced the stresses of their jobs where only excellent performance was rewarded by promotions."

However, those factors still do not explain why the Vietnam POWs have fared better than those of World War II and Korea. Plag and his fellow researchers believe this has occurred because the latest prisoners were predominantly officers and better able to handle the incarceration experiences. About 90 percent of the Korea and World War II prisoners were enlisted men of ground force divisions, while the vast majority of Vietnam POWs were commissioned officers—primarily pilots who were shot down, says Plag. Only 1 of the 138 returned Navy POWs was not an officer, while only 3 or 4 of the 325 Air Force returned prisoners were enlisted men, he says.

"There is a great difference in the way officers, as opposed to enlisted men, handle the captivity experience," Plag says. He has found that officers generally feel they have much greater control over situations and believe even while in a POW camp that they are masters of their own fate. "Most Navy pilots are way to the right politically, almost to the point of being John Birchers—this is commonly known. They feel they can pull themselves up by their own bootstraps," he says. In contrast, many enlisted men suffer from what Plag calls "give-up-itis syndrome," and perceive captivity with severe stress, which in many cases carries over into post-POW years. "They roll over and die," he says.

The healthier adjustment of returned POW officers is indicated by numerous post-World War II and Korea studies and most recently by an eight-year follow up of *USS Pueblo* crew members, held captive by North Korea in 1968. The *Pueblo* prisoners, primarily enlisted men, have shown "many more medical problems" than active navy officers.

"Our findings to date would strongly suggest that men perceive the stress of captivity in diverse ways," Plag says. For some, he concludes, "the long-term effects may be more positive than negative." □