

# BEHAVIOR

## Sex hormones and depression

Recent reports concerning the untreatable, irreversible neurologic damage caused in patients who have been treated with major tranquilizers for long periods of time cannot be ignored, says Turan Itil of the New York Medical College. His concern is for the depressed patients who are treated with antidepressant drugs, which alleviate the symptoms but perhaps not the causes. Instead, says Itil, psychiatric research should return to investigation of the effects of sex hormones on depression—a field of research that almost died out in the 1950's with the introduction of fast-acting psychoactive drugs.

Following his own advice, Itil has achieved some promising results in clinical trials of two hormones—mesterolone, a male sex hormone similar to androgen, and cyproterone acetate, an antimale hormone traditionally used to treat sexual hyperactivity in males. A group of severely depressed men were given mesterolone for up to four weeks. They showed improvement in mood, alertness, memory, concentration and psychomotor performance. Cyproterone acetate was used to treat female patients suffering from severe premenstrual tension, depression and irritability. Daily dosages of the hormone were administered beginning seven days before the onset of menstruation. A marked improvement was noted in 80 percent of the women. No side effects were seen in either experiment. "Sex hormones," says Itil, "are the body's own natural substances. If we can discover a natural substance that can actually cure depression, we can also discover the cause of depression."

## Depression and sex hormones

According to the World Health Organization, nearly three percent of the world population, or 100 million people, suffer from clinically significant depression—and the situation is getting worse. Many factors, including increased life spans and changing life-styles, are responsible for the increase, but some researchers have suggested that the hormones used in oral contraceptives may also be a cause of depression.

Assen Jablensky, a Bulgarian mental health researcher with WHO, says the medical profession should pay close attention to the link between mood states and oral contraceptives. "Depressive symptoms," he says, "may well be a serious side effect of these contraceptives, but this is difficult to evaluate. Several years more study with large-scale control trials are needed to reach conclusions."

Patrick Lowe of WHO's reproduction unit doubts the validity of studies that suggest a link between depression and hormones. Like all depressed patients, he explains, women taking birth control pills tend to excrete less than normal amounts of certain amino acids. The reason for this similarity, he says, is not known, but because of it "people jump to the assumption that oral contraceptives cause depression." He admits there may be a link but says, "I do not think it is as definite as some people would like to make it because women get depressed anyway, whether they are on the pill or not."

## Depression and the computer

It often takes time for a patient to build up confidence in a therapist. Not so with a computer, say researchers at the University of Wisconsin's Psychiatric Research Institute in Madison where depressed patients are interviewed by computer. Patients read the questions and punch in the proper answers. Therapists get vital information on how well or poorly patients are responding to treatment. Not only is the computer objective, patients seem to enjoy using it and tell it things they might not tell a therapist.

# BIOMEDICINE

## Serotonin and depression

Serotonin is one of the crucial nerve chemicals in the brain. Evidence that a disturbance in serotonin causes depression has accumulated in recent years, but the findings are contradictory. Now a team of Swedish investigators reports that there may be two kinds of depression, only one of them characterized by a disturbance in serotonin.

Marie Asberg of the Karolinska Institute and her colleagues developed a highly sensitive technique to determine concentrations of 5-HIAA (5-hydroxyindoleacetic acid) in the cerebrospinal fluid of 68 depressed patients. This is the metabolite (breakdown product) of serotonin. They found that 29 percent had little of the product, whereas the rest had a lot. Although there were no differences in the overall severity of depression between the two groups of patients, there was a significant correlation between the concentration of 5-HIAA and the severity of depression in the patients with little 5-HIAA. This finding, they report in the Feb. 6 *SCIENCE*, "suggests the existence of a biochemical subgroup of depressive disorders, characterized by a disturbance of serotonin turnover."

## Male breast cancer

A familial tendency toward breast cancer is common among women. But it can happen to men too on rare occasions. The occurrence of male breast cancer in two families is reported in the Jan. 3 *LANCET* by Richard B. Everson and his team of the National Cancer Institute.

Breast cancer developed in three brothers (family A) and in a man, his father and paternal uncle (family B). The victims did not engage in any unusual occupations or have excessive exposure to toxic chemicals. However, an overproduction of estrogen could be found in some other males in the families, suggesting that a defect in estrogen production may have triggered their cancer.

## Brain nerves and high blood pressure

Adrenaline-secreting nerves are known to play a role in the regulation of blood pressure and in the expression of some forms of high blood pressure. Recent work has shown the presence of such nerves in the brain, especially in the brain stem. Juan M. Saavedra, Horst Grobecker and Julius Axelrod of the National Institute of Mental Health have investigated changes in an adrenaline-forming enzyme in the brainstem of genetically hypertensive rats and in rats made hypertensive by a chemical. They found that there was a marked elevation of the enzyme's activity in the brainstem of both groups of animals, and also a reduction in their blood pressure.

Such enzyme-inhibitors "may provide a new class of drugs for the study and treatment of some forms of hypertension," the investigators conclude in the Feb. 6 *SCIENCE*.

## New animal model for slow-virus disease

One of the most mysterious groups of diseases are the so-called slow-virus diseases, which invariably lead to nervous system damage and death. One of the best ways investigators can find which viruses are responsible and how they do their damage is to transmit the human slow-virus diseases to animal models. A convenient model has now been found for one of these diseases—Creutzfeldt-Jakob disease—by Elias E. Manu- elidis and his team at Yale University School of Medicine. As they report in the January *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES*, they have managed to transmit the disease to guinea pigs, an unprecedented achievement.