
Encouraging efforts to kick cocaine

A national "epidemic" of cocaine abuse has received considerable attention over the past decade. Of the over 4 million Americans who use the drug one or more times per month, it is estimated that 10 percent will go on to heavy, uncontrollable cocaine use. But until recently, cocaine abuse treatment has attracted little scientific attention.

Last week, two researchers reported encouraging data from some of the first studies to chart the effectiveness of non-hospital cocaine treatment programs. One investigator says that for those who want counseling, group-based peer counseling similar to that used by Alcoholics Anonymous helps many long-term cocaine abusers to stay off the drug for up to two years. There is also evidence, says the other, that some people hooked on cocaine require antidepressant medication in addition to individual and group psychotherapy.

An intensive program that stresses practical ways to achieve abstinence appears to help a large majority of cocaine abusers under study, said Arnold W. Washton at a press seminar in Washington, D.C., held by the Alcohol, Drug Abuse and Mental Health Administration. Washton, of The Regent Hospital in New York City, and co-worker Mark S. Gold of Fair Oaks Hospital in Summit, N.J., followed 205 chronic cocaine abusers, most of whom were white, middle-class males with intact families and good jobs. Treatment included signing a contract to stay away from all drugs, undergoing urine tests several times weekly and attending cocaine recovery groups and supportive counseling sessions. After 6 to 12 months, treatment continued according to each patient's needs.

A big problem appears to be getting people to stick with treatment. During the first month of treatment, 78 of the subjects dropped out of the program, says Washton. But 83 percent of the remaining patients have not used cocaine or other drugs for almost two years, he adds. The more time patients spent in treatment, the more likely they were to remain abstinent. Washton is now following about 150 cocaine abusers with low-paying jobs and less stable families to see if they respond to the same treatment.

There is also evidence that the antihypertensive drug clonidine eases the craving for cigarettes, alcohol, opiates and possibly cocaine (SN: 11/17/84, p. 310). But it is too early to tell if any medication will dampen cocaine withdrawal or reduce the number of people who drop out of treatment, says Gold. He is now studying the effects of several drugs on cocaine craving.

"Our data on a group-based peer recovery program provide a baseline to help

decide whether additional treatments offer any more help," notes Gold.

Washton and Gold have conducted a "nice clinical study," says Herbert D. Kleber of Yale University, "but their data provide a baseline only for the selected population they looked at." In a presentation at the National Institute of Mental Health, Kleber said that he and his colleagues have observed a comparable recovery rate among cocaine abusers treated with an antidepressant drug and psychotherapy. The Yale researchers are now studying cocaine abusers who receive psychotherapy and additional, random assignment to antidepressant, lithium or placebo treatment. Cocaine investigators, holds Kleber, have not yet clearly defined subjects according to their severity of abuse, personal background and reasons for entering treatment.

—B. Bower

PAHlution in interstellar space

Over the last decade and a half, observers have identified numerous chemical compounds in the clouds that pervade interstellar space. Starting from single elements and the simplest compounds, the list has grown by the addition of more and more complicated compounds. Now three California researchers suggest the presence of a mixture of very complicated compounds, polycyclic aromatic hydrocarbons (PAHs).

This science of astrochemistry proceeds by examining the spectra of objects in the sky for emissions or absorptions of radiation characteristic of different chemical substances, either fairly sharp wavelengths (lines) or short ranges of wavelengths (bands). Many such spectral features have been detected in the sky long before they were identified with particular substances through comparison with spectra obtained in the laboratory.

L. J. Allamandola and A. G. M. Tielens of NASA's Ames Research Center at Moffett Field, Calif., and J. R. Barker of SRI International in Menlo Park, Calif., consider the so-called unidentified infrared emission bands, eight bands ranging in wavelength from 3.3 to 11.3 micrometers, as well as a continuum of radiation over the range 1 to 5 micrometers. Other astrophysicists have suggested that PAHs carrying fewer hydrogen atoms than the total number of sites in their structure where hydrogen might be bound could be responsible for these unidentified infrared features. Allamandola, Tielens and Barker manage to identify the features with energy associated with the vibrations of various parts of the structure of such compounds, provided a mixture of PAHs is present—or, in their own words in the March 1 *ASTROPHYSICAL JOURNAL LETTERS*: "auto exhaust along the Milky Way." —D. E. Thomsen

Mysteries surround infant brain damage

When a baby is born with mental retardation or other neurological disorders, such as cerebral palsy or epilepsy, the question parents most often ask is "What caused it?" The answer, according to members of a panel on pre- and perinatal factors associated with brain disorders, most often is "We don't know."

"For the vast majority of infants with these disorders, we can't find a single cause," says panel chairman John Freeman of Johns Hopkins Hospital in Baltimore. "They may be due to metabolic, viral or genetic factors, rather than pre- or perinatal problems."

The panel was convened in Washington, D.C., this week by the National Institute of Child Health and Human Development and the National Institute of Neurological and Communicative Disorders and Stroke. It concluded that, though few specific causes and effects have been identified, there are thresholds for neurological insults beyond which damage may result. For example, a fetus or infant can tolerate hypoxia, decreased blood flow to body tissues, up to a certain point, but beyond that point damage often results. Thresholds for damage also depend on the individual's own reserves and previous damage, as well as the postnatal environment.

Hugo Moser, president of the Baltimore-based John F. Kennedy Institute for Handicapped Children, found that prenatal factors, such as chromosomal abnormalities and viral infections, are important causes of severe mental retardation, whereas mild retardation is affected more by the postnatal environment.

For cerebral palsy, a motor dysfunction often accompanied by mental retardation, events during labor and delivery are more important risk factors than pre- and postnatal events, the panel says. Asphyxia—both the inability of the infant to breathe and reduced oxygen supply to the brain—is the most important cause, but the threshold beyond which it causes damage is not yet known, according to the panel.

The panel cited prematurity and low birthweight as the factors most highly correlated with neurological disorders. As highly technical intensive care is applied to such high-risk infants, physicians and health care workers face a sort of medical catch-22: If these infants survive, they are likely to have neurological problems, so should an attempt be made to save them?

Asked whether the panel's report would help clear obstetricians of some blame in childbirth malpractice suits, audience member and President of the American College of Obstetricians and Gynecologists Luella Klein answered yes. "It shows," she says, "that most childhood neurological problems are not related to events during labor and delivery." —D. D. Bennett