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# Physician's Alcohol NEWSLETTER



JUNE 1978

## Decreased testosterone studied in alcoholics

Chronic long-term alcohol abuse acts directly or indirectly at the level of the pituitary and not the gonad in decreasing testosterone secretion in men and rats, Charles D. Lox, Orene Peddicord, M. W. Heine, and F. S. Messiha of the Departments of Obstetrics, Psychiatry, and Pathology, Texas Tech University School of Medicine told the 2nd Annual Conference on Alcohol held in El Paso, Texas, on February 24-25, 1978. The team studied 14 male inpatients who were admitted for alcohol detoxification. Prolactin levels were all within normal limits, but blood testosterone was found to be below normal in 42% of the men. However, there was no statistically significant relationship between testosterone and blood alcohol, indicating that the circulating levels of blood testosterone were independent of the concentration of blood alcohol.

Also at the conference A. Perin and A. Sessa of the Institute of General Pathology, University of Milan, reported that the impairment of protein synthesis by ethanol in the liver and by acetaldehyde in several extrahepatic tissues may play a role in the pathogenesis of alcohol toxicity. The results of their studies also demonstrate that co-substrates and amino acids can reduce the effects of ethanol and acetaldehyde on tissue protein synthesis.

M. T. Koptezsky, M. Hughes, and C. Barnes of the Department of Physiology, Texas Tech University School of Medicine, reported tests that seem to confirm the hypothesis that the altered sensitivity to barbiturates and alcohol at high altitude has more to do with the adaptive changes in the tissues than with the simultaneous lack of oxygen. There is little doubt that the rat cardiac muscle tested is adapted to altitude hypoxia. Therefore, under normal oxygenation the only differences in the reactions to drugs must be due to differences in the properties of the tissues themselves. As a working hypothesis, the authors suggest that this phenomenon is due to adaptive changes in the cellular membrane.

## Triumphs of naval alcoholism program recounted at Medical-Scientific Meeting in St. Louis

The U.S. Navy has developed a successful alcoholism treatment program, several Navy officials reported to the initial plenary session of "Currents in Alcoholism," the 9th Annual Medical-Scientific Meeting of the National Alcoholism Forum, held May 1-3 at St. Louis. The meetings were jointly sponsored by the National Council on Alcoholism, the American Medical Society on Alcoholism, and the Research Society on Alcoholism.

Navy Surgeon-General Vice-Admiral W. P. Arentzen hailed the modern Navy program and its attention to family concerns. The Navy's 22 alcohol rehabilitation facilities meet patient needs and increasingly those of the alcoholic's families as well.

## Sensitivity to ethanol linked to acetaldehyde

Biological sensitivity to ethanol observed in some individuals and in some racial groups may be related to acetaldehyde concentrations in those individuals, Arthur R. Zeiner, Ph.D., of the University of Oklahoma Health Sciences Center told the National Drug Abuse Conference, held in Seattle, April 3-8. The exact mechanism for the sensitivity has not been worked out yet. However, the data relating to the disulfiram-alcohol reaction and the biological sensitivity to alcohol indicate that under both conditions the physiological reactions can be characterized by: facial flushing, increases in heart rate, decrease in blood pressure, increases in cardiac output, increases in rate and depth of respiration, and increases in digital pulse wave amplitude changes.

• Carl Pinsky, Ph.D. et al. from the Department of Pharmacology and Therapeutics, University of Manitoba, reported on mice studies that indicate that ethyl alcohol and possibly its metabolic product acetaldehyde can interfere with central endorphin.

• A hospital-based employees alcoholism program has been instituted at the Montefiore Hospital and Medical Center in New York City, according to Roger S. Mazze, Ph.D., and William Schneider, M.D., of the Albert Einstein College of Medicine. Over a one-year period, of the 120 employees (of a staff of 7,000) identified as alcoholic, more than 20% had participated in classroom sessions. More than 50% were identified as a result of direct referral from a program participant.

Captain Stuart Brownell, Director of the Navy's Alcoholism Prevention Division, showed that follow-up could be analyzed by the patient's age. In a recent analysis of 3,000 patients he found that those over 25 had an 84% recovery rate after two years, and an 82% recovery rate after three years; while those under 25 had a recovery rate of 50% after two years, and 46% after three.

Joseph J. Zuska, M.D., reported on the beginnings of the Navy program and the ways in which the resistance of a large military-industrial complex to dealing with a dependency-type illness were overcome. The major cause of the gradual acceptance of the program among naval commanders was the improved behaviors of the recovering alcoholics. Work performance improved, unauthorized absences decreased, and the recovering alcoholics began to take shipmates to AA meetings or refer them to the nearest center for treatment.

Captain Joseph A. Pursch, Chief of the Alcohol Rehabilitation Service of the Long Beach (California) Naval Regional Medical Center, recently in the news as Mrs. Betty Ford's physician, described the two-week physician training course in alcoholism and the attitudinal changes that resulted, including the recognition among 9% of the doctors that they were themselves alcoholic. There is evidence that the attitude changes continue after the course: more patients are referred for treatment; the physicians continue to consult with the staff, and attend alcoholism seminars, for instance.

## Alcohol and Nutrition

In the plenary session on "Alcohol and Nutrition," Craig J. McClain, M.D. et al. from the Departments of Medicine and  
*(Continued on page 3)*

## EDITORIAL

### PAN's Final Issue

As he embarks on a three-month sabbatical, your editor has much to contemplate. *Physician's Alcohol Newsletter* was born 12 years ago, and in that time there has been much advance in our knowledge about alcoholism, and even an improvement in death rates for cirrhosis. Many people with the disease have been helped, the many critics still decry the ineffectiveness of modern methods. The debate will go on.

We regret the external decisions that have caused this interruption in the flow of news to our readers. We want to thank the Christopher Smithers Foundation for its generous backing for the entire dozen years, the members of AMSA who have supported us with part of their dues and have funded this entire last issue, and to those NCA affiliates that have distributed PAN to physicians in their communities.

Other sources of funding are now being explored, and the editor would welcome comments about PAN from a reader's point of view. Write to: Frank A. Seixas, M.D., 2 Summit Drive, Hastings-on-Hudson, NY 10706.

Many people have helped in the challenging and rewarding task of producing PAN over the years. Special thanks are due to our associate editors for their efforts, and to Fred Zeserson and Morgan Press for their assistance in the early years. Thanks in particular to our current staff, Carol Levine and Bonnie Baya, and to Intergraphic Technology, Inc., our current printers. FAS

### Alcohol withdrawal symptoms transferred by blood transfusion

Alcohol withdrawal symptoms can be transferred to a "teetotaler" by simple blood transfusion. The cause might be a stimulant factor or factors circulating in the alcoholic's bloodstream.

Kenneth Blum, Ph.D. and Arthur H. Briggs, M.D. of the Department of Pharmacology, University of Texas, have found that the convulsions induced by ethanol withdrawal in experimental mice can be transferred to mice never exposed to ethanol by a simple transfusion of cardiac blood. The transfer, they noted, can be effected by either blood plasma or crude blood cells, but the effect is greatest when cells are used. Dr. Blum, who presented their findings at the 62nd Annual Meeting of the Federation of American Societies for Experimental Biology held in April in Atlantic City, commented, "These findings may have important clinical relevance and provide the basis for developing a rational approach to treating alcohol withdrawal." He and Dr. Briggs believe that if scientists can characterize the transferable factor or factors responsible for withdrawal convulsions, they may better understand how alcohol dependence, tolerance, and withdrawal work.

### Workshop Discusses Ethnicity, Class, and Alcohol Use

A Workshop on Ethnicity, Class, and Alcohol Use was held at Brown University, March 20, 1978. The goal of the workshop was to open new channels of communication among a small group of multidisciplinary investigators who have recently been studying ethnicity, class, and/or alcohol use, among various populations in the United States.

Anthony Thomas (Brown University) reported on his observational studies of all public drinking establishments in a small city in New England, and outlined a detailed typology of them. He offered an interpretation (in terms of functional "sociability") of the different kinds of behavior that characterize one type of establishment, which is generally frequented by men of a narrow range of socioeconomic classes.

Andrew Greeley and William McCready (National Opinion Research Center, University of Chicago) reported on a mail-survey of socialization, assimilation, drinking patterns, and drinking problems, among more than 1,000 families in five "ethnic groups" (Irish, Italians, Jews, Swedish Protestants, and English Protestants) in four major American cities. As invited discussant of both papers, Richard Fox (Duke University) underscored that differences in the preconceptions of those researchers are at least as important as their differences in methodology, and warned against the simplistic dialectic of "social drinking" as contrasted with "problem drinking." He also expressed concern about the tendency of some social scientists to focus on ethnic populations almost as if they were isolated entities, with little regard for links to political, economic, and other more encompassing institutions that significantly affect what those people can do.

Andrew Gordon (Brown University) outlined ways in which beliefs and behaviors about drinking and about men's roles have changed among a Spanish-speaking group who recently migrated to a New England city from a Caribbean nation. In contrast to many other groups of rural-to-urban migrants, they appear to be drinking less and having fewer drinking problems than before.

Joy Leland (University of Nevada-Reno) described the ethnoscientific approach she is using among Native Americans in Nevada, to discern the ways in which women cope with male heavy-drinkers and alcoholics.

The workshop was organized by Andrew Gordon and Anthony Thomas, postdoctoral fellows in a NIAAA-sponsored research-training program at Brown University. It was jointly sponsored by the Department of Anthropology, and Program of Medicine Division of Biology and Medicine, of Brown University; Division of Substance Abuse, Department of Mental Health, Retardation, and Hospitals, of the State of Rhode Island; and the United States Brewers Association.

## MEETINGS

SEPTEMBER 3-8—XXXII International Congress on Alcoholism and Drug Dependence, Warsaw, Poland. The overall theme of the congress will be "Societal Responsibility in the Reduction of Demand for Alcohol and Other Drugs." For information, write International Council on Alcohol and Addictions, case postale 140, Lausanne, Switzerland.

SEPTEMBER 17-22—3rd World Conference of Therapeutic Communities, Rome, Italy. For information, write ICAA, address above.

SEPTEMBER 29-OCTOBER 1—3rd National Conference on the Impaired Physician, Sheraton Ritz Hotel, Minneapolis. Sponsored by the AMA and the Minnesota State Medical Association. For information, write AMA, 535 North Dearborn Street, Chicago, IL 60610.

NOVEMBER 30-DECEMBER 1—"Phenomenology and Treatment of Alcoholism," a continuing education course presented by the Department of Psychiatry, Baylor College of Medicine, to be held at the Shamrock Hilton Hotel, Houston, Texas. For information, write Fred M. Taylor, Director, Office of Continuing Education, Baylor College of Medicine, Texas Medical Center, Houston, TX 77030.

### AMA newsletter on impaired doctors

The AMA has introduced a newsletter for the exchange of information among those interested in the impaired physician problem. The newsletter will be published quarterly and distributed on a complimentary basis to medical society leaders, impaired physician committee members, and others who ask to be on the mailing list. Write to: AMA Impaired Physician Newsletter, Department of Mental Health, AMA, 535 North Dearborn Street, Chicago, IL 60610.

## BOOKS

**The Drinking Woman.** By Edith Lynn Hornik. With a Foreword by Frank A. Seixas, M.D. Chicago: Association Press, 1978. \$8.95. Available from Publication Division, National Council on Alcoholism, 733 Third Avenue, New York, NY 10017.

An explanation of the special problems of women who are problem drinkers, based on a series of interviews in half-way houses, women's groups, and with individuals.

## Further reports from St. Louis Meetings

(Continued from page 1)

ophthalmology, University of Minnesota and the Minneapolis VA Hospital reported that a study of alcoholics with and without liver disease showed that deficiencies of zinc and vitamin A may play a role in the night blindness and hypogonadism of some chronic alcoholics. Combining treatment, including zinc, vitamin A, and abstinence, is appropriate in addressing night blindness and hypogonadism of alcoholics.

Contrary to prevailing opinion, ethanol decreases acid secretion in the gastric mucosa in experiments conducted by Linda Shanbour, Ph.D. of the Department of Physiology, University of Texas Medical School at Houston. It also inhibits pancreatic secretion of water bicarbonate enzymes. On the other hand, glucagon secretion doubled after ethanol pretreatment given orally, and synergistically increased glucagon-mediated levels of hepatic cyclic AMP. Diarrhea in alcoholism could be related to a demonstrated decrease in active transport of sodium and other substances in the jejunum with ethanol treatment.

### Emergency Room Treatment

The plenary session devoted to "The Alcoholic in the Emergency Room" was chaired by Dr. Jasper Chen See who distributed guidelines for emergency room alcoholism evaluation developed by the State of Pennsylvania.

David R. Boyd, M.D.C.M. of the Division of Emergency Medical Services, HEW, reported on the results of the passage of the Emergency Medical Services System (EMSS) Act of 1973. Congress provided the mechanism and funds for communities to develop regional EMS delivery systems across the nation. Some 15 component requirements have been identified to assist system planners, coordinators, and operators.

These are: manpower, training, communications, transportation, facilities critical care units, public safety agencies, consumer participation, accessibility to care, transfer agreements, standard medical record keeping, consumer information and education, evaluation, disaster linkage, and mutual aid agreements.

Joel C. Robertson, Pharm. D., of the East Michigan Emergency Medical Service described the regional system developed in a 14-county area. Categorization criteria for the purpose of evaluating a hospital's capabilities and function in the alcoholism field were developed and implemented, pre-hospital and emergency department protocols were developed and distributed, and transfer agreements between hospitals willing to treat only the acute phase of alcoholism and those willing to do detoxification and/or rehabilitation were signed.

Andrew DiBartolomeo, M.D. and Bob Bednarik, M.S. of the Akron City Hospital advised a close liaison between alcohol treatment programs and emergency medicine. Their treatment center has decreased bed utilization in larger hospitals and has mobilized the alcohol and drug-dependent patient into a definitive treatment setting for his particular disease. They said that a new type of primary care specialist is emerging who deals with emergent, urgent, and episodic care. A new type of nurse is also evolving as well as a health care professional called the paramedic. The three work as a team to promote life-saving care.

### Alcohol and Cardiac Disease

In a paper in the plenary session, "Cardiovascular Effects of Alcohol Use," Timothy J. Regan, M.D. and Philip P. Ettinger, M.D. of the College of Medicine and Dentistry of New Jersey-New Jersey Medical School reported that there is no proven

therapeutic effect of the use of alcohol in cardiac patients. Major support for the role of ethanol as cardiotoxic agent when used in large amounts over a prolonged period has been obtained in various species of animals, including depression of ventricular function. Although the mechanism of progression to heart failure or arrhythmias is not known, several factors may be associated, including the cumulative effects of ethanol alone or after intensified drinking episodes.

The relationship between alcohol intake and the extent of coronary artery occlusion, as measured by arteriography, has been studied in 2,048 male and 480 female patients by Joseph J. Barboriak and a team from the Departments of Pharmacology, Preventive Medicine, and Medicine, Medical College of Wisconsin and the Research and Medical Services of the Wood VA Center in Milwaukee. Dr. Barboriak stated that the study showed that the patients in both groups who abstained or consumed less than 1 oz. of alcohol weekly had significantly higher occlusion scores than patients imbibing moderate amounts of alcohol. This inverse relationship between alcohol intake and coronary artery occlusion persisted in spite of the progressively higher plasma triglyceride levels, higher prevalence of hypertension, and heavier smoking found in the patients consuming larger amounts of alcohol.

In a workshop session, reporting on a study of predicting voluntary ethanol consumption in group-living pigtail macaques, Robert H. Elton of the Primate Research Program, Eastern Washington University, found that animals in the middle of the dominance hierarchy tended to consume more orange juice during baseline studies and subsequently more ethanol solution.

When tolerance and physical dependence were induced by inhalation of ethanol in TO Swiss mice by John M. Littleton, Geryk R. John, and Susan J. Grieve of the Department of Pharmacology, King's College, London, alterations of phospholipid fatty acid composition were observed in brain, heart, and liver. Preliminary experiments suggest that the time course of these changes in phospholipid composition is very rapid in brain synaptosomes and that some synaptosomal fractions show the change to a greater extent than others.

### Biological and Biochemical Reports

• A study of blood ethanol elimination in baboons fed alcohol in a liquid diet led M. Salaspuro and C. S. Lieber of the Bronx VA Hospital and Mt. Sinai School of Medicine to conclude that ethanol elimination curve is non-linear and that the non-linearity is augmented after chronic consumption. This is associated with diminished NAD-dependent metabolic alterations. The results suggest increased activity of non-ADH pathway of ethanol metabolism, such as MEOS, which does not produce NADH and may actually consume reducing equivalents.

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## more from St. Louis

(Continued from page 3)

• Ethanol alters control of dopamine synthesis, concluded a team lead by B. Tabakoff of the University of Illinois Medical Center in Chicago. Since many symptoms of the ethanol withdrawal syndrome such as tremor and temperature anomalies may be mediated by the DA systems of the brain, they performed studies on the activity of tyrosine hydroxylase (TH) in striatum of mice after acute or chronic treatment with alcohol.

• Henri Begleiter, Bernice Porjesz, and Robert Youdin of the Department of Psychiatry, Downstate Medical Center, SUNY, showed that in experimental rats exposed to alcohol for four weeks brain hyperexcitability is present several weeks after the last dose of alcohol. Their data suggest that the chronic intake of ethanol results in long-lasting central nervous system effects even after ethanol intake stops. Furthermore, the persistence of these residual effects is dependent upon the length and amount of initial exposure to ethanol. While these residual signs may not be overtly observable, they become quite conspicuous with the administration of a single dose of alcohol.

• Time course studies were undertaken by Edward J. Gallaher, Ph.D. and Dora B. Goldstein, M.D. of the Department of Pharmacology, Stanford Medical Center, to determine the onset of tolerance to ataxic effects of ethanol in the mouse. During initial alcohol exposure, tolerance developed rapidly. The threshold rose from 1.8 to 2.7 mg/ml in 2.5 hours, following single ethanol injections. Tolerance was studied over longer periods; a maximal threshold of 3.0 mg/ml was reached in about 200 minutes.

## Clinical Reports

• A field test of the NCA Criteria for the Diagnosis of Alcoholism was carried out in Wisconsin by George R. Jacobson et al. from De Paul Rehabilitation Hospital, the Division of Motor Vehicles, and the Bureau of Alcohol and Other Drug Abuse. The subjects were 216 persons arrested on alcohol and driving offenses between October 1976 and April 1977. The data were compared to similar information collected from a baseline sample of 200 drivers referred for the same offense in the same counties approximately one year before the field-test period.

• There are differences in the taste perception of ethanol between alcohol and non-alcoholic individuals, according to a study conducted by R. Gregg Settle, Ph.D., Monell Chemical Senses Center, University of Pennsylvania and the VA Hospital, Philadelphia. The detection (absolute) threshold and the hedonic response (preference) were investigated in outpatient alcoholics. Alcoholics had a higher threshold for ethanol

than controls. Groups with a more recent drinking episode showed less of an aversion for alcohol than controls and than the group whose most recent drinking episode was 22 or more days ago, who responded similarly to controls. All groups demonstrated an increased aversion to higher concentrations of alcohol. Groups did not differ in their preference ratings for water.

• Elevated serum vitamin B-12 appears to reflect alcohol abuse more accurately in females than in males, according to P.A. Goldman, C. B. Jankowski, B.S.N., and D. E. Drum, M.D. of the Harvard Medical School and Peter Bent Brigham Hospital. The basis for this sex difference remains to be elucidated.

• In a study of alcohol withdrawal using Gross's TSA, the severity of tremor was also assessed using a pneumatic tremograph. The tremor was shown to be not a simple vertical oscillation but a rotary movement of the finger, producing a circular trace. This study, by C. S. Mellor and R. Ganguli of the Department of Psychiatry, Memorial University, St. John's Newfoundland, suggested that the tremor of alcohol withdrawal is not an exaggerated form of normal physiological tremor but is due to a different mechanism.

## Psychiatric and Psychological Reports

• In an attempt to investigate means of achieving rapid transformation of the attitudes of alcoholics, Marc Galanter, M.D. of the Albert Einstein College of Medicine studied two religious sects (the Divine Light Mission and the Unification Church) to examine the variables related to religious conversion. In both religious groups alcohol use declined significantly after conversion. He then related his findings to the clinical management of alcoholic patients.

## Women and Alcoholism

• In a study of 292 college women, 129 of them daughters of alcoholic fathers, Judith L. Barnes, Carole S. Benson, and Sharon C. Wilsnack of the Department of

Psychology, Indiana University, found that the daughters of alcoholics reported more experience with drinking, drank more often and in larger amounts, and acknowledged more drinking-related problems than daughters of nonalcoholics. The groups did not differ on a measure of depression. Alcoholic fathers were perceived as more rebellious and distrustful than were nonalcoholic fathers, and the daughters of alcoholics also perceived themselves as more rebellious and distrustful.

• Comparing treatment prognosis for women and men alcoholics, Linda J. Beckman, Ph.D., of UCLA found no differences in abstinence rates for men and women on a one-year follow-up of 240 alcoholics, despite past evidence of a poorer treatment prognosis for women. Among women, those higher in anxiety and depression had a poorer prognosis; for men, lower self-esteem and external locus of control were associated with poor prognosis.

## Poster Sessions

• Robert L. Coutts, Ph.D. et al. of the Mesa County Mental Health Center reported eight areas of research which propose an interrelationship of the arousal function of the brain, certain neural tracts, biogenic neurotransmitters, minimal brain dysfunction, and losses of self-control as evidenced in neurosis, psychosis, sociopathy, and substance abuse. Losses of self-control correspond with specific dysfunctions of the brain which appear to be caused by imbalances of the GABA, NE, DA, and 5-HT neurotransmitters of the arousal system at the interneuronal level of the cerebral cortex. Clinical evidence indicates that titrated dosages of GABA and monoamine mimicking medications correct the dysfunction and improve self-control.

• Cesium salts have antidepressant properties and can have potential use in negating some of the effects of ethanol, studies with rats have indicated. The work was conducted by F. S. Messiha, Ph.D., Departments of Pathology and Psychiatry, Texas Tech University School of Medicine.

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