

Research Elucidates Alcohol's Effect on the Brain

BY DAMIAN McNAMARA
Miami Bureau

ORLANDO — Two neurologic systems reinforce alcohol dependence—both dopamine and serotonin pathways—and make it more difficult for people to stop drinking, according to a presentation at a psychopharmacology congress sponsored by the Neuroscience Education Institute.

“The neurobiology has led us where there are spectacular new targets for treat-

ment of alcoholism,” said George F. Koob, Ph.D., professor and chairman of the committee on the neurobiology of addictive disorders at the Scripps Research Institute, La Jolla, Calif.

Rewarding effects of alcohol may be mediated by dopaminergic and opioidergic systems, Dr. Koob said. The pleasure provided through the mesolimbic pathway explains why people initially drink alcohol or take drugs. Dopamine is released in the front end of the brain while opioids acti-

vate the ventral tegmental area and nucleus accumbens. Impulsive drinking, particularly in young males, is an activation of reward mechanisms driven by initial pleasurable effects, Dr. Koob said. “As a person continues to drink, the reward system gets impaired but hyperarousal in the brain is set up that only alcohol will suppress. So [drinking] becomes self-medicating. ...Those people you knew in college who could drink everyone under the table ultimately end up with a problem.”

The acute double action of alcohol is to enhance γ -aminobutyric acid (GABA) and decrease glutamate, Dr. Koob said. Both dopamine and serotonin pathways may mediate alcohol dependence. The frontal cortex, amygdala, and hippocampus are brain areas that might contribute to dependence, he added.

Consumption of alcohol also may alter regulatory agents of stress, particularly increasing corticotropin releasing factor (CRF) activity and decreasing neuropeptide Y. “While you are bingeing on alcohol, you are releasing the good guys like dopamine peptides, but when you get into withdrawal, you are recruiting the bad guys—the GABA system and the CRF stress hormone,” Dr. Koob said.

“You have a double-whammy effect when you become dependent—you lose the good guys and gain the brain stress system—so you continue to self-medicate with your drug of choice.” ■

A D V E R T I S E M E N T

PREHYPERTENSION: A CONDITION TO BE TAKEN SERIOUSLY

In 2003, the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC) developed new guidelines for normal blood pressure. Its seventh report (JNC 7) revealed changes in blood pressure classifications based on reviewing six years of scientific literature and defined a new term – “prehypertension.” As a result, many people who were previously considered to have normal blood pressure levels are now classified as prehypertensive (blood pressure ranging from 120-139 mmHg systolic and/or 80-89 mmHg diastolic).

An increased risk of heart attack, heart disease and stroke

Studies have shown that those who fall into the prehypertensive range have a significantly increased risk of developing high blood pressure (hypertension). They also have an increased risk of heart attack, heart disease, and stroke. In fact, according to a 2005 study published in an American Heart Association journal, *Stroke*, which analyzed data on a large group of subjects participating in the well respected Framingham Heart Study, it was found that those with prehypertension had approximately three times the relative risk of having a heart attack and approximately double the relative risk of developing heart disease overall, compared to those with normal blood pressure (normotensive).

While more than 65 million Americans are hypertensive, another 70 million are believed to be prehypertensive. Many of these people remain undiagnosed and, therefore, untreated until their condition has worsened, and they have crossed the line into hypertension or experience heart attack, heart disease, or stroke.

Prehypertension triples a patient's risk of heart attack.

Published in *Stroke* (Sept. 2005), a journal of the American Heart Association

A new paradigm: intervention before disease and organ damage occur

Although drug therapy is currently not indicated for prehypertension, the JNC recommends early intervention in order to reduce one's chances of developing hypertension at some point in the future.

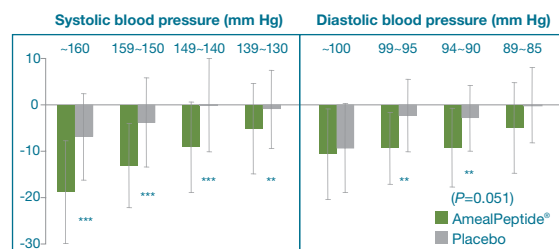
Until recently, the only recourse physicians had in treating prehypertensive patients was to recommend lifestyle modifications such as dietary changes and regular exercise. But even among patients who are initially committed, adherence to these recommendations is typically not good, and any positive results tend to be short-lived.

AmealPeptide® – a novel, nonpharmacologic option in managing prehypertension

AmealPeptide®, a naturally occurring ACE inhibitor (ACE is a major regulator of blood pressure) derived from nonfat milk, has been demonstrated in more than 15 double-blind, placebo-

controlled clinical studies to promote modest blood pressure lowering in those with elevated blood pressure and to help maintain blood pressure at healthier levels.* AmealPeptide® consists of two tripeptides (small chains of amino acids) that are easily absorbed by the body. It acts as a natural blocker to the formation of angiotensin II in the renin-angiotensin system (RAS) cascade, resulting in the inhibition of blood vessel constriction.

Stratified analysis of 7 clinical studies by start value of blood pressure (359 subjects from 7 studies)



Significant difference from placebo (t-test): *P<0.05, **P<0.01, ***P<0.001.

Not only have studies shown that AmealPeptide® promotes and maintains healthier blood pressure, they have also shown it to be safe and well tolerated, even when tested at 10 times the recommended dose. AmealPeptide® does not lower blood pressure into the hypotensive range and has no known interactions with medications or other dietary supplements.

ameal bp™ – the easy way for prehypertensive patients to get the AmealPeptide® they need

The two tripeptides found in AmealPeptide® are embedded in some milk proteins, especially casein. Scientists at Calpis Company, Ltd, in Tokyo, Japan, have discovered proprietary ways to produce these peptides from the milk proteins in clinically meaningful amounts. One should not expect to get the same effects from ordinary dairy products. Recently, ameal bp™, a new dietary supplement whose active ingredient is AmealPeptide®, has become available both online and at drug stores.

“AmealPeptide® has been assessed in several clinical studies, which have demonstrated reductions in blood pressure.”

Dr. Joel Neutel, a specialist in clinical hypertension for the American Society of Hypertension

For more information about prehypertension, the science of peptides, AmealPeptide®, and ameal bp™, visit www.amealbp.com.

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Routine AUDIT Identifies Problem Drinkers Early

BOSTON — Screening for alcohol problems at primary care visits and in the emergency room could help in the early identification of heavy drinkers who would otherwise not seek treatment, according to a poster presented at the annual meeting of the American Public Health Association.

The Alcohol Use Disorders Identification Test (AUDIT) can quickly flag individuals with potential alcohol problems who are at higher risk for mental health and physical functioning problems, Ronda L. Dearing, Ph.D., of the State University of New York at Buffalo said in an interview.

Dr. Dearing and her colleagues at the University of Minnesota recruited 208 individuals with AUDIT scores that were above the recommended screening cutoffs (8 or above for men age 65 and under, and 7 or above for women and for men over age 65). Study participants were adults without severe cognitive impairments or psychotic disorders who had not received alcohol or drug treatment in the last year.

The participants were asked: Do you have concerns about your drinking, do you consider yourself a problem drinker, and do you consider yourself an alcoholic? Despite the fact that all the individuals enrolled in the study were potential problem drinkers, nearly two-thirds of the study participants said they did not have concerns about their drinking. About 80% said they did not consider themselves to be problem drinkers, and 78% said they were not alcoholics.

Higher scores on the AUDIT were significantly associated with poorer physical health, social functioning, and mental health on the Rand 36-Item Health Survey (SF-36). On the Brief Symptom Inventory, higher AUDIT scores were significantly associated with anxiety, somatization, psychoticism, paranoid ideation, obsessive-compulsive behavior, and depression.

—Mary Ellen Schneider