

GETWELE RESEARCH ABSTRACTS – FULL EXPERIMENTAL

1. Animal Data: Getwele & University of Virginia School of Medicine

Pilot: Efficacy of the Nutritional Supplement at Reducing Relapse Vulnerability

Getwele collaborated with Dr. Wendy Lynch, Ph.D., Associate Professor at UVA to conduct a preliminary study of SMAASH-C in a rat model of cocaine relapse, and

confirmed its potential efficacy as an anti-relapse intervention. The results showed that

chronic treatment with SMAASH-C during abstinence resulted in a 55% reduction in as compared to control treatment (non-Toxicology analyses of a 12-week treatment

in drug naïve and cocaine-withdrawn animals showed that it offsets measures of cocaine-induced of toxicity.

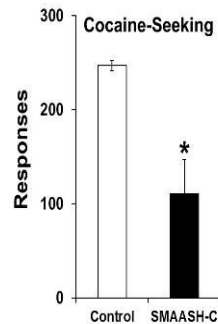


Figure 1. SMAASH-C markedly reduced cocaine-seeking. Rats had either chow without (n=4) or with SMAASH-C (160 mg/day; n=6) during abstinence. Extinction and cue-induced reinstatement responding was assessed on the 11th day of abstinence.

levels of cocaine-seeking supplemented rat diet). regime of SMAASH-C

2. Animal Data: Awele Foundation & University of West Indies (UWIMONA)

Plasma Cocaine Metabolite and Liver CYP450 3A4 Isoenzyme Levels as Indicators of Cocaine Dependence in Rats Treated with Nutritional Supplements – Dept of Biochemistry

Abstract: The effects that chronic cocaine administration (CCA) have on craving, cocaine metabolite concentrations and cytochrome P450 3A4 isoenzyme (CYP450 3A4) activities in Sprague-Dawley rats following the administration of Salako Nutritional Supplements (SNS) were examined. Five groups of fifty rats were used to assess the effect of the SNS following CCA. Craving was analyzed for each rat using a Conditioned Place Preference protocol. Blood samples were obtained at regular intervals and used to measure cocaine plasma metabolite levels. CYP450 3A4 activity was determined in the liver. Administration of the SNS reduced craving of cocaine significantly, upon discontinuing cocaine in the rats. Blood plasma analysis showing higher benzoylecgonine equilibrium and the CYP450 3A4 levels demonstrated that the SNS possibly aided in the removal of the stored metabolites indicative of increased metabolism of cocaine, enhanced by the Supplements. Results indicate that the SNS formulation reduces craving caused by CCA by increasing the liver CYP450 3A4 activity, resulting in better plasma clearance.

3. Animal Data: Awele Foundation & University of West Indies (UWIMONA) – Dept of Physiology

Drug seeking behaviour of amphetamine addicted rats is eliminated after nutritional supplementation. <http://www.scirp.org/journal/jbbs/>

Abstract

Aim: The effect of a patented nutritional supplement on drug seeking behaviour by amphetamine addicted rats was investigated using a biased Conditioned Place Preference paradigm.

Method: The Conditioned Place Preference (CPP) apparatus was used to test responses of amphetamine addicted rodents to oral administration of a nutritional supplement. Twenty-four male Sprague Dawley rats that previously showed the predicted baseline preference for the dark chamber during a 20-minute pre-test exploration of the CPP were selected. Twelve rats (Group AMP) were then given intraperitoneal injections of amphetamine hydrochloride and confined to the white (aversive) chamber, and their performance during a repeat exploration during acute withdrawal was compared with that of controls (Group SAL; n=12). Six rats in each of the addicted and control groups (Groups AMP-S and SAL-S) were then fed rat chow reconstituted with the nutritional supplement, while the remaining animals (Groups AMP-N and SAL-N) were fed normal rat chow for 8 weeks, followed by a final exploration, by all animals, of the CPP.

Results: After eight drug-free weeks of nutritional supplementation, previously amphetamine addicted animals (AMP-S) showed preference for the black CPP chamber, representing elimination of preference for the previously drug-paired chamber, measured as significantly fewer entries into, and significantly less time spent in the drug-paired white chamber ($p < 0.05$). ANOVA revealed that addicted AMP-S rats behaved like non drug-exposed animals after 8 weeks of dietary supplementation.

Conclusion: Remarkable recovery from addictive behavior on the CPP paradigm was observed in established amphetamine addicts, after nutritional supplementation.

ABSTRACT PUBLICATIONS:

NIDA_INTL	NIDA_INTL_front	NIDA_INTL_front	xml_no_dtd	0	*
1	NIDA International Program, National Institute on Drug Abuse				

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Bethesda, Maryland 20892 USA

Information and Resources

Nutritional Supplements in the Treatment (Secondary Prevention) of Chronic Cocaine Dependence
Category: Basic Science
Year: 2009

Gardner, Natwaine; Luke, Kedon; Bahado-Singh, Perceval; Dilworth, Lowel; Wheatley, Andrew; De La Haye, Winston; Asemota, Helen The University of the West Indies at Mona, Jamaica

Background: Illicit drug use has become increasingly prevalent in Jamaica as a result of the spill-over market created by drug trafficking. There is currently no medical treatment for cocaine addiction. A formulation of nutritional supplements has been developed and patented to reduce the craving. The objective of this study was to determine the effectiveness of consumption of nutritional supplements in the treatment of rats chronically treated with cocaine through the use of conditioned place preference (CPP) behavior and lipid peroxidation analysis.

Methods: An animal model of cocaine dependence was established through a biased CPP paradigm with the use of a CPP box, using a modification of the method described by Martin et al. (2000). The preferred compartment (black, dark chamber) was paired with the vehicle (saline), and the nonpreferred compartment (white, well-lit chamber) was paired with cocaine (20 mg/kg). The effects of administration of nutritional supplements on dependence was evaluated using the CPP box where the time spent in each of the two compartments was evaluated out of a total of 18 minutes and compared with various controls over a 3-month period. Animals were sacrificed, and the organs collected and stored for analysis. Lipid peroxidation levels were measured according to the method of Okhawa et al. (1979). Statistical analysis was done using SPSS software (version 16).

Results and Discussion: During acclimatization, in the animal models time spent in the white compartment was 5.98 ± 0.48 minutes. After chronic cocaine exposure, the time spent in this compartment increased more than two-fold to 12.46 ± 0.59 minutes. Treatment of rats chronically exposed to cocaine with the nutritional supplements resulted in a decreased preference for the white compartment over time (6.05 ± 0.18 minutes). Lipid peroxide in the liver, heart, pancreas, spleen, brain, and stomach was not significantly different for normal rats fed normal rat diet and rats chronically exposed to cocaine and treated with nutritional supplements. The group continuously exposed to cocaine and fed normal rat diet showed an overall increase in lipid peroxide level compared to that of the normal control group fed normal rat diet.

Conclusions and Implications: It would appear, based on the CPP, that nutritional supplements may be effective in reducing the craving for cocaine and that this treatment may effectively decrease lipid peroxides resulting from chronic exposure to cocaine.

