



2nd INTERNATIONAL CONFERENCE ON DRUG DISCOVERY & THERAPY

February 1st - 4th, 2010, Dubai, UAE



The Use Of Nutritional Supplements In Reducing Craving Associated With Cocaine Dependence

W. G. De La Haye, N. S. Gardner, K. J. Luke, A. O. Wheatley, P. S. Bahado-Singh, H. Lowe, M. H.

Ahmad A. Salako and H. N. Asemota

Jamaica

Introduction: Illicit drug use has become increasingly prevalent in Jamaica, partly due to the spill-over market created by drug trafficking; however there is currently no pharmacological treatment for cocaine addiction. A formulation of nutritional supplements has been developed which appears to be effective in reducing craving for cocaine.

Aim/Objective: 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) behaviour.

Method: Rat models of cocaine dependence were established through the use of a biased CPP paradigm using a modification of the method described by Martin et al (2000) with the use of a CPP box. The preferred compartment (black, dark chamber) was paired with normal saline and the non-preferred compartment (white, well lit chamber) was paired with the drug. The effects of administration of nutritional supplements with these rat models of dependence were 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 three month period.

Results: During acclimatization, the time spent in the white compartment was 5.98 ± 0.48 minutes. After chronic cocaine exposure, the time spent in this compartment was increased more than two fold to 12.46 ± 0.59 minutes. After the feeding trial with the supplemented diet, these cocaine dependent rats, over time, showed decreased preference for this area, resulting in a final time being spent of 6.05 ± 0.18 minutes in the white compartment. A similar cocaine dependent group that was fed normal rat diet and a normal control group fed the supplements had a resulting time of 10.37 ± 0.10 and 4.74 ± 0.14 minutes respectively at the end of the feeding trial.

Conclusion: Nutritional supplements are effective in reducing the craving associated with cocaine dependence in these rat models. An understanding of the mechanism of action of these supplements is needed.

Funded by The Biotechnology Centre, UWI Graduate Awards grant, Environmental Health Foundation, Bureau of Standards and Scientific Research Council, Jamaica.