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Addendum

ABSTRACTS OF THE
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EFFECT OF RESVERATROL AS CALORIC RESTRICTION MIMETIC AND ENVIRONMENTAL ENRICHMENT ON NEUROBEHAVIOURAL RESPONSES IN YOUNG HEALTHY MICE

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ABSTRACT

Caloric Restriction (CR) has been generally defined as consumption of nutritious diet that is 40% less in calories compared to *ad libitum* diet; Environmental Enrichment (EE) is defined as a sustained and progressive increase in cognitive and sensorimotor stimuli with aggregated voluntary physical activity and complex social interactions. This study investigated the modulatory role of Resveratrol induced-CR and EE on learning and memory, motor coordination and motor strength in young healthy mice using elevated plus maze, beam walk and hang test respectively. Fifty mice of both sexes were randomly divided into five groups of 10 animals each: group I received carboxymethylcellulose (CMC) orally per kg/day (control), group II animals were maintained on every other day feeding, group III animals received Resveratrol 50 mg/kg, suspended in 10 g/L of (CMC) orally per kg/day. Group IV animals received CMC and kept in an Enriched Environment while group V animals received Resveratrol 50 mg/kg + EE. The treatment lasted for the period of four weeks. On days 26, 27 and 28 of the study period, the animals were subjected to neurobehavioural evaluation. The results obtained showed that there was no significant change ($P > 0.05$) in neurobehavioural responses in all the groups when compared to the control. In conclusion, the results obtained demonstrated that Resveratrol induced-CR and EE have no significant effects on neurobehavioural responses in young healthy mice over a period of four weeks.

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EFFECTS OF ARTEMISININ BASED ANTIMALARIA DRUGS ON HEALING OF ACETIC ACID INDUCED GASTRIC ULCER IN THE RAT

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Antimalaria drugs have been shown to predispose the stomach to ulceration in the rat. However, their role in the modulation of gastric ulcer healing is not known. In this study, effect of artemisinin based combination therapies (ACTs) on ulcer haling was investigated. Gastric kissing ulcers were induced in forty male albino rats (150-180 g) using 0.2ml, 50% acetic acid. One day after the ulcer induction, experimental rats were divided into four groups and treated once daily for 3 days orally as follows: (1) Normal saline (NS, 1 ml/kg) (2) Artemether-lumefantrine (A-L, 2/12 mg/kg), (3) Artesunate-amodiaquine (AS-AQ, 4/10 mg/kg) and, (4) Artesunate (AS, 2 mg/kg) only. A fifth group of 10 rats served as overall control with no ulcer induced. Ulcer healing was assessed on days 4 and 7 macroscopically, and biochemical analysis applied to determine lipid peroxidation and the activity of catalase (CAT) and superoxide dismutase (SOD) in homogenized gastric mucosa samples. The extent of neutrophil infiltration was also examined by histometry. A-L increased ulcer severity on day 7 by

100%, while AS-AQ exhibited 80% and 120% increase and AS, decrease by 35% and 50% on both day 4 and 7 respectively. Malondialdehyde (MDA) level increased on day 4 and 7 in A-L and AS-AQ administered rats ($p<0.05$). Also, SOD activity was observed to reduce only in AS-AQ treated rats ($p<0.05$). Conversely, AS reduced MDA, enhanced the activities of CAT and SOD on both day 4 and 7 ($p<0.05$). Neutrophil infiltration significantly increased on day 4 (31.0±1.1 and 37.0±1.7 vs 26.0±2.2 cells/µm) and day 7 (25±2.7 and 29±1.9 vs 12.0±1.5 cells/µm) in A-L and AS-AQ treated respectively. AS treated group recorded a decrease on both days ($p<0.05$). This study revealed that Artemether-lumefantrine and artesunate-amodiaquine may delay gastric ulcer healing.

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CAFFEINE SHORTENS QT INTERVAL IN RABBITS

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Caffeine, the most commonly consumed stimulant is thought to be a drug of tolerance. The heart is the organ that causes blood to exert pressure on blood vessels. It has been reported that the tolerance to caffeine's pressor effect is not complete (Hartley et al 2000). Therefore the present study was designed to investigate the effect of caffeine over a period of 28 days on the QT interval in the rabbit model.

The study was carried out in adult African bred New Zealand rabbits divided into three groups (n=5). The rabbits were administered with 2mg/Kg and 6mg/kg of caffeine for 28 days in groups II and III respectively. Group I rabbits served as control and were given 0.5ml/Kg of normal saline for a period of 28 days. Various measurements were taken weekly for the period of the 28 days study. Mean arterial pressure (MAP) of the animals were measured using a non-invasive automatic oscillometric blood pressure device. five consecutive recordings (~1 min apart) were performed, and the mean of these three measurements were recorded. Lead II electrocardiogram and heart rate (HR) were recorded using a veterinary ECG machine. Corrected QT (QTc) was calculated using the Bazett formula.

The results show that caffeine at 2mg/kg had no effect on HR for the first 14 days however significant decreases were observed at day 21(258.6 ±3.9 to 227.4±4.86) and day 28 (258.6 234.0±2.5). At 6mg/Kg caffeine significantly increased heart rate all through the post administration studies (258.6±3.9 to 290.2±5.79). Caffeine at the dose of 2mg/Kg had no significant effect on blood pressure in rabbits during the course of this study. But caffeine at a higher dose of 6mg/Kg significantly increased Mean arterial blood pressure post caffeine administration ($p<0.001$). Caffeine at the dose of 2mg/Kg had no significant effect on ECG recording during this study. However, at 6mg/Kg caffeine consistently and significantly reduced the corrected QT interval of the ECG recording of the rabbits from 161±2.45 to 133±1.23milisec post caffeine administration ($P<0.01$).

This study shows that caffeine administered at the dosage of 6mg/Kg had a QTc interval shortening effect in the rabbit. This however was not observed when caffeine was administered at 2mg/Kg.

Reference

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