Abstract ID: ABSLN-3TVEH-RYZ99-A78C8

Anti-inflammatory effects of interferential frequency-specific applied microcurrent.

W. Reilly [1], V. E. Reeve [2], C. Quinn [2], C. McMakin [3]

[1] R&D, Wellness Crae Australia P/L, Coorparoo, QLD, Australia
[2] Faculty of Veterinary Science, University of Sydney, Sydney, NSW, Australia
[3] Frequency Specific Microcurrent Fibromyalgia and Myofascial Pain Clinic, Portland, OR, United States

Arachidonic acid-induced mouse ear swelling is a well accepted model of inflammation. Its mechanism of action is through the alteration of lipoxygenase (LOX) activity, with the induced inflammation reaching a maximum oedema 1 hour post application. Groups of 4, male Skh:hr-1 albino hairless mice aged 6 weeks, had their ears measured with a micrometer and then 5 µl of 25mg/ml arachidonic acid (AA) in ethanol or ethanol alone (controls) was painted on both sides of the ear and both ears were treated. Frequency specific microcurrent (FSM) was applied immediately after the ethanol had evaporated and the ears were dry. A current of 200 microamperes at frequencies of 40 hertz on channel A and 116 hertz or 355 hertz on channel B was individually applied to the mouse abdomen for 1, 2 or 4 minutes
and ear thickness measurements were taken at 1 hour post-application of the AA. The mean ear swelling was determined as the change in ear thickness, and a 70% reduction in ear swelling was observed in the 4 minute FSM treated mouse group when compared
to the control. Similar results were obtained with Phorbyl-12-Myristate 13-Acetate (PMA), applied in acetone, which is also reported to induce acute inflammation by activating both the cyclo-oxygenase (COX) and lipoxygenase (LOX) in this model. The results indicated that FSM is capable of inhibiting both AA and PMA induced inflammation in the mouse ear model. FSM experimentation has demonstrated the observed result to be reproducible, application time dependent and specific, as other FSM
frequencies tested either had no effect in reducing inflammation in the ear model or suggested a
narrow response curve was operating.
These experiments demonstrate the utility of FSM in a well established animal model of
inflammation, and indicate that further experiments, to elucidate the mechanism of action, are
warranted.
We acknowledge Health World Limited, Eagle Farm, Qld, Australia for their support with these studies.