

Anti-Fatigue Activity of SM Herbal Preparation in Rats by Acute Weight-Loaded Swimming Test

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Fatigue is the main obstacle to maintaining stamina. It deteriorates the capacity for the physical workout of an athlete and the quality of life of a normal person. Fatigue occurs due to the accumulation of reactive free radicals and increased energy consumption as ATP and glycogen. Athletes use several anti-fatigue substances like Caffeine, creatinine etc. to enhance endurance. The drawback of these substances is the adverse effects on health. Hence, it is high time to explore safe herbal anti-fatigue formula to improve endurance. The SM herbal formula is a modified authentic herbal recipe primarily used as an anti-fatigue formula mentioned in ancient Ayurveda authentic books. This study focused on evaluating the anti-fatigue activity of the SM herbal preparation in rats using the Acute Weight-Loaded Forced Swimming Test (AWLFST). Twenty-four healthy albino Wistar rats were randomly divided into four groups. 5ml/Kg of distilled water, Caffeine (20mg/Kg), 200mg/Kg of aqueous extracts of the drug, and 200mg/Kg of alcohol extracts of the drug were administered orally for the groups 1, 2, 3 and 4 accordingly for 14 days. The rats were taken for the AWLFST on the 14th day. Exhaustion time was determined and the experiment is repeated every alternate day for two weeks. Data were analyzed statistically using graph pad prism software. All the groups showed significant positive results compared to the negative control. The adjusted p values of the mean immobility period of group 2, 3, and 4 are 0.0020, 0.0002, and 0.0058 respectively. Further, rats who received aqueous extract of the drug (group 3) exhibited highly significant results ($P > 0.001$). Results indicate that SM preparation can improve endurance against exercise-induced fatigue.

Keywords: *anti-fatigue formula, endurance, SM herbal preparation*