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The Effects of Exercise Response on Creatine Kinase in White Wistar Rats

Abstract

Increasing creatine kinase is an indicator to detect damaged tissues. Therefore, the objective of this study was to identify the response of regular and irregular exercise on creatine kinase level at skeletal muscles. This study was an experimental study using randomized control group posttest only design, involving 39 white male Wistar strain Rattus norvegicus rats. These 39 rats were divided into three groups. The first group swam regularly at the frequency of three times a week, the second group swam irregularly at the frequency of zero to five times a week and the third group served as control. This experiment was conducted within 12 weeks, and the exercise was performed 13 minutes per set, two to five sets with a load of three percent from the rats’ weight; weight. Before the data were taken, the rats were rested for 24 hours after the last experiment. Then, the data were collected by making the rats to swim for 13 minutes and the rats were given five minutes resting. Later, their blood was taken from sinus opticus orbitalis in order to check the creatine level by using a U-V test method. The data were analyzed with Anava test and continued with a HSD Turkey test. The results of this research showed that there were significant differences between regular and irregular exercises in the increase of creatine kinase level (p < 0.05), and no significant differences between the second and control groups (p > 0.05). Based on the results, it was concluded that regular exercises could avoid the increase of creatine kinase level which acts as an indicator to detect damaged tissues. Whereas, irregular exercise has the same potential effect with no exercise at all in creatine kinase level.

Keyword : regular, exercise, irregular, exercise, creatine, kinase, damaged, tissues,
Nutrition