

Effects of Panax ginseng supplementation on physiology responses during endurance performance

Abstract

Panax ginseng is the most commonly used ginseng in the diet and medicine in many Asian countries especially in China. It is categorized as an 'adaptogen' that helps to adapt against higher levels of stress and maintains a good health. In general, animal toxicity studies found that Panax ginseng is very safe with no teratogenicity or mutagenicity. However, data on the effect of Panax ginseng supplementation on physiology responses during endurance performance are still lacking among Malaysian population. In the present study, we examined the effect of acute supplementation of 200 mg Panax ginseng (PG) consumed one hour prior to endurance performance. Nine heat acclimated recreational runners (age: 25.4 ± 6.9 years) as well as non-users of caffeine (23.7 ± 12.6 mg per day) participated in this study. Subjects ran at 70% of their VO_{2max} on a motorized treadmill in a heat-controlled laboratory ($31^{\circ}C$, 70% relative humidity). Subjects drank 3 ml of cool water per kg of body weight every 20 minutes during the trials to avoid the possibility of dehydration. Results revealed that Panax ginseng trial did not differ significantly from placebo trial in terms of rectal temperature, mean skin temperature, oxygen uptake, plasma insulin and glucose. Heart rate and plasma lactate concentration were lower in Panax ginseng trial compared to Placebo trial. Plasma free fatty acid concentration in the Panax ginseng trial was higher in comparison with Placebo trial. From the current study, it could be concluded that ingestion of 200 mg of Panax ginseng before 1 hour endurance performance can increase lipolysis, ease heart rate, reduce plasma lactate concentration and maintain good health.