



Passion Fruit Juice Enhances Cardiac Autonomic Activity in Healthy Subjects

Wattanyueng K, B.S., Yingsangtrakul T, B.S., Thinyoowong A, B.S., Booranasuksakul U, M.S.,

Prasertsri P, Ph.D^{*}

Faculty of Allied Health Sciences, Burapha University, Chonburi 20131, Thailand

Exercise and Nutrition Sciences and Innovation Research Group, Burapha University,

Chonburi 20131, Thailand

^{*}Corresponding author: piyapong@buu.ac.th

Abstract

Introduction: Passion fruit juice (PFJ) has high content of vitamin C which is well known as a potent antioxidant. It has been reported that vitamin C supplementation improved cardiac autonomic function in patients with heart disease. However, knowledge of effect of PFJ supplementation on cardiac autonomic function is limited. Hence, the present study aimed to explore effect of PFJ supplementation on cardiac sympathetic and parasympathetic nervous activity in healthy subjects.

Methods: This study was randomized crossover design. Fourteen healthy subjects aged between 19 and 22 years old were enrolled. They randomly supplemented with either 50% PFJ or placebo (PLA) at 3.5 ml/kg body weight. Electrocardiography lead II was conducted for 2 hours to analyze heart rate variability (HRV). Analysis of frequency domain of HRV consisting of low frequency (LF), high frequency (HF), and LF/HF ratio was obtained every 30 minutes of each supplementation: at 25-30 min (T30), 55-60 min (T60), 85-90 min (T90), and 115-120 min (T120).

Results: At T30 and T120, values of LF power in normalized unit were significantly lower ($p < 0.05$) and values of HF power in normalized unit were significantly higher ($p < 0.05$) in subjects who supplemented with PFJ compared to those with PLA. Moreover, value of LF/HF ratio at T120 was significantly lower in the PFJ supplementation ($p < 0.05$).

Conclusions: The present study shows that single-dose PFJ supplementation augmented parasympathetic nervous activity and reduced sympathetic nervous activity of the heart in healthy subjects. These results suggest that PFJ is a potential drink to promote healthy heart.

Keywords: Passion fruit, Autonomic nervous system, vitamin C, cardiovascular disease