

## Abstract

**Background:** Cardiovascular autonomic function tests involve the tests for assessment of sympathetic and parasympathetic function and dysfunction in controlling the heart and other visceral organs. No general study on cardiovascular autonomic function tests has been reported for Malaysian population. **Objectives:** To establish mean values for five cardiovascular autonomic function tests in adult Malaysian population and to compare these values with those of other populations. **Methods:** The study was done on 246 healthy adult Malaysians (18-45 years old). The test battery consisted of five cardiovascular autonomic function tests:- Resting heart rate and beat to beat resting heart rate variation, heart rate response to standing (30:15 ratio), heart rate response to deep breathing (E/I ratio), blood pressure response to postural change and blood pressure response to sustained handgrip test. **Results:** The resting heart rate ( $83 \pm 1$  beats per minute) for Malaysian population was found to be generally higher than the worldwide reported values. The beat to beat resting heart rate variation ( $11 \pm 7$  beats per minute) shows comparable value with other population. The 30:15 ratio ( $1.08 \pm 0.08$ ) and E/I ratio ( $1.29 \pm 0.16$ ) were within the normal value as stated by Ewing and Clarke (1980). A fall in systolic blood pressure response to postural change ( $-10 \pm 5$  mmHg) and an increase in systolic blood pressure response to sustained handgrip ( $+11 \pm 7$  mmHg) showed similar values as that of Caucasian population but it was different than that reported for African population. However, diastolic blood pressure response for both parameters showed no change in value. **Conclusion:** The results obtained on 246 healthy Malaysian adult populations show different mean values for some parameters but most values are comparable to the worldwide population. The resting heart rate for Malaysian population was found to be generally higher than the worldwide reported values maybe due to genetic, dietary and environmental differences (Guyenet, 2006). Based on the resting heart rate, 30:15 ratio and E/I ratio, it can be said that in general the study population had a decreased parasympathetic tone and/or increased basal sympathetic tone as compared to the other population which might have also resulted in somewhat different diastolic blood pressure response to postural change as well as sustained handgrip test. More studies in a bigger population are needed and the parameters need to be correlated with BMI.