Effects of 12-Week Rowing Training on Resting Cardiac Output, Stroke Volume, and Heart Rate of Stroke Survivors

ABSTRACT

Rowing exercise is one of the cardiorespiratory exercises that induce higher aerobic capacity. Cardiorespiratory parameters, cardiac output (CO), stroke volume (SV), and heart rate (HR) are indicators to measure one's cardiorespiratory fitness. The aim was to study the effects of 12-week rowing training on resting cardiac output (RCO), resting stroke volume (RSV), and resting heart rate (RHR) of stroke survivors. Ten stroke survivors (6 males; 4 females), mean age of 43.6 ± 16.15 years, were subjected to a 12-week rowing training (Concept II Rowing Ergometer, Model C, USA). An individualised programme was prescribed based on %HRR for each of stroke individual. Rowing training was conducted twice per week (12 HIIT; 12 MR). Paired t-test and repeated measures ANOVA (RPM ANOVA) were used for statistical analyses using IBM® SPSS® Statistics 20 software. RPM ANOVA analysis showed no significant effect on RCO [F (5, 45) = 1.066, p = 0.392, RSV [F (2.188, 19.693) = 0.677, p = 0.532)], and RHR [F (5, 45) = 0.856, p = 0.518]. Paired t-test showed no significant difference between pre- and post-test despite the improved values of Mean ± Standard Deviation (RCO: 8129.50 ± 3916.31 to 8494.18 ± 6248.86 mL/min; RSV: 99.27 ± 33.98 to 121.84 ± 66.24 mL; RHR: 78.02 ± 17.39 to 77.17 ± 11.98 bpm) for all respective parameters. Twelve weeks rowing training did not improve resting cardiorespiratory parameters of stroke survivors statistically. Future studies are suggested to include gender difference and medication effect variables.