TACSM Abstract

Resting and Post-Exercise Blood Pressure Response to Repeated Bouts of Aquatic Treadmill Exercise

Joubert DP, Granados JZ, and Crouse SF

Applied Exercise Science Laboratory; Department of Health & Kinesiology; Texas A&M University; College Station, TX

Category: Doctoral

Advisor / Mentor: Crouse, Stephen F. (crouse@hlkn.tamu.edu)

ABSTRACT

Aerobic exercise is known to reduce resting blood pressure as well as induce and acute post-exercise hypotensive response. **Purpose**: Determine the effect of repeated bouts of aquatic treadmill exercise on consecutive days in physically untrained, pre-hypertensive men. **Methods:** Nine male subjects (SBP: 132 ± 8 mmHg; DBP: 79 ± 8 mmHG; 33 ± 8 years; 183 ± 7 cm; 103 ± 31 kg; 32 ± 10% Fat; 36 ± 7 $ml \cdot kg^{-1} \cdot min^{-1}$) participated in the study. All subjects completed an acute aquatic treadmill exercise session (60% VO_2max; 300 kcal) on two consecutive days. Prior to each exercise session and following 10 minutes of seated rest, blood pressure and heart rate were automatically taken every 3 minutes for a total of 3 measurements. Following each exercise session, blood pressure and heart rate were measured automatically every 10-minutes from 20 to 60 minutes post while subjects were seated at rest. Pre-exercise and post-exercise measures were averaged. A dependent sample t-test was performed to compare the average values between the first (ATM1) and second (ATM2) exercise sessions. **Results:** Data are displayed in table below. Both pre-exercise and post-exercise systolic, diastolic, and mean arterial pressures were lower for ATM2. **Conclusion:** A single bout of ATM exercise resulted in reduced resting blood pressure 24-hours later. Furthermore, post-exercise blood pressure was lower following a second ATM exercise session. These data support both the efficacy of ATM exercise in regulating blood pressure and the cumulative benefit of repeated exercise bouts.

		Pre-Exercise				Post-Exercise			
		SBP	DBP	MAP	HR	SBP	DBP	MAP	HR
ATM1	Avg	126	78	96	72	124	77	93	83
	SD	11	7	7	11	12	7	8	10
ATM2	Avg	121	74	92	70	120	75	91	80
	SD	11	7	7	11	10	8	7	13
	T-Test	0.035	0.005	0.003	0.113	0.047	0.028	0.034	0.058

All values represent mean ± SD. p-values compare ATM1 vs. ATM2