TACSM Abstract

Hemodynamics at Maximum Exercise and Exercise Recovery in Freshman Football Recruits at a BCS School

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ABSTRACT

To determine if blood pressures assessed during max exercise and exercise recovery differ in Freshman football player recruits classified according to body mass index categories (BMICAT). A group of 107 freshman football recruits (mean age=18.2yrs, mean height=187.2 cm, mean weight = 103.0 kg, mean BMI=27.4 kg/meters squared, mean percent fat= 18.3%.) underwent graded exercise testing on a treadmill. Height and weight were assessed and BMI was calculated as weight (kg) / height (m) squared. All 97 subjects were classified as either "normal weight"(NW) (N=38), "overweight" (OW)(N=41) or "obese" (OB)(N=28) according to the National Institutes of Health guidelines. Body fat percentage (PCTFAT) was assessed using dual x-ray absorptiometry. Resting systolic (SBP) and diastolic (DBP) blood pressures were taken following a 3 minute rest period. Mean arterial pressure (MAP) was estimated as [.3(SBP-DBP)]+DBP. Pressures were also assessed at max exercise and at 1, 3, and 5 minutes post exercise. An analysis of covariance (ANCOVA) with PCTFAT as a covariate was used to determine if differences remained among BMICAT in adjusted values for max exercise and all recovery pressures. After ACOVA adjustment, all maximum and recovery pressures were different among BMICAT with statistical significance found at max exercise and 1 minute post exercise. After adjustment for PCTFAT, differences remain in blood pressures among BMI categories. **Table: adjusted MAP means ± SEE, letters with same superscript are not sig. different (p< 0.05)**

BMICAT	**MAX EX**	**1:00**	**3:00**	**5:00**
	MAP	**MAP**	**MAP**	**MAP**
NW	109.9±2.2 [a]	106.8±2.3 [a]	99.4± 2.0 [a]	95.1± 2.6 [a]
OW	111.5±1.6 [a]	109.7±1.7 [a]	103.8±1.6 [a]	100.7±2.2 [a]
OB	124.2±2.9 [b]	118.0±3.0 [b]	107.3±2.7 [a]	106.6±4.5 [a]