2C06-3 Relationship between estrogen receptor-beta gene polymorphism and carotid arterial thickness in Japanese women

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Purpose: To determine the effects of estrogen receptor-beta gene polymorphism on carotid arterial thickness and wall mass and the effects of the polymorphism on the relationship between cardiorespiratory fitness and the carotid arterial morphological makers in healthy Japanese women.

Methods: Five hundred ten healthy Japanese women (20-84 years old) participated in a cross-sectional study. ESR2 (rs1271572, G>T) polymorphism was determined by real-time PCR with Taqman probe. Carotid arterial intima-media thickness (IMT) and wall mass were calculated from ultrasound images. Cardiorespiratory fitness was evaluated by VO2peak.

Results: Carotid arterial wall mass of individuals with the TT genotype was significantly larger than those of other genotypes. High fitness group had thinner carotid arterial IMT than in low fitness group. The genotype had no impact on difference of morphological markers of carotid arterial wall associated with cardiorespiratory fitness level.

Discussion: Estrogen receptor-beta gene polymorphism is associated with increased arterial wall mass in Japanese women but had no impact on their differences associated with cardiorespiratory fitness level.

Key words: estrogen receptor, SNPs, atherosclerosis

2C06-4 Effects of smoking habit on Cardio-Ankle Vascular Index (CAVI) at rest and after underwater exercise

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Purpose: The purpose of this study was to examine the effects of smoking habit on Cario-Ankle Vascular Index (CAVI) at rest and after underwater exercise in young subjects.

Methods: Nineteen healthy males, including eight smokers, voluntarily participated in this study. They performed arm cranking exercise at sitting position for 20 minutes in the bathtub. The condition was with or without water. We measured oxygen uptake (VO2) and heart rate (HR) during the exercise. We measured CAVI for 4 times, at pre-exercise and every 5 minutes for 15 minutes after exercise. During the exercise, we asked the subjects about respiratory distress and arm fatigue. We analyzed them into 4 groups, such as smokers-land condition, smokers-water condition, nonsmokers-land condition, and nonsmokers-water condition.

Results: CAVI at pre-exercise was significantly higher in the smokers group than nonsmokers group. After exercise, CAVI was higher than at base in both groups. The VO2, HR, respiratory distress, and arm fatigue were not significantly different among all groups. All measurements were not significantly different between the exercise environments.

Conclusion: This study suggested that the effects of smoking habit on CAVI by underwater exercise were not significant, but smoking habit decreased arterial elasticity even in young males.

Key words: CAVI, underwater exercise, smoking habit