

Correlation Among Hemodynamics and Selected Biochemical Parameters in Hispanic College Students

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ABSTRACT

PURPOSE: The purpose of this study was to examine the correlation among large arterial elasticity index (LAEI), small arterial elasticity index (SAEI), mean arterial pressure (MAP), stroke volume (SV), cardiac output (CO), systemic vascular resistance (SVR), total vascular impedance (TVI), pulse pressure (PP), cardiac ejection time (CET), systolic blood pressure (SBP), diastolic blood pressure (DBP), fasting blood glucose (GLU), total cholesterol (TC), high density lipoprotein (HDL) in Hispanic college students.

METHODS: Twenty-seven (13 males and 14 females) Hispanic college students (age= 22.00 ± 4.26) volunteered to participate in this study. Each subject visited the exercise physiology lab twice, where the informed consent form was read and signed before any measurement took place. On day 1, each participant completed a medical history questionnaire and demographic data were collected. On the second day, fasting blood samples (at least 8-hr) were collected to measure TC, HDL, and GLU. After lying down in the supine position for 10 minutes, resting LAEI, SAEI, MAP, SV, CO, SVR, TVI, PP, CET, SBP, and DBP were recorded. **RESULTS:** LAEI or SAEI were not correlated with GLU, TC, or HDL. MAP, DBP, and CO were positively correlated with GLU ($r= 0.599$, $p< 0.01$, & $r= 0.488$, $p< 0.05$, & $r= 0.707$, $p< 0.01$). CO was negatively correlated with HDL ($r= -0.564$, $p< 0.01$). No correlation was computed for SVR with GLU or TC or HDL. **CONCLUSION:** Since increases in DBP and MAP may augment the risk of future cardiovascular problems, GLU may be the key variable to examine in order to predict and/or prevent future cardiovascular events in the Hispanic population. The future studies should investigate the correlation between hemodynamics and selected biochemical parameters of blood in older adults and the elderly to understand the pattern and if aging has an impact on correlations between the variables measured in the study.