ACC.13
62nd Annual Scientific Session & Expo
TCT@ACC-i2
Innovation in Intervention

E1346
JACC March 12, 2013
Volume 61, Issue 10

Prevention

WAIST CIRCUMFERENCE PREDICTS ABNORMAL LEFT VENTRICULAR RELAXATION IN MEN: DATA OBTAINED THROUGH THOROUGH PHYSICAL EXAMINATIONS IN HEALTHY SUBJECTS

Poster Contributions
Poster Sessions, Expo North
Saturday, March 09, 2013, 10:00 a.m.-10:45 a.m.

Session Title: Prevention: Metabolic Syndrome
Abstract Category: 24. Prevention: Clinical
Presentation Number: 1102-18

Authors: *Haruki Sekiguchi, Ken Shimamoto, Naoki Sekiguchi, Yuri Ozaki, Kaoru Shimizu, Yufuko Takahashi, Fujio Tatsumi, Naoko Ishizuka, Masatoshi Kawana, Aoyama Hospital, Tokyo Women's Medical University, Tokyo, Japan, National Hospital Organization Yokohama Medical Center, Yokohama, Japan*

Background: Previous studies indicate that adults with metabolic syndrome (MetS) are at higher risk of left ventricular (LV) diastolic dysfunction. However, little is known about which MetS factors contribute to the development of LV dysfunction for given ages and gender.

Methods: A total of 1055 adults (mean age 63±13, 58.8% men) without diabetes mellitus, systolic dysfunction or other heart disease underwent a thorough physical examination including tissue Doppler echocardiography. We designated peak early mitral annular velocity (e') of less than 5.0 to indicate abnormal LV myocardial relaxation (LVMR). We performed single and multiple logistic regression analyses of e' and cardiovascular risk factors, including MetS factors and indicators of major organ dysfunction and evaluated results with regard to three age groups: young (≤ 49 yrs), middle-aged (50-69 yrs) and elderly (≥ 70 yrs) for both men and women.

Results: In men, 21.5% (133/620) of subjects showed abnormal LVMR, and e' correlated with abnormal waist circumference (WC ≥ 85cm) in the age ≥ 50 group, high fast plasma glucose (FPG ≥ 110mg/dl) in age < 50, and renal dysfunction (Creatinine Clearance < 60 ml/min) in age ≥ 70. In women, 14.9% (65/435) of subjects showed abnormal LVMR, and e' correlated with high diastolic blood pressure (DBP ≥ 85 mmHg) in age ≥ 50. Multiple logistic regression analysis indicated that abnormal WC correlated with abnormal LVMR in both middle-aged and elderly men (odds ratio [OR]; 2.5, 3.7, respectively, $P < 0.05$). Correlation was also observed between abnormal LVMR and renal dysfunction in elderly men (OR 3.6, $P < 0.05$). In women, only high DBP in the middle-aged and elderly groups showed a significant correlation with abnormal LVMR (OR 5.6, 4.3, respectively, $P < 0.05$). During the follow-up period (mean 52 months), 12 (1.1%) subjects were hospitalized due to heart failure of which 75% (9/12) had abnormal LVMR at the time of observation.

Conclusion: Risk factors for LVMR varied according to age and gender. Among MetS risk factors assessed in a thorough physical examination, waist circumference for men age ≥ 50, and DBP for women age ≥ 50 appeared to be useful predictors of diastolic dysfunction.