



## Pericardial/Myocardial Disease/Pulmonary Hypertension

### CARDIOVASCULAR EFFECTS OF ONE YEAR OF ALAGEBRIUM AND ENDURANCE EXERCISE TRAINING IN HEALTHY OLDER INDIVIDUALS

Moderated Poster Contributions

Poster Sessions, Expo North

Sunday, March 10, 2013, 9:45 a.m.-10:30 a.m.

---

Session Title: Potential Ways to Improve Myocardial Function with Pre-Existing Therapies

Abstract Category: 23. Pericardial/Myocardial Disease

Presentation Number: 1206M-142

---

Authors: *Naoki Fujimoto, Jeffrey L. Hastings, Graeme Carrick-Ranson, Keri M. Shafer, Shigeki Shibata, Paul S. Bhella, Shuaib M. Abdullah, Kyler W. Barkley, Kara N. Boyd, Sheryl A. Livingston, Dean Palmer, Benjamin D. Levine, Univ of TX Southwestern Med Ctr, Texas Health Presbyterian Hospital, Dallas, TX, USA, Mie University Graduate School of Medicine, Tsu, Japan*

**Background:** Lifelong exercise training maintains a youthful compliant left ventricle (LV), while a year of exercise training started later in life fails to reverse LV stiffening, possibly because of accumulation of irreversible advanced glycation endproducts (AGE). Alagebrium breaks AGE crosslinks and improves LV compliance in animals. However, it is unclear whether one year of exercise with alagebrium could improve LV compliance in older humans.

**Methods:** 62 healthy subjects were stratified into 4 groups: a) Sedentary+placebo; b) Sedentary+Alagebrium 200mg/day; c) Exercise+placebo; and d) Exercise+Alagebrium. Subjects underwent invasive measurements with right heart catheterization to define Starling and LV pressure-volume curves; secondary functional outcomes included cardiopulmonary exercise testing and arterial stiffness. Fifty seven/62 subjects (67±6 yrs;37f/20m) completed one year of intervention followed by repeat measurements. Pulmonary capillary wedge pressures and LV end-diastolic volumes were measured at baseline, during decreased and increased cardiac filling. LV compliance was assessed by the slope of LV pressure-volume curve.

**Results:** After intervention, LV mass and exercise capacity were increased by exercise training, but not by alagebrium. Alagebrium showed a modest improvement in LV compliance (Medication\*Time p=0.04), with the most prominent improvement observed in Exercise+Alagebrium (by 20%, p=0.07). This change in LV stiffness was equivalent to that from early to late middle-age (~15 years) in healthy aging. Starling curves and arterial stiffness were unaffected in all groups.

**Conclusion:** Alagebrium by itself had no effects on hemodynamics, LV geometry, or exercise capacity. Alagebrium might have favorable effects on LV compliance and modestly reverse the age-associated LV stiffening when combined with exercise training.