

ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #576

1. Full Title: Clinical and Hemodynamic Correlates of Left Ventricular Mass in African-Americans

Abbreviated Title (length 26): Correlates of LV Mass

2. Writing Group (list individual with lead responsibility first)

Lead: Vuyisile Nkomu / Donna K. Arnett

Address: University of Minnesota

Division of Epidemiology

1300 South Second Street, Suite 300

Minneapolis, MN 55454-1015

Phone: (612) 624-8863

Fax: (612) 624-0315

Email Address: Arnett@epivax.epi.umn.edu

Thomas Skelton, Phil Liebson, Emelia Benjamin, Robert McMaster, Bruce Duncan, Richard Hutchinson

3. Timeline:

Analysis will begin immediately. Draft anticipated mid June, 1998

4. Rationale:

While left ventricular hypertrophy has been shown to be a strong and independent predictor of morbidity and mortality from cardiovascular disease. However, factors associated with its variability have only been recently and incompletely described. Previous studies describing clinical and hemodynamic correlates of left ventricular mass (LV mass) are limited by small sample sizes, the use of narrowly selected populations, the use of a limited number of variables, or by the use of experimental models not easily extrapolated to human populations. Recently, relations of echocardiographic LV mass to body size, sex, age, resting blood pressure, Doppler-derived stroke volume (SV), and indexes of myocardial performance in a large population of Native Americans participating in the Strong Heart Study were published. (Devereux et al Relations of Left Ventricular Mass to Demographic and hemodynamic Variables in American Indians: The Strong heart Study. *Circulation* 1997;96:1416-1425). We propose to characterize clinical and hemodynamic correlates of echocardiographically determined LV mass in males and females belonging to a population of African Americans participating in the Atherosclerosis Risk in Communities (ARIC) Study.

5. Main Hypothesis:

a) Describe clinical and hemodynamic correlates of LV mass and relative wall thickness.

b) Hemodynamic variables will be more strongly associated with LV mass in African Americans than published associations in Caucasians and Native Americans.

6. Data (variables, time window, source, inclusions/exclusions):

Clinical Variables

Height
Weight
Age
SBP
DBP
Smoking (current @ Visit 3 or 4)
Smoking (former @ Visit 3 or 4)
Insulin
Alcohol
Physical Activity
LDL
HDL
Family History of HTN (from ARIC)
Waist hip ratio

Echo Variables

LV Mass
PWTd, PWTs
LVEDd, LVEDs
LVEDd/BSA
SV (AOVTI X ACSA)
MWS
RWT (IVST+PWT/LVIDd)
MV-E integral, peak
MV E/A ratio (from integral, peak)
Meridional ESS-from stress formulas
Peripheral vascular resistance (CO/MAP)
Pulse pressure/stroke volume ratio (pulse pressure=SBP-DBP)
Concentric hypertrophy (RWT, 0.45 + LVH)
Eccentric hypertrophy (RWT > 0.45 no LVH)
ESS/LVESDI (meridional and circumferential)
FS/ESS
SVI
ESDI
Vcf

Exclusions:

Wall motion abnormalities detected by echo
>=2+ mitral or aortic regurgitation
Hx of MI or revascularization procedures (baseline, incident, AFU)
ECG MI
Ejection fraction <50%
Fractional shortening <28%