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)
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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%