

ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #273

1. Title:

Family Risk Score of Coronary Heart Disease Predicts Amounts of Preclinical Carotid Atherosclerosis
Abbreviated Title: Relation IMT/Site to FRS

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

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3. Timeline:

Analyses three months, manuscript completion-three additional months.

4. Rationale:

The familial aggregation of the major CHD risk factors and of the clinical manifestations of CHD are well documented. Less information is available on the importance of familial factors for atherosclerosis per se, and most of the data which are available derive from autopsy or angiographic studies of probands, neither of which provide a population representative sample of probands free of clinical evidence of CHD.

ARIC manuscript #039 (Harris) titled, "Ultrasound and family history" reported an association between parental history of CVD and carotid artery far wall thickness in case control mode. We propose to report on the quantitative relation between the family risk score and site specific measures of intima-media thickness, each as a continuous attribute. This approach will extend the results of the earlier Harris paper beyond its qualitative, categorical perspective and also includes a multi-variable study of the quantitative relation of the family risk score to intima-media thickness at each of its six measured sites.

The family at risk score is based on the comparison of the observed number of CHD events in the family for first degree relatives of probands compared with the expected number of affected family members based on the age specific incidence of CHD in the Framingham study. The CHD events used in the computation of ARIC-based FRS are not yet validated. Subsequently, a score could be used from CHD events validated by the Family Health Study.

5. Main Hypothesis:

- (1) IMT is positively associated with FRS at each of the six measured sites.
- (2) The relation of IMT to FRS quantitatively varies among carotid artery sites.
- (3) The relationships do not vary by race nor gender.
- (4) IMT/FRS relationships are only partially accounted for by levels of the major risk factors in the probands; i.e., there is a residual effect of the FRS not explained by the major CHD risk factors in the probands.

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

Visit 1: Age, race, sex, FRS, site specific IMT, systolic & diastolic blood pressure, smoking, height, weight, serum cholesterol, HDL, LDL, triglycerides, Lp(a), PREV CHD, education