ARIC STUDY MANUSCRIPT PROPOSAL

Manuscript #098

1. Title:
Apo[a] Size: Case-Control Analysis of Atherosclerosis & Established Risk Factors

2. Writing Group:
(lead) S. Brown J. Morrisett W. Patsch K. Dunn
E. Davis (Coordinating Center Contact)

3. Timeline:
The major step required will be performing apo[a] phenotyping on all case control pairs. This will be accomplished by
performing this analysis on the excess plasma remaining from other lipid analyses.

4 . Rationale:
The elevation of Lp[a] levels is known to be an independent risk factor for coronary heart disease. It is also known that there is a correlation between Lp[a] concentration and apo[a] molecular weight. In a well-defined case-control population, the correlation of specific apo[a] phenotypes to degree of atherosclerosis and other established risk factors has not been
determined.

The ARIC Study allows for the examination of the association of progressive carotid wall thickness to determined apo[a]
phenotypes in case-control pairs.

5. Main Hypothesis/Issues to be Addressed:
1). Apo[a] molecular weight will correlate inversely with Lp[a] plasma concentrations.
2). Smaller apo[a] polymorphs are correlated with increased carotid wall thickenings in cases.
3). Other established risk factors are correlated to apo[a] polymorph molecular weight.
4). Covarients, such as age and race, will be examined by multivariate analysis to determine the effect and significance of these variables.

6. Data Requirements:
Data analysis will be performed by Dr. K. Dunn at Baylor College of Medicine, Department of Medicine. Apo[a] phenotype data will be collected. Dependent variables: lipoproteins, apolipoproteins, hemostatic factors, medical
history, body mass index, antihypercholesterolemic medication, diabetes, blood pressure, smoking status, alcohol consumption,
physical activity, gender, race, age, field center. Independent variables: average and maximum far wall thickness at the common
and internal carotid artery and its bifurcation.

Keywords: Apo[a], case-control