

ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #096

1. Title:

LDL Size: Case-Control Analysis of Atherosclerosis & Established Risk Factors

2. Writing Group:

(lead) S. Brown W. Patsch A.M. Gotto, Jr.
E. Davis (Coordinating Center Contact)

3. Timeline:

The major steps required will be compiling all LDL phenotyping data from at least the first 200 case-control pairs

4. Rationale:

The elevation of LDL cholesterol is believed to be a causal factor in the initiation of atherosclerosis. Gradient gel electrophoresis has characterized LDL particles into at least two major distinct subclasses. Evidence has been presented in which there is an association of the LDL subclasses or phenotypes to atherosclerosis.

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

5. Main Hypothesis/Issues to be Addressed:

- 1). LDL phenotype B will be associated with increased carotid wall thickening.
- 2). LDL phenotype B will be associated with significantly higher LDL-chol and apolipoprotein B levels and significantly lower HDL-chol levels compared to LDL phenotype A.
- 3). Covariants, such as age, 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.

LDL 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.