

ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #147A

1. Title (length 26):

ABI & CVD Manifestations

Full title: Ankle-Brachial Index (ABI) and Cardiovascular Disease Manifestations: The ARIC Study

2. Writing Group:

(lead) ZJ Zheng, AR Sharrett, LE Chambless, WD Rosamond, FJ Nieto, D Sheps, G Heiss

3. Timeline:

Analyses and draft manuscript are completed, and will be distributed to the writing group within two weeks.

4. Hypotheses and Rationale:

This is a follow-up to ARIC Manuscript #147, which addresses the prevalence and risk factors of lower extremity arterial disease (LEAD), defined by the Ankle-Brachial Index (ABI). One of the intriguing and counter-intuitive findings in MS #147 is that the prevalence of LEAD, defined as an ABI less than or equal to 0.90, was higher in women than in men, mainly due to the gender difference in ABI distribution. Although the ABI is used extensively in epidemiologic studies and clinical practice, the conventional cutpoints for an abnormal ABI, such as 0.9 or 0.8, were originally developed from clinical studies of patients referred for angiography of the lower extremities, but may not reflect the properties of ABI in the populations. We have found no studies in the literature that have examined whether clinically manifest and subclinical atherosclerosis are related to ABI over a wide range of its measurements (including values greater than 0.9), and whether the association differs by race and gender. We hypothesize that, as a marker of atherosclerosis, a decreasing ABI would show a graded or dose-response relation to manifestations of atherosclerosis, and its preclinical measurements, independent of gender and race.

5. Data:

The ARIC visit 1 data set is used to test the main hypotheses. Dependent variables include (1) prevalent coronary heart disease, (2) physician diagnosed stroke or TIA, (3) carotid wall thickening, defined as carotid IMT greater than or equal to 90th percentile, and (4) carotid plaque at any 6 sites. The main independent variable is the ABI, used as continuous and categorical measurements. Covariates include sex, race, and age. Established CVD risk factors will be considered as potential confounding factors (not as explanatory variables) in relating ABI to manifestations and measures of atherosclerosis. Data analysis was performed by the lead author.