ARIC Manuscript Proposal

Title: Incidence of symptomatic and asymptomatic lower extremity arterial disease: the ARIC study

Brief Title: Incidence of LEAD

2. Writing group:

Address for correspondence:

*Cardiovascular Disease Program, Dept. of Epidemiology, UNC School of Public Health, 137 E. Franklin St., Nations Bank Plaza, Suite 306, Chapel Hill, NC 27514.

Email: beth.weatherley@sph.unc.edu.

Timeline

Collection of visit 4 ankle and systolic blood pressure measurements will be complete by February 1999. A draft manuscript is anticipated by November 1999. Analysis will begin on a preliminary data set.

Rationale

Lower extremity arterial disease (LEAD), an important and easily detectable component of subclinical atherosclerotic disease, has not been studied sufficiently. Although few deaths are directly due to LEAD (or peripheral arterial disease in general), individuals with LEAD are at high risk of death from cardiovascular disease. The incidence of intermittent claudication (IC) has been described in the Framingham, Whitehall, Basel, and Edinburgh longitudinal studies, but little is known regarding the epidemiology of incident, asymptomatic LEAD. The ratio of the ankle systolic blood pressure to the brachial systolic blood pressure (the Ankle-brachial index@ABI) is used clinically to diagnose LEAD; an ABI of less than 0.9 is typically considered diagnostic. The distribution of the ankle-brachial index (ABI) differs somewhat for men and women, however, so that the choice of cutpoint (0.9 v. 0.8) affects the relative prevalence of ABI-defined LEAD between genders. The change in ABI over time within a general population has been described only in the Edinburgh Artery study. Prevalent ABI-defined LEAD is associated with risk factors for atherosclerosis in the cerebral and coronary vascular beds, especially smoking and diabetes. Empirical evidence on the predictors of ABI-defined LEAD incidence in populations is not available in the literature.

Main Hypotheses/Study Questions

Goals of the study are to:

Describe the change in the ankle-brachial pressure index (ABI) over a 6-9 year period, and
the change in the relationship between ankle and brachial systolic blood pressures, in population subgroups defined by age, gender, and race.

Compute the 6-9-year cumulative incidence of LEAD, defined as ABI #0.9 and ABI #0.8, among population subgroups defined by age, gender, and race.

Compute the incidence of clinically manifest LEAD defined by hospital discharge diagnoses and/or lower extremity revascularization procedures.

Describe the association between baseline blood pressure, established risk factors (e.g., smoking, dyslipidemia, diabetes), anthropometric indices (e.g., height) and the change in ABI and the incidence of ABI-defined LEAD.

Compute the 6-9-year cumulative incidence of intermittent claudication and/or describe the proportion of those with LEAD who are symptomatic.

Data

ARIC cohort data describing ankle and brachial systolic blood pressure measures from visits 1, 3 and 4, with corresponding dates of examination and baseline attributes (age, gender, race, CVD risk factors) of study subjects from visit 1 will be used for these analyses.

References


