ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #185

1. Title:
Dietary Patterns in Atherosclerosis

2. Writing Group:
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3. Timeline:
Submit proposal to publications committee:                                  1/93
Data sets requests:                                                                       2/93
Complete analysis:                                                 tentative:         4/93
Submit first draft to publications committee:            tentative:         6/93
Submit paper to journal:                                         tentative:         7/93

4. Rationale:
The proposed research is concerned with the dietary food patterns that are associated with the presence of atherosclerosis, as measured by B-mode ultrasound in the ARIC population. As confirmed by Dr. Tell, this should not overlap with either manuscript #42 nor #42a, since these papers deal with nutrient data and the proposed paper will investigate the relationship between food intake patterns and wall thickness.

There is a large body of indirect evidence of a relationship between diet and heart disease (1,2). Descriptive epidemiological studies and some prospective cohort studies (2-5) indicate a positive relationship between heart disease and dietary intake of cholesterol and saturated fat and an inverse relationship with calories, fiber, monounsaturated and polyunsaturated fats. Seven dietary factors have been implicated in the process of atherosclerosis (6). The cholesterol raising, and thus atherogenic nutrients are saturated fat and cholesterol, (6-8). Five protective dietary factors have also been suggested. These include omega-3 and omega-6 polyunsaturated fats in place of saturated fat, monounsaturated fats, dietary fiber and antioxidants (6,9,10). These nutrients have been identified to be well represented in specific foods in the US diet (11). Additionally, food group consumption, as defined from a food frequency questionnaire, has been validated as representative of an individual's nutrient intake (12). Thus it is proposed to analyze the dietary intake of the ARIC participants by foods and groups of food which are representative of both the protective and potentially atherogenic foods.

Since there are some analyses that indicate dietary differences between races in the US (13,14) and since there are differences in both prevalence of atherosclerosis and in CHD and IHD mortality rates between the races within the ARIC study participants (15,16), it is proposed to investigate the dietary differences that may exist between the black and white sub populations within the ARIC study participants who do and do not have atherosclerosis. The results of this study will be the first to provide an analysis of the relationship between atherosclerosis, as assessed by carotid arterial wall thickness and food intake, as assessed by a food frequency questionnaire.
5. Main Hypothesis:
That increased arterial wall thickness in the black and white subjects in the ARIC study is associated with particular dietary patterns as described below:
1) High intakes of: high fat meats and meat products, full fat dairy products, fried foods, high fat baked goods and desserts,
   animal fats in dressings and spreads added in cooking
2) Low intakes of: fruits and vegetables high in vitamins A and C, bread, cereal and grain products high in fiber, fish and
   vegetable products high in omega-3 and omega-6 fatty acids
That the diet - atherosclerosis relationship does not differ between black and white subjects.

6. Data (Study Population, Source, Inclusions, Time Window, and Variables):
ARIC participants, without diabetes, with both dietary data and ultrasound measurement data from their visit one examination.

Variables:
A. Dependent: arterial wall thickness, Grand Mean and imputed cite specific measurements
B. Independent: Dietary: Food frequency questionnaire dietary data, i.e. DTIA 1 to DTIA 94, and total calories.
   Non-dietary: race, gender, age, height, weight, BMI, leisure and sport activity, smoking status, systolic and
diastolic blood pressure, hypertensive status, total, LDL and HDL-cholesterol, triglycerides, education