ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #463

1. a. Full Title: Dietary cholesterol and incident CHD: The ARIC Study
   b. Abbreviated Title: Dietary cholesterol and incident CHD

2. Writing Group:
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3. Timeline:

   Manuscript draft by end of 1997

4. Rationale:

   Previous cohort studies have found an association between dietary cholesterol and CHD mortality, independent of serum total cholesterol. One concern has been the inability of previous studies to adjust for specific lipoprotein components of total cholesterol. ARIC has the advantage of lipoprotein levels in addition to dietary data and other covariates. A specific interaction of interest involves adiposity (body mass index and waist to hip ratio). One previous study (Chicago Western Electric) has reported that the association between dietary cholesterol and CHD mortality is modified by obesity (BMI, in this case). We would examine that possibility in ARIC. If the incident data look promising, subsequent manuscripts would focus on 1) IMT progression as an outcome and 2) the case-comparison design for examining post-prandial lipemia as a potential mechanism underlying the interaction.

5. Objectives/Hypotheses:

   1) Dietary cholesterol intake is positively associated with risk of incident CHD events, independent of plasma lipoprotein concentrations, age, gender, race, SES, smoking status, HTN, DM, family history of CHD, BMI, WHR and total energy intake.
2) Adiposity modifies this association, such that, fatter people show a weaker
association than thinner people.

Design: Cohort follow-up for incident events.

6. Data:

Cohort follow-up database
Inclusion: free of CHD at baseline, dietary and other data available, ETOH intake < 50
gm/day
Independent variables: Incident CHD events
Dependent variables: dietary cholesterol adjusted for total energy intake, BMI, WHR,
plasma lipoproteins (LDL, HDL), TG, age, gender, race, SES, smoking status, HTN, DM,
family hx CHD.
Analysis: Product-limit survival analysis by dietary cholesterol quantiles (given the
sample size of events, we will determine the number of quantiles prior to initiating the
analysis), Proportional hazards regression analysis. Examine BMI*dietary cholesterol
interaction by stratification, test using proportional hazards analysis.