ARIC MANSUCRIPT PROPOSAL FORM

Manuscript #315

1. Title: Weight change and wall thickness

2. Writing group:

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3. Timeline: Data for these analyses are already available as part of ARIC visit 1. We project that the analyses and writing will take place over the next year.

4. Rationale:

Several observational studies have produced inconsistent results regarding the association between weight loss or gain and risk of cardiovascular disease and/or mortality. Three recent studies used a similar approach to examine this issue, but found divergent results (Pamuk,1993;Willett, 1995; Loconsky, 1995). All three studies used reported weight from the past and current weight to calculate weight change, and followed participants forward in time to observe events. Pamuk et al. used the NHANES Epidemiologic Follow-up Study to examine the effect of change in weight from maximum lifetime weight on all cause and CVD mortality. Participants were 45 to 74 years of age at baseline and were followed for approximately 13 years. Risk of death from CVD was increased among subjects who at baseline had lost as little as 5% of their maximum lifetime weight. Among men and women with a maximum BMI between 26 and 29, the relative risk of CVD death associated with a weight loss of 5-15% were 2.1 and 3.6 for men and women repectively. Loconsky et al. examined weight change later in life and also found increased risk of mortality with weight loss. In participants over 70 years of age, weight loss from age 50 increased the risk of all-cause mortality. Compared with participants with stable weight, a loss of 10 percent or more of body weight was associated with a relative risk for all cause death of 1.69 [1.45-1.97] in men and 1.62 [1.38-1.90] in women. These results contrast with those of Willett et al. who examined the effects of weight change on the incidence of TED using the Nurses Health Study cohort. Changes in reported weight from age 18 to baseline were determined when participants were 30 to 55 years of age. Over 14 years offollow-up, women who had gained weight (since age 18) were at increased risk of CHD compared with those of stable weight. Relative risks increased in a monotonic fashion from 1.25 [1.01 - 1.55] for a 5 to
7.9. kg gain to 2.65 [2.17-3.33] for a gain of 20 kg or more. Weight loss was not associated with a significant increase in CHD risk.

The ARIC data set offers a unique opportunity to examine the effects of weight change on intimal medial wall thickness. Weight change from age 25 to baseline can be
calculated from data available in visit one. This work would determine the association between weight change from age 25 to baseline and wall thickness and examine the impact of age, gender, body weight, educational level and ethnicity on this association.

5. Main Hypotheses/Issues to be addressed:

(1) What is the association between change in weight from age 25 to baseline and intimal medial wall thickness?

(2) Does this association vary among the following the groups defined by:
- gender
- BMI
- waist circumference
- ethnicity
- education
- age

6. Data requirements:

Variables needed:

Exposure:
- weight
- weight at age 25
- height

Outcome:
- wall thickness

Other:
- center
- age
- gender
- ethnicity
- smoking
- wine intake
- beer and liquor use
- education
- income
- physical activity
- waist circumference
- waist to hip ratio
- blood pressure
- cholesterol
- Kcal intake
- percent Kcals from fat
- Keys score