

ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #172

1. Title:

Albumin, Creatinine, and CHD

Full Title: Levels of Albumin, Creatinine, and Incident Coronary Heart Disease

2. Writing Group:

(lead) G. Heiss

J. Eckfeldt

A. Folsom

L. Chambless

R. Sharrett

E. Shahar

M. Szklo

3. Timeline:

This writing group proposal is submitted together with an abstract for the Oslo meetings. The manuscript timeline is conditional upon acceptance of this abstract. In either case, analyses will include only validated incident events.

4. Rationale:

Since the report of an indirect association between serum albumin levels and mortality (including cardiovascular mortality) by Phillips, et al, this association was tested in population studies but not uniformly replicated. Salive, et al, have reported that -- in older adults -- serum albumin levels are indirectly associated with a series of cardiovascular risk factors, as well as ill health. Other possible mechanisms for these associations have been put forward, inclusive of the anti-oxidant properties of albumin.

In addition to being a marker of increased risk of mortality among diabetics and individuals with impaired kidney function, creatinine levels have been found to be prognostic of cardiovascular disease in randomly sampled hypertensives (Samuelsson, et al). Agamah, et al, have shown that serum creatinine levels are strongly influenced by diastolic blood pressure in a general population sample, a phenomenon which can be determined as early as by age eleven. Although race and gender differences in serum creatinine levels are known to be associated with body mass, descriptive, epidemiologic information on this chemistry and its population correlates is lacking to some degree and can be supplemented from the ARIC data.

5. Hypotheses:

- a) There is an inverse association between albumin concentration and incidence of CHD;
- b) There is a direct association between creatinine concentrations and incidence of CHD, controlling for diabetes mellitus and hypertension.

6. Data Needed:

Baseline information (Visit 1) as well as incident events (validated according to the ARIC algorithm).

References:

- 1) Phillips A, Shaper AG, Whincup, Ph. Association between serum albumin and mortality from cardiovascular disease, cancer, and other causes. Lancet 1989; 2(8677):1434-6.

- 2) Salive ME, Cornoni-Huntley J, Phillips CL, et al. Serum albumin in older persons: Relationship with age and health status. J Clin Epidemiol 1992; 45(3):213-21.
- 3) Agamah ES, Webber LS, Lawrence M, et al. Serum creatinine and its relation to cardiovascular disease risk variables in children and young adults from a biracial community. The Bogalusa Heart Study. J Lab Clin Med 1990; 116(3):327-34.