

ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #230

1. Title:

Renal function among diabetics by race

2. Writing Group:

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3. Timeline:

Immediate

4. Rationale:

Compared to their diabetic white counterparts, diabetic African Americans suffer an excess incidence of end-stage renal disease (relative risk > 2.0). While racial differences in blood pressure, glycemic control, and socio-economic status have been advanced as possible explanations, the cause of this large disparity remains uncertain. No population-based study has compared the early decline in renal function in blacks and whites. Such a comparison could help identify modifiable factors in blacks and thus provide the basis for a strategy to prevent diabetic end-stage renal disease. At baseline, the ARIC cohort contains 725 black diabetics and 814 white diabetics.

5. Main hypotheses:

Compared to their white counterparts, renal function declines more rapidly in black diabetics.

Racial differences in glycemia, blood pressure, and socio-economic status account for much of the disparity.

6. Data:

Dependent variable: The change (visit 1 - visit 2) in creatinine clearance (C) as estimated by the following equations

$$\text{For men: } C = [(140-a) \times W]/[70 \times S]$$

$$\text{For women: } C = [(140-a) \times W]/[70 \times S],$$

where: a = age (yr), W = weight (kg), and S = serum creatinine (mg/dl).

Independent variables: Race, blood pressure, blood glucose, socioeconomic status, medication use

NOTE: This proposal overlaps with MS #223 submitted by Josef Coresh and colleagues. Coresh proposes to investigate risk factors for hypercreatinemia in the general population. In contrast, this proposal focusses specifically on diabetics and on the interaction between race and putative renal disease. Coresh, who will join this writing group, and his colleagues support this separate proposal which will make use of their analytic approach and of their results in the larger cohort to provide a context for this important sub-group analysis.