Manuscript #388

1. a. Title: Association of cognitive function with hypertension, its treatment and control - The ARIC Study.
   b. Abbreviated title: cognition and elevated BP

2. Writing Group: Duanping Liao (lead), Jingping Mo, Aaron Folsom, Moyses Szklo, David Knopman, Thomas Mosley, Gerardo Heiss

   Address:
   Dept. of Epidemiology, CVD Program, UNC School of Public Health, 137 E. Franklin St.
   Nations Bank Plaza, Suite 306, Chapel Hill, NC 27514

   Phone:
   (919) 966-3161

   Fax:
   (919) 966-9800

   Email:
   duanping_liao@unc.edu

3. Timeline:
   Submit Proposal to Publications Committee May, 1996
   Complete Analysis October, 1996
   Submit first draft to Publications Committee December, 1996
   Submit to Journal February, 1997

4. Rationale:

   Cognitive function has received increased attention in the evaluation of the consequences of hypertension, its
treatment and control. The findings on the association between hypertension and cognitive function have
been controversial. All population-based reports are cross-sectional surveys of older adults. The possibility
of a continuous relationship between the levels of blood pressure and cognitive function has not been
examined. During the second follow-up examination of ARIC, cognitive function was measured on the
entire cohort using three neuropsychological tests: the Delayed Word Recall test, the Digit Symbol subset of
the Wechsler Adult Intelligence Scale-Revised (WAIS-R), and the Oral Word Association (or Word
Frequency) test of the Multilingual Aphasia Examination. During the third follow-up examination, the same
tests were repeated on a subsample of the Jackson and Forsyth participants. This information allows us to
examine the associations of hypertension, its treatment and control, and the levels of blood pressure with
cognition at the population level.

5. Main Study Questions:

   (1) Are the cognitive function test scores associated with JNC V-defined hypertension at the population
   level?
   (2) Are cognitive function test scores in hypertenives associated with the “duration” of hypertension,
estimated by comparing the scores between incident and prevalent hypertensives?
(3) Are cognitive function test scores in hypertensives associated with the treatment of hypertension?
(4) Are cognitive function test scores in treated hypertensives related to the control of hypertension?
(5) What is the effect of the levels of blood pressure on cognitive function?

6. Data (variables, source, inclusions/exclusions):

The following variables are needed for this analysis: Visit 2 cognitive function data, age at Visit 2, hypertension status at Visit 1 and Visit 2, antihypertensive medication and blood pressure at Visit 2 to Visit 2, race, gender, field center, education levels, smoking status, BMI, total cholesterol and its fractions at Visit 2.

**Note: See memo below

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**MEMO**

TO: Richard Hutchinson, Chairman, ARIC Publications Committee
FROM: Duanping Liao
DATE: May 31, 1996
RE: ARIC Manuscript Proposal

Attached for your consideration is an ARIC Manuscript writing group proposal, entitled "Association of cognitive function with hypertension, its treatment and control - The ARIC Study." All proposed co-authors have reviewed and approved the proposal.

As you will see, there is a slight overlap with Jim Cerhan's ARIC paper (MS#148), in which he addressed a general pattern of association between cognitive function and all established CVD risk factors, including categorically defined hypertension status. The research questions listed in our current proposal have not been fully addressed in Jim's paper, such as, the associations of cognitive function and the treatment/control of hypertension, the duration of hypertension, and more importantly, the levels of blood pressure additional to categorically defined hypertension.

Best regards!