ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #418

1. a. Full Title: Occurrence of Unrecognized Myocardial Infarction in a Middle-Aged Bi-Racial Population: The ARIC Study.

b. Abbreviated Title: Unrecognized MI Occurrence

2. Writing Group:

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3. Timeline: Analyses on incidence through 1993 are expected to be completed within 4 months with the final paper including data through 1994; a draft manuscript can be presented to the writing group within 2 months after the completion of the analysis.

4. Rationale: A substantial proportion of myocardial infarction (MIs) occur without typical chest pain or other cardiac symptoms, and thus remain clinically unrecognized by patients or/and their physicians until routine electrocardiograms (ECGs) reveal unequivocal evidence of infarction with abnormal Q waves or complete loss of R waves. The Framingham Heart Study estimated that approximately one-third of MIs occurring during 30 years of follow-up were identified only by ECG changes at routine biennial examinations. Of these unrecognized MIs, almost half were totally silent, and the others caused atypical symptoms. Similar estimations were reported from the Honolulu Heart Program, the Reykjavik study, and others. Most of the previous studies on the epidemiology of unrecognized MI were limited in men, except for the Framingham Study, which reported that the proportion of unrecognized MI was higher in women except in group 75 or older. The risk factors associated with recognized MI are similar to that for unrecognized, and the prognosis (recurrent MI, CVD mortality and total mortality) of unrecognized MI is as serious as that of recognized MI, or even worse in the Honolulu Heart Program. Little information on the epidemiology of unrecognized MI is available in African-American populations.

5. Main Hypotheses:
1) The proportion of unrecognized/recognized incident MIs is lower than in any previous study. A preliminary look at ARIC data suggests only 10% of incident MIs were unrecognized, much less than the 20-60% reported elsewhere. Possibly symptoms are being recognized better in the 1990s. 2) The incidence of unrecognized MIs and the proportion of unrecognized/recognized MIs are higher in African-Americans than whites, and in women than men.

6. Data
ARIC baseline, follow-up ECGs and incidence data will be used for analyses. Incident unrecognized MI is defined as ECG-demonstrated MI without symptoms or prior occurrence of clinical MI. The main variables include ECG-MI, symptomatic MI. Other variables include center, age, race, gender.

Selected References:

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3) Yano K, MacLean CJ. The incidence and prognosis of unrecognized myocardial infarction in the Honolulu, Hawaii, Heart Program. Arch Intern Med. 1989;149:1528-32.

4) Nadelmann J, Frishman WH, Ooi WL et al. Prevalence, incidence and prognosis of recognized and unrecognized myocardial infarction in person aged 75 years or older: The Bronx Aging Study. Am J Cardiol. 1990;66:533-7.

5) Fazzini PF, Prati PL, Rovelli F, et al. Epidemiology of silent myocardial ischemia in asymptomatic middle-aged men (The ECCIS project). Am J Cardiol. 1993;72:1383-8.

6) Sigurdsson E, Thorgeirsson G, Sigvaldason H, Sigfusson N. Unrecognized myocardial infarction: epidemiology, clinical characteristics, and the prognostic role of angina pectoris. The Reykjavik Study. Ann Intern Med. 1995;122:96-102.