ARIC MANUSCRIPT PROPOSAL FORM

Manuscript #297

1. Title:
The Risk of Incident Coronary Heart Disease Associated with Calcium Channel Blocker Anti-Hypertensive Therapy in the ARIC Cohort
Abbreviated Title: Calcium Channel Blocker and CHD Risk

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4. Timeline:
Submit Proposal to Publications Committee 03/20/95
Complete Analysis 05/20/95
First Draft 06/20/95
Submit first draft to Publications Committee 08/30/95
Submit to journal

5. Background and Rationale:
Previous studies have shown that diuretics and B-blockers used to treat hypertension are associated with decreased risk of myocardial infarction (MI). However, calcium channel blockers (CCB's) have not been shown to be beneficial in the primary prevention of MI. In fact, some secondary prevention trials involving the treatment of unstable angina pectoris have shown increased incidence of infarction and refractory angina pectoris associated with CCB's. Additionally, a recent population-based case-control study has suggested that CCB's may actually increase the risk of incident MI relative to other anti-hypertensive medications in hypertensive patients without prior clinical cardiovascular disease (CVD). Biologic mechanisms involved in these adverse outcomes are unknown, but may be related to coronary steal, negative inotropic effects, and possible dysregulation of endothelial derived relaxation factor. The investigation of the association of MI risk with CCB use is especially important in consideration of the greatly increased use of CCB therapy since the early 1980's.

6. Main Study Questions:
(1) Is calcium channel blocker therapy associated with increased risk of coronary heart disease (CHD) compared to other anti-hypertension agents in medically treated hypertensive ARIC cohort participants without CHD?
(2) What factors modify the above association?

7. Data and Methods
We propose to investigate the association between anti-hypertensive medications and the risk of incident CHD in hypertensive ARIC cohort members using anti-hypertension medications and without prior CHD at
visit 1. Anti-hypertension medication usage will be obtained from visit 1 data. We will consider potential biases such as differences in severity of disease between those using CCB's versus other anti-hypertensive agents. Incident event rates required for statistical power are being determined.

The following data are to be used:
(1) ARIC visit 1 medications, prevalent hypertension, blood press center, education, prevalent CHD, diabetes status, stroke status, angina status, smoking status, total cholesterol and its fractions.
(2) ARIC visit 2 medications, prevalent CHD, incident MI, sudden death.

At ARIC visit 1 there were about 3,700 cohort members who were receiving anti-hypertensive medications and were without CHD. Of these, approximately 300 were using CCB's.