

ARIC Manuscript Proposal # 839

PC Reviewed: 10/16/01

Status: A

Priority: 2

SC Reviewed: 10/17/01

Status: A

Priority: 2

1.a. Full Title: Association of Premature Ventricular Contractions (PVCs) with Incident Coronary Artery Disease

b. Abbreviated Title (Length 26 characters): PVCs and CHD

2. Writing Group (list individual with lead responsibility first):

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- 3. Timeline: Preliminary analysis completed. (analysis of associates of PVCs and association of PVCs with LV mass at visit 1 (ms# 189,189a) has already been completed and published (ms 189a) or accepted for publication (ms 189)). Completion of final analysis and a draft of paper to be complete by spring 2002.**
- 4. Rationale: Population based studies show a consistent relationship between PVCs on a standard ECG and subsequent coronary death. In contrast, clinical trials of antiarrhythmic drugs fail to show a relationship between suppression of PVCs and improved survival. However, the results of these trials may be misleading since drugs used in these clinical trials have major proarrhythmic properties that could mask clinical benefit conferred by the suppression of PVCs. The ARIC cohort study can help us understand the possible reasons for this inconsistency by assessing the contribution of PVCs to subsequent coronary mortality and events independently of known predictors of these events, particularly estimated left ventricular mass. Determining if PVCs are independent risk factors for coronary events is important as it will support the development of better antiarrhythmic drugs and encourage additional clinical trials to assess the benefits of suppression of PVCs.**
- 5. Main Hypothesis/Study Questions:**
- a. The presence of a PVC on a 2-min ECG is associated with subsequent cardiac (CHD) death.**

- b. The relationship of PVCs with CHD death is expected to be stronger for CHD death occurring within one hour of onset of symptoms compared to later CHD deaths.
- c. These relationships are independent of other known predictors of cardiac death.

6. Data (variables, time window, source, inclusions/exclusions): ARIC Visit 1 prevalence data (eg: presence and type of PVCs, hypertension, ECG estimated left ventricular mass, prevalent coronary heart disease (CHD), low and high density lipoprotein cholesterol, current smoking status, diabetes, educational attainment, gender, age, ethnicity); ARIC Cohort follow-up CHD events data through 1997 (or most current). Outcomes include death, incident CHD and its major components including fatal CHD, nonfatal CHD, cardiac procedures and silent myocardial infarction and time from onset of symptoms to death. Exclusions are limited to subjects with missing values for key variables at Visit 1. Cox proportional hazards regression will be used to assess the relationship between PVCs and time to incident CHD events (defined above). Models will be tested for violation of the proportional hazards assumption, that is, to assess if the association between PVCs at baseline and incident CHD varies across follow-up time. These models will be adjusted for covariates related to both PVCs and incident CHD (potential confounders defined above). We will also test for possible effect modification by prevalent CHD at baseline. Models will be run stratified for prevalent CHD, and if no interaction is present, adjusted for baseline CHD as a potential confounding variable.

7.a. Will the data be used for non-CVD analysis in this manuscript? ☐ Yes ☒ No

b. If Yes, is the author aware that the file ICTDER01 must be used to exclude persons with a value RES_OTH = "CVD Research" for non-DNA analysis, and for DNA analysis RES_DNA = "CVD Research" would be used? ☐ Yes ☐ No
(This file ICTDER01 has been distributed to ARIC PIs, and contains the responses to consent updates related to stored sample use for research.)

8.a. Will the DNA data be used in this manuscript? ☐ Yes ☒ No

8.b. If yes, is the author aware that either DNA data distributed by the Coordinating Center must be used, or the file ICTDER01 must be used to exclude those with value RES_DNA = "No use/storage DNA"? ☐ Yes ☐ No

9. The lead author of this manuscript proposal has reviewed the list of existing ARIC Study manuscript proposals and has found no overlap between this proposal and previously approved manuscript proposals either published or still in active status. ARIC Investigators have access to the publications lists under the Study Members Area of the web site at: <http://bios.unc.edu/units/csc/ARIC/stdy/studymem.html>
☒ Yes ☐ No