

ARIC Manuscript Proposal # 790

PC Reviewed: 04/ 04 /01
SC Reviewed: 04/05/01

Status: A
Status: A

Priority: 1
Priority: 1

1a. Full Title: Aortic valve sclerosis as a marker for cardiovascular morbidity and mortality in the African-American cohort: The Atherosclerosis Risk in Communities Study.

b. Abbreviated Title (Length 26 characters): Aortic valve sclerosis & outcome in AA

2. Working Group: Samdarshi, Skelton, Clark, Andrew, Arnett, Garrison, Jones

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3. Timeline:

Submit to Publication Committee 4/4/01

Analysis completed 7/11/01

Draft manuscript 8/11/01

Final manuscript 9/11/01

NHLBI and ARIC clearance 10/11/01

Submission for publication 11/11/01

4. Rationale: Aortic valve sclerosis (AVS) is more common in the general population than previously thought.(1) It is itself a distinct clinical entity , as well as a part of a continuum of aortic valve pathology which includes entities such as aortic stenosis in later life(2,3,4,5). AVS has been associated with an increased risk of angina, myocardial infarction, congestive heart failure, and stroke in some populations(6,7). In the elderly CHS cohort, AVS has been associated with a 50% increase in the risk for death due to cardiovascular events, even among patients who did not have any demonstrable obstruction across the aortic valve. Further, this increase in risk was evident in the absence of coronary heart disease. To date, few data exist on the prognostic importance of AVS in middle age. Furthermore, no study has been done to determine the cardiovascular significance of AVS in the relatively high-risk African American population.

5. Main Hypotheses:

-Aortic valve sclerosis is an independent risk for CV death and total mortality among middle-aged AA's.

-AVS is an independent risk factor for: a)stroke (b) CHD (c)angina among AA's

6. Data:

The prevalence of aortic valve sclerosis in the African-American cohort of ARIC will be determined based on echocardiographic examination data obtained from the 3rd ARIC visit.

Data from the two-dimensional assessment of the aortic and mitral valves (parasternal long and

short axis), left ventricular mass (calculated from M-mode echocardiographic data) and hemodynamic measurements (derived from doppler studies) will be used to determine the diagnosis of AVS and related cardiac findings/pathology. Incident CVD events and mortality available from ARIC surveillance will be used for longitudinal analysis. Cross sectional and longitudinal association of AVS with age, high blood pressure, lipid abnormalities, diabetes, smoking status, etc, will be ascertained in order to evaluate the relationship of AVS to CVD risk factors and morbid events.

7. References:

- 1) Lindroos M, Kupari M, Heikkila J, Tilvis R. Prevalence of aortic valve abnormalities in the elderly: an echocardiographic study of a random population sample. *J. Am. Coll. Cardiol* 1993;21:1220-5.
- 2) Frank S, Johnson A, Ross J Jr. Natural history of valvular aortic stenosis. *Br. Heart J* 1973;35:41-6
- 3) Chizner MA, Pearle DL, deLeon AC Jr. The natural history of aortic stenosis in adults. *Am. Heart J* 1980;99:419-24
- 4) Horstkotte D, Loogen F. The natural history of aortic valve stenosis. *Eur. Heart J* 1988;9-Suppl E:57-64
- 5) Peter M, Hoffmann A, Parker C, Luscher T, Burckhardt D. Progression of aortic stenosis: role of age, and concomitant coronary artery disease. *Chest* 1993; 103:1715-9
- 6) Teerlink JR, Newman TB, Schiller NB, Foster E. Aortic sclerosis, as well as aortic stenosis; is a significant predictor of mortality. *Circulation* 1997;96:Suppl:I-82 Abstract.
- 7) Arrow WS, Ahn C, Shirani J, Kronzon I. Comparison of frequency of new coronary events in older subjects with and without valvular aortic sclerosis. *Am. J. Cardiol.* 1999;83(4):599-600
- 8) Otto CM, Lind K, Kitzman DW, Gerish B, Siscorick DS: Association of aortic valve sclerosis with cardiovascular mortality and morbidity in the elderly. *N. Engl. J Med* 1999;341:142-7
- 9) Boon A, Cheriex E, Lodder J, Kessels F. Cardiac valve calcification: Characteristics of patients with calcification of the mitral annulus or aortic valve. *Heart* 1997;78:472-4
- 10) Honda T, Yano K, Matsuoka H, Hamada M, Hiwada K: Evaluation of aortic distensibility in patients with essential hypertension by using cine magnetic resonance imaging. *Angiology* 1994;45:207-12

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 ICTDER02 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 ICTDER02 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 ICTDER02 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****