

Bicuspid Aortic Valve: Inter-Racial Difference in Frequency and Aortic Dimensions

Sonal Chandra, MD, Roberto M. Lang, MD, Jeremy Nicolarsen, MD, Etienne Gayat, MD, Kirk T. Spencer, MD, Victor Mor-Avi, PhD, Marion A. Hofmann Bowman, MD, PhD
Chicago, Illinois

JACC: CARDIOVASCULAR IMAGING CME

CME Editor: Ragavendra R. Baliga, MD

This article has been selected as this issue's CME activity, available online at <http://imaging.onlinejacc.org> by selecting the CME tab on the top navigation bar.

Accreditation and Designation Statement

The American College of Cardiology Foundation (ACCF) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The ACCF designates this Journal-based CME activity for a maximum of 1 *AMA PRA Category 1 Credit(s)*[™]. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Method of Participation and Receipt of CME Certificate

To obtain credit for this CME activity, you must:

1. Be an ACC member or *JACC: Cardiovascular Imaging* subscriber.
2. Carefully read the CME-designated article available online and in this issue of the journal.
3. Answer the post-test questions. At least 2 out of the 3 questions provided must be answered correctly to obtain CME credit.
4. Complete a brief evaluation.
5. Claim your CME credit and receive your certificate electronically by following the instructions given at the conclusion of the activity.

CME Objective for This Article: At the end of this activity the reader should be able to discuss: 1) similarities and differences in bicuspid aortic valve (BAV) between Caucasian and African-American patients with respect to morphology, aortic stenosis/regurgitation, and aortic root dilatation; 2) the importance of race as a modifier in patients with BAV; and 3) to understand the variable association between BAV and thoracic aortic aneurysms.

CME Editor Disclosure: *JACC: Cardiovascular Imaging* CME Editor Ragavendra R. Baliga, MD, has reported that he has no relationships to disclose.

Author Disclosure: This work was supported by funding from the National Institute of Health (to Dr. Bowman: K08 HL090917-02) and by the Doris Duke Charitable Foundation. Dr. Bowman is a recipient of the Doris Duke Clinical Scientist Development Award. Dr. Lang is a member of the Philips Healthcare Speakers' Bureau; and has received research equipment grants from Philips. All other authors have reported that they have no relationships relevant to the contents of this paper to disclose.

Medium of Participation: Print (article only); online (article and quiz).

CME Term of Approval:

Issue Date: October 2012

Expiration Date: September 30, 2013

From the Department of Medicine, Section of Cardiology, The University of Chicago, Chicago, Illinois. This work was supported by funding from the National Institute of Health (to Dr. Bowman: K08 HL090917-02) and by the Doris Duke Charitable Foundation. Dr. Bowman is a recipient of the Doris Duke Clinical Scientist Development Award. Dr. Lang is a member of the Philips Healthcare Speakers' Bureau; and has received research equipment grants from Philips. All other authors have reported that they have no relationships relevant to the contents of this paper to disclose.

Manuscript received May 2, 2012; revised manuscript received July 5, 2012, accepted July 13, 2012.

Bicuspid Aortic Valve: Inter-Racial Difference in Frequency and Aortic Dimensions

OBJECTIVES The objective of this study was to examine the similarities and differences in Caucasian (C) and African-American (AA) patients with bicuspid aortic valve (BAV) with respect to morphology, severity of aortic stenosis/insufficiency, and aortic dilation.

BACKGROUND BAV is a common congenital valve abnormality, accounting for a large number of valve replacements.

METHODS A total of 229 patients with the diagnostic code BAV were identified retrospectively from our computerized adult echocardiographic database, which consists of 91,896 studies performed at the University of Chicago Medical Center from 1998 to 2009, representing 40,878 patients. Of those, 183 patients with BAV were included in this retrospective BAV single-center cohort study and reanalyzed with a comprehensive assessment of aortic dimensions, aortic valve morphology and function, clinical cardiovascular risk factors, and patient characteristics.

RESULTS Of the 183 patients with BAV, 138 were C and 45 were AA. Our echocardiographic database encompasses approximately 65% AA, 31% C, and 4% other races, for an estimated frequency of BAV in AA patients of 0.17% and a frequency in C patients of 1.1% ($p = 0.001$). There were no significant inter-racial differences regarding sex, height, weight, hyperlipidemia, diabetes, tobacco use, cardiac medications, and left ventricular ejection fraction. The AA cohort was older (age 50 ± 17 years vs. 43 ± 17 years, $p < 0.05$) and had a higher prevalence of hypertension (51% vs. 24%, $p < 0.05$). After adjusting for comorbidities, aortic dimensions were larger in C (C vs. AA: annulus, 2.4 ± 0.4 vs. 2.1 ± 0.4 cm; sinuses of Valsalva, 3.4 ± 0.7 vs. 3.1 ± 0.6 cm; sinotubular junction, 3.0 ± 0.6 vs. 2.6 ± 0.5 cm; and ascending aorta, 3.5 ± 0.7 vs. 3.2 ± 0.5 cm; all p values < 0.05).

CONCLUSIONS This is the first study to report racial differences among patients with BAV with reduced aortic dimensions in AA patients despite the presence of more risk factors, suggestive of marked heterogeneity in the BAV population and indicating race as a potential disease modifier in BAV. (J Am Coll Cardiol Img 2012;5:981-9) © 2012 by the American College of Cardiology Foundation

Bicuspid aortic valve (BAV) is a common congenital heart valve abnormality, accounting for a large number of valve replacements in the United States. Although still incompletely understood, the natural history of BAV disease often results in severe aortic stenosis or insufficiency and is associated with ascending aortic dilation. The population frequency of BAV has been reported at 0.5% to 1.36%, commonly stated as 1% to 2% (1-3). BAV has a high heritability with a predilection for males of ~3:1, supporting the previous recommendation to screen first-degree relatives of patients with BAV (4). Patients with BAV compared with those with trileaflet aortic valves have larger aortic root dimensions and increased risk of ascending aortic dilation during their life-

time. The aortopathy and increased susceptibility to valvular stenosis and regurgitation place the patient, especially in adulthood, at higher risk of surgical intervention (5,6). Although there is an increased probability of aortic dilation and/or dissection in BAV patients, the optimal way to assess and characterize patients at risk has been a subject of debate in the medical literature. Most previously reported BAV studies included nonracially diverse populations, primarily Caucasian (C) and to a much lesser extent African American (AA). To our knowledge, there are no studies specifically addressing potential racial differences in BAV disease, which could yield important insight into genetic contributions to prevalence and disease phenotype in BAV disease. We, therefore, sought to characterize similarities

Download English Version:

<https://daneshyari.com/en/article/2938578>

Download Persian Version:

<https://daneshyari.com/article/2938578>

[Daneshyari.com](https://daneshyari.com)