

PREVALENCE OF MITRAL ANNULUS CALCIFICATION IN AFRICAN AMERICANS: COMPARISON WITH NON-HISPANIC WHITES AND HISPANICS

Background: The association of ethnic ancestry with coronary artery calcifications suggests that mitral annulus calcification may also vary with ethnicity. We sought to compare prevalence and clinical correlates of mitral annulus calcification in non-Hispanic Whites, Hispanics, and African Americans.

Design: This was a retrospective study of 857 patients age 40–75 years that included 217 (25%) African Americans, 349 (41%) Hispanics, and 291 (34%) non-Hispanic Whites referred for echocardiography. Multiple logistic regression was used to determine the interrelationships between mitral annulus calcification, risk factors, and ethnicity.

Results: Mitral annulus calcification was detected in 181 (21.1%) patients including 35 (16.1%) African Americans, 80 (22.9%) Hispanics, and 66 (22.7%) non-Hispanic whites. In univariate analysis, patients with mitral annulus calcification were older and more likely to have hypertension, diabetes, dyslipidemia, smoking history, and two or more risk factors than were those without calcification. In multivariate analysis, age and smoking history were independent predictors of mitral annulus calcification; dyslipidemia and diabetes were borderline significant predictors; and after adjusting for the remaining variables in the model, ethnicity was not an independent significant predictor of mitral annulus calcification.

Conclusion: In a retrospective study of middle-aged and elderly African Americans, non-Hispanic Whites, and Hispanics referred for echocardiography, mitral annulus calcification is common in all three major ethnic groups but not significantly associated with ethnic ancestry. (*Ethn Dis.* 2008;18:48–52)

Key Words: Mitral Annulus Calcification, Ethnicity, African Americans, Hispanics, Echocardiography

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INTRODUCTION

The association of ethnic ancestry with prevalence of coronary artery and aortic calcifications suggests that mitral annulus calcification (MAC) may also vary with ethnicity.^{1–5} We have previously reported in a retrospective study of middle-aged and elderly non-Hispanic Whites and Hispanics referred for echocardiography that Hispanic ancestry is not associated with prevalence of MAC.⁶ The current study extends these observations to African Americans by exploring the prevalence of MAC in African Americans from the same database and making comparisons with non-Hispanic Whites and Hispanics after adjustment for a large number of coronary risk factors. In addition, this study evaluates the correlates of MAC in a multiethnic sample.

METHODS

Selection of Hispanic and non-Hispanic White subjects has previously been described.⁶ From the same database and time frame of our university-affiliated echocardiography laboratory, we identified 293 consecutive self-reported African Americans, aged 40–75 years. Of these, nine whose risk factor status could not be determined

from the medical record were excluded. An additional 67 were excluded because of inadequate images of the mitral annulus, a history of mitral valve surgery, rheumatic heart disease, hypertrophic cardiomyopathy, connective tissue disorder, prior chest irradiation, chronic use of corticosteroids, hypercalcemia, or renal insufficiency (end-stage renal disease requiring dialysis or creatinine ≥ 2 mg/dL). The final dataset for the present analyses consisted of 857 patients (217 African Americans, 349 Hispanics, and 291 non-Hispanic Whites).

Risk factor data and status were determined as described previously.⁶ Coronary risk factors included age (10-year age groups), sex, dyslipidemia, diabetes mellitus, hypertension, and smoking. Diabetes mellitus was defined as fasting blood sugar >126 mg/dL or the use of glucose-lowering medication. Hypertension was defined as systolic blood pressure >140 mm Hg or diastolic blood pressure >90 mm Hg during at least two clinic visits or the use of antihypertensive medication. Dyslipidemia was defined as use of lipid lowering agents or low-density lipoprotein cholesterol >160 mg/dL, high-density lipoprotein cholesterol <35 mg/dL in men or <45 mg/dL in women, or triglycerides >200 mg/dL. Smoking was classified as ever (current or former) or never. The total number of classical risk factors (hypertension, diabetes, dyslipidemia, history of any smoking) was calculated, and those with two or more risk factors were classified as patients with multiple risk factors.

Our method of diagnosing MAC has been previously described.⁶ Briefly, the digital images of the 217 African Americans were retrospectively reviewed

This study evaluates the correlates of mitral annulus calcification (MAC) in a multiethnic sample.
