



ASSOCIATION OF CORONARY ARTERY CALCIUM WITH INCIDENT PERIPHERAL ARTERY DISEASE: THE MULTI-ETHNIC STUDY OF ATHEROSCLEROSIS

Poster Contributions
Poster Hall, Hall C
Friday, March 17, 2017, 3:45 p.m.-4:30 p.m.

Session Title: Vascular Medicine: Novel Risk Measures in Arterial Diseases
Abstract Category: 40. Vascular Medicine: Non Coronary Arterial Disease
Presentation Number: 1167-358

Authors: *Zahra Meyghani, Hooman Bakhshi, Bharath Ambale Venkatesh, Yoshiaki Ohyama, Colin O. Wu, Matthew Budoff, Christina L. Wassel, Michael Criqui, David Bluemke, Joao Lima, Johns Hopkins Hospital, Baltimore, MD, USA*

Introduction: Peripheral artery disease (PAD) is associated with mortality and high economic burden on health care system. Since PAD remains asymptomatic until advanced stages, it is important to identify individuals at risk. In this study we investigated the association between coronary artery calcium (CAC) and incident PAD.

Methods: The Multi-Ethnic Study of Atherosclerosis (MESA) is a prospective, population-based study consisting of 6814 men and women from four ethnic groups. Participants were free of clinical cardiovascular disease at enrollment. We included participants who had the CAC score measured at baseline exam (2000- 2002)and had an ankle brachial index (ABI) at follow up exam (2010- 2011). We excluded participants with baseline ABI ≤0.9 or >1.4 or a follow up ABI>1.4. Incident PAD was defined as a follow up ABI≤0.9. Natural logarithm of CAC score was used .Multivariable logistic regression models were used to investigate the association of CAC with incident PAD .

Results: The mean (SD) age was 59.9 (9.4) years and 53.4% were female. During a median (IQR) of 9.4 (9.1-9.7) years of follow up, 169 out of 4257 participants developed PAD. Participants with baseline CAC>0 showed higher incidence of PAD (112/1729) in comparison with those with no CAC(57/2359). One unit increase in log(CAC+1) was associated with 1.17 fold higher odds of incident PAD independent of traditional cardiovascular risk factors.

Conclusions: Baseline CAC predicts incident PAD in a multi-ethnic population .

Table. Estimated odds ratios and their 95% confidence intervals showing the association between baseline CAC and incident PAD.

Independent variables	Odds Ratio	95% CI	P value
Age (per year)	1.07	1.04-1.10	<0.001
Gender (male)	0.35	0.23-0.55	<0.001
Ethnicity			
Non-Hispanic White	1.00		
Chinese	0.73	0.37-1.45	0.37
African American	1.84	1.2-2.81	0.005
Hispanic	0.58	0.33-1.01	0.055
Systolic blood pressure (mm Hg)	1.02	1.01-1.03	0.004
HDL cholesterol (mg/dl)	0.97	0.96-0.99	0.001
Treated diabetes (yes)	2.28	1.39-3.75	0.001
Current smoker (yes)	2.8	1.69-4.63	<0.001
Log (CAC+1)	1.17	1.08-1.26	<0.001

Multivariable logistic regression model adjusted for age, gender, race, body mass index, systolic blood pressure, diastolic blood pressure, use of antihypertensive medication, total cholesterol, high density lipoprotein (HDL) cholesterol, use of lipid lowering medication, diabetes (normal, impaired fasting glucose, untreated diabetes and treated diabetes), cigarette smoking status (never, former and current smoker), highest education level and household income. Only statistically significant odd ratios are demonstrated in this table. CAC: coronary artery calcium; PAD: peripheral artery disease; CI: confidence interval.