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Race-Specific Impact of Atrial Fibrillation Risk Factors in Blacks and Whites in the Southern Community Cohort Study

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Abstract

Despite a greater burden of traditional risk factors, atrial fibrillation (AF) is less common among black than whites for reasons that are unclear. We have examined race- and gender-specific influences of demographic, lifestyle, anthropometric and medical factors on AF in a large cohort of blacks and whites. Among white and black participants in the Southern Community Cohort Study age 65 and older receiving Medicare coverage from 1999–2008 (n=8,836), we ascertained diagnoses of AF (ICD-9 CM 427.3). Multivariate logistic regression was used to compute AF odds ratios (ORs) associated with participant characteristics, including histories of hypertension, diabetes, stroke and myocardial infarction/coronary artery bypass graft surgery, ascertained at cohort entry. Over an average of 5.7 years of Medicare coverage, AF was diagnosed among 1,062 participants. AF prevalence was significantly lower among blacks (11%) than whites (15%; P<. 0001). ORs for AF rose with age, were higher among men, the tall and obese, and among persons with each of the comorbid conditions, but the AF deficit among blacks compared with whites persisted upon adjustment for these factors (OR=0.64, 95% CI 0.55–0.73). The patterns of AF risk were similar for blacks and whites, although associations with hypertension, diabetes and stroke were somewhat stronger among blacks. In conclusion, these findings confirm the lower prevalence of AF among blacks than whites and suggest that traditional risk factors for AF apply similarly to both groups and thus do not appear to explain the AF paradox in blacks.

Keywords

Atrial fibrillation; epidemiology; risk factor; black; white

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Introduction

We have examined the race- and gender-specific associations between demographic, lifestyle, anthropometric and medical conditions and atrial fibrillation (AF) prevalence among blacks and whites in the Southern Community Cohort Study (SCCS). The SCCS is a large, prospective cohort study of health disparities among over 85,000 adults, over two-thirds black, residing in the southeastern United States, where rates of cardiovascular and cerebrovascular diseases have long been elevated (1). To our knowledge, this represents the largest assessment of risk factors for AF among blacks, and provides a unique opportunity to enhance understanding of the determinants of AF among blacks versus whites. Further delineation of those at high risk for AF may assist in the development of improved preventive and therapeutic strategies among all groups.

Methods

The SCCS is an ongoing, prospective cohort study which enrolled over 85,000 adults, age 40–79, residing in 12 states in the southeastern United States during 2002–2009. The SCCS study design and methods have been described in detail previously (2). In this report we focus on the black and white SCCS participants who were age 65 years or older on or before December 31, 2008 and were recruited at participating community health centers (CHCs), institutions which provide primary health and preventative services in medically underserved populations. The restriction to those aged 65 and older ensured that the black and white participants had generally similar coverage in Medicare, from which AF diagnoses were ascertained. The restriction to those enrolled in CHCs (the large majority of SCCS participants) ensured that the participants were of similar socioeconomic status and had generally equal access to health care regardless of race at cohort entry.

Upon entry into the SCCS, participants were administered a baseline computer-assisted personal interview at the CHC (available at www.southerncommunitystudy.org) which ascertained information about demographic characteristics, personal and family medical history, height, weight, tobacco and alcohol use history, and other factors. Many of the questions on the SCCS questionnaire were adapted from questionnaires used and validated in other settings, and a series of validation studies have also demonstrated the high reliability of the questionnaire within the SCCS population for variables such as tobacco use status, self-reported diseases, height and weight (2). The questionnaire responses enabled us to characterize AF patients with respect to various characteristics and assess how they differed from similar SCCS participants without AF.

Diagnoses of AF among cohort members were ascertained by linkage, using Social Security Number, date of birth, and gender, of the cohort with national Centers for Medicare and Medicaid Services (CMS) Research Identifiable Files (RIFs) from January 1, 1999 through December 31, 2008 (the latest date for which data were available). Cases of AF were defined as Medicare beneficiaries 65 years of age and older with at least 1 medical claim with an International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9 CM) diagnosis code of 427.3 (AF and flutter) within the Medicare institutional (Medpar), Part-B carrier, or outpatient base claims files from 1999 through 2008. A comparison population of SCCS participants without AF was defined as Medicare beneficiaries 65 years of age and older with no AF medical claims but with at least 1 non-AF medical claim within the Medicare institutional (Medpar), Part-B carrier, or outpatient base claims files during the same time period. Follow up of the participants for mortality was accomplished by linkages with the Social Security Administration vital status service for epidemiologic researchers and the National Death Index. All study procedures have been

approved by the Institutional Review Boards of Vanderbilt University Medical Center and Meharry Medical College.

Chi square tests were used to compare crude percentage distributions of persons with versus without AF and between blacks and whites. Multivariate logistic regression analyses were used to estimate odds ratios (ORs) and corresponding 95% confidence intervals (CI) as measures of association between AF prevalence and participant characteristics. Analyses were performed separately for blacks and whites and for men and women, as well as for race and sex groups combined. ORs of AF were calculated in relation to the following demographic, lifestyle, anthropometric and medical history variables reported at baseline: race (black, white); sex (male, female); age (years) at end of follow up (December 31, 2008 or date of death if earlier); height (<68, 68–<72, ≥72 inches for men, <63, 63–<66, ≥66 inches for women); body mass index (BMI, kg/m^2), classified as underweight (<18.5), normal (18.5–24.9), overweight (25–29.9), obese (30–39.9) or extremely obese (≥40); cigarette smoking status (ever, never); alcohol drinking, classified as none, moderate (≤3 drinks/day) and heavy (>3 drinks/day); self-reported history (yes/no) of diagnosed hypertension, diabetes, stroke, high cholesterol, and myocardial infarction (MI)/coronary artery bypass graft (CABG). Population attributable fraction (PAF) was calculated to determine the race-specific impact of the clinical risk factors in the model (MI/CABG, hypertension, diabetes, stroke) on AF occurrence using the following formula: $PAF=pd_i[(RR_i-1)/RR_i]$, where pd_i is the proportion of cases with ith exposure and RR is the OR comparing ith exposure with unexposed group (i=0). All analyses were conducted using SAS software, version 9.2 (SAS Institute Inc., Cary, NC).

To gain insight into the clinical features of AF in this study population and whether they differed among blacks and whites, we ascertained, for each participant with AF, the presence within their Medicare claims history of certain medical diagnoses associated with AF, including essential hypertension (ICD 9 CM 401), congestive heart failure (428.0), coronary atherosclerosis (414.0), diabetes mellitus (250), long-term use of anti-coagulants (ICD9 V586.1), and mitral or aortic valve disease (394–397, 398.9). Finally, we conducted secondary analyses restricted to cases diagnosed with AF after entry into the SCCS.

Results

The 8,836 (including 5,810 blacks and 3,026 whites) SCCS Medicare-eligible participants experienced a total of 50,641 person years of Medicare coverage between January 1, 1999 and December 31, 2008 (mean 5.8 years for blacks and 5.6 years for whites). We identified 1,062 cases (617 among blacks and 445 among whites) with at least 1 diagnosis of AF over this period, corresponding to a significantly (P<.0001) lower overall (crude) prevalence of 11% among blacks compared with 15% among whites (Table 1). The mean age of AF cases at the end of follow-up (or death), regardless of race or sex, was approximately 73 years, compared with 71 years among those without AF. Those with versus without AF were more likely to be male (P<.001), tall (P<.001) and obese (P=.03), although, with the exception of extreme obesity (BMI≥40 kg/m^2), the association with obesity appeared to be restricted to whites. The frequency of smoking was slightly higher, while the frequency of heavy drinking was similar, among those with versus without AF. History of hypertension was very common in this elderly study population, reported by 83% of AF cases overall, compared with 77% of those without AF (P<.001), an excess seen among both blacks and whites. Diabetes, stroke, and myocardial infarction (MI)/coronary artery bypass graft surgery (CABG) also were reported substantially more frequently by those with AF than without AF (P<.001 for all comparisons, both overall and separately for blacks and whites).

Table 2 presents ORs and 95% CIs for the association between baseline characteristics and AF for the study population overall, as well as separately by race and by sex. After taking into account all the factors shown in Table 2, blacks continued to have a substantially and significantly reduced OR for AF compared with whites (OR=0.64; 95% CI 0.55–0.73). The Table also shows that men were at significantly higher risk for AF compared with women and being taller than average height was significantly associated with AF, while being shorter was non-significantly inversely associated, a pattern that held among both men and women. A U-shaped association was apparent between BMI and AF, with increased ORs among those who were underweight and those who were obese or extremely obese, but only the latter was statistically significant (OR=1.59; 95% CI 1.20–2.12). Compared with no alcohol use, heavy but not moderate alcohol use was non-significantly positively associated with AF. Aside from age, the strongest risk factor for AF in this population was a history of MI/CABG, which was associated with a 2.4-fold increased risk for AF. Hypertension, diabetes and stroke were also significantly associated, although less strongly, with increased risk for AF, with ORs of 1.29, 1.33, and 1.55, respectively.

When blacks and whites were considered separately, patterns of association were generally similar, with no significant differences in the ORs for blacks vs. whites (Table 2), although ORs for AF associated with obesity and extreme obesity were somewhat stronger among whites and ORs for AF associated with hypertension, diabetes and stroke were higher among blacks. The ORs for AF tended to be similar among women and men (Table 2), although being tall or underweight were more strongly associated with AF among men, while extreme obesity was significantly associated with AF only among women, as were heavy drinking, hypertension and diabetes. Examination of the PAFs indicated that the major clinical risk factors (MI/CABG, hypertension, diabetes, and stroke) combined accounted for 58% of the AF occurrence in blacks, compared with 44% in whites.

The distributions and patterns of association with the examined risk factors were virtually identical when analyses were restricted to the 590 (56%) cases (371 black, 219 white) who had AF diagnoses recorded in Medicare after, but not before, entry into the SCCS, although with slight attenuation of the ORs associated with MI/CABG, hypertension, and diabetes.

In examination of Medicare claim history of diagnostic codes among AF cases, essential hypertension, coronary atherosclerosis, congestive heart failure, and diabetes mellitus occurred frequently, with at least 1 diagnosis in the Medicare history for 96%, 76%, 60%, and 63% of white AF cases, respectively. Among blacks with AF, the corresponding frequencies were 98%, 72%, 73% and 75%, respectively. In addition, long-term use of anti-coagulants was also frequently recorded in the Medicare history of AF cases, with at least 1 diagnosis for 57% and 47% of white and black AF cases, respectively. Mitral or aortic valve disease was diagnosed at least once for 27% of whites with AF and 30% of blacks with AF; among those without AF, the frequency was 7.7% for blacks and 7.9% for whites.

Discussion

To our knowledge, this is the largest study to examine risk factors for AF among blacks. The prevalence of AF was substantially lower among blacks than whites in our study population of SCCS participants aged 65 years and older, consistent with the 32%–53% lower rates of AF observed among blacks in other study populations (3–6). Despite the lower prevalence of AF, associations with traditional risk factors for AF were observed among blacks and were consistent with those reported in previous epidemiologic studies mostly of Caucasians (7,8). Apparent for both races in our study were the substantially increased risks for AF associated with increasing age, male sex, obesity, diabetes, hypertension and CAD. While associations with age, height and obesity were similar or somewhat stronger among whites

than among blacks, we found that virtually all of the associations with co-morbid medical conditions, including history of MI/CABG, hypertension, diabetes and stroke were as or somewhat more pronounced among blacks than among whites.

In the Cardiovascular Health Study (CHS), one of the few other studies directly comparing risk factors among blacks and whites, hypertension, prevalent heart failure and BMI were found to have stronger associations with AF among blacks than among whites, based on 126 black and 832 white cases of AF (9). In the Atherosclerosis Risk in Communities (ARIC) study (10), individuals were classified into optimal, borderline, and elevated risk profiles based on levels of hypertension, elevated BMI, diabetes, cigarette smoking and prior cardiac disease. More than 80% of blacks had 1 or more elevated risk factors compared with about 60% of whites, and, while those with an optimal risk profile had one-third the incidence rate of AF compared with those with elevated risk factors regardless of race, the AF rates at each risk profile were markedly lower in blacks than in whites.

Given the higher prevalence of co-morbidities such as diabetes and hypertension among blacks compared with whites, and their similar associations with AF among blacks demonstrated in this study, we attempted to quantify the burden of AF resulting from these clinical risk factors. We found that these factors explain 58% of the burden in blacks, somewhat higher than the 44% in whites but consistent with several other reports indicating that as much as 50% of AF in the population is not explained by known traditional risk factors (8–10). It appears likely, therefore, that there are novel factors other than those that have been consistently identified that are associated with AF risk either positively in whites or inversely in blacks. Diet (11), metabolic syndrome (12,13), sleep apnea syndrome (14) and chronic kidney disease (15,16) have recently been postulated as potential risk factors for AF. Among the AF cases in our study, only a small percentage had a diagnosis for end stage renal disease (ICD9 CM 585.6) in their Medicare claim history, but the extent to which chronic kidney disease may contribute differentially to AF risk among whites and blacks is an important research priority. Differences in AF genetic predisposition, in particular differential selective pressures on alleles controlling the likelihood of AF in the ancestral African and European populations, may also contribute to the differences in AF prevalence. In a recent meta-analysis of the CHS and ARIC populations, using ancestry informative genetic markers, European ancestry was reported to significantly predict risk for incident AF (17), and genome-wide association studies among Caucasians have detected 3 distinct genetic loci associated with AF risk (18). Comprehensive evaluation of genetic factors in AF risk in a black population would provide important insight into the biology of AF.

It has been suggested that under-ascertainment of AF due to poorer access to medical care among blacks may contribute to the lower prevalence compared with whites (19). One of the strengths of the SCCS is that both black and white participants were primarily drawn from the same socioeconomic strata with equal access to health care provided by Community Health Centers and reimbursed by Medicare, making differential ascertainment unlikely within the SCCS cohort. Further, inclusion of undetected cases in the non-AF comparison group would have tended to weaken the associations observed among blacks, yet they generally remained as strong as in whites. Results from the ARIC study population showing lower rates of AF among blacks even when restricted to cases identified through electrocardiograms (ECGs) done at study visits (4), as well as the racial differences in AF prevalence in the Kaiser Permanente study in which all participants had similar access to healthcare (3), further argue against under-ascertainment of AF as being the primary reason for the lower AF prevalence among blacks.

As has been observed consistently in other cohorts (5,8–10), men in our study were approximately 40% more likely to develop of AF than women, although risk factors for AF

were similar among men and women. This is generally in line with results of several other studies (4,10,20), including the Framingham Heart Study (8), but in that study women were significantly more likely than men to have valvular heart disease as a risk factor for AF. We did not have baseline information on prevalent heart valve disease at cohort entry, but concomitant diagnoses of valvular disease were recorded for about 29% of cases and 8% of controls in the Medicare records, with slightly higher prevalence among blacks (30%) than whites (27%) and among women (30%) than men (27%). Diabetes was significantly associated with AF among women but not men in our study, after controlling for other known risk factors such as hypertension; a similar finding has been reported previously (20) but requires confirmation.

A limitation of the present analysis is the method of AF ascertainment. We identified AF among individuals age 65 and older via access to Medicare claims, but did not have data on potential diagnoses at younger ages. Thus, a first diagnosis of AF in Medicare was not necessarily equivalent to the detection of incident AF, and we could not perform traditional Cox or other prospective modeling to assess predictors of AF onset. However, we were successful in identifying prevalent AF among cohort members, in conducting internally valid comparisons of ORs for AF between blacks and whites, and in uncovering associations in line with existing literature. The similarity of results when cases were restricted to those with a Medicare claim for AF after, but not before, entry into the SCCS suggests that prevalent AF at cohort entry was unlikely to have influenced reporting on the baseline questionnaire or led to differential recruitment into the SCCS. The high frequency of concomitant Medicare diagnosis codes for hypertension, congestive heart failure and diabetes among both white and black AF cases also indirectly corroborates the strong associations we observed for AF with these self-reported diagnoses at entry into the SCCS. The somewhat stronger associations with these co-morbidities among blacks seems unlikely due to distinctive therapy intensity for these conditions, since all study subjects were recruited from CHCs expected to provide race-neutral care for diabetes, hypertension and other chronic illnesses. Another limitation relates to the lack of echocardiographic and ECG data to assess left atrial size (21), which is an established risk factor for postoperative and non-surgical AF. One recent study suggested that smaller left atrial size in black patients may contribute to a lower AF prevalence despite a higher prevalence of hypertension and heart failure in blacks (22).

There is some potential for misclassification of AF ascertained in our study through use of diagnostic codes in Medicare claims records. Although we did not have information on ECGs, AF is generally a discrete diagnosis, and the fact that over 80% of cases had a single inpatient claim or 2 or more outpatient claims for AF, and risk factor patterns were virtually identical when analyses were restricted to those cases, increases our confidence in the specificity of the Medicare claims-based algorithm to accurately identify those with AF. Other studies have demonstrated 90% or higher rates of confirmation of AF cases identified through hospital discharge codes using discharge summaries or ECGs (4,6). AF is a highly heterogeneous disease and ideally primary and secondary forms of AF should be separated and not aggregated together. However, as the diagnosis of AF in this study is based on Medicare claims among SCCS participants who are 65 years and older, we would expect the majority of these individuals to have non-lone AF, as lone AF is usually defined by AF onset before the age of 65 years in the absence of cardiac or systemic conditions.

The major strengths of our study include the large number of blacks, a comparable comparison white population of similar socioeconomic status, the collection of extensive baseline information for the entire SCCS cohort, and the unbiased and systematic follow up for ascertainment of AF. These attributes enabled robust, precise estimation of multivariate relative risks for AF associated with various demographic, anthropometric and medical

characteristics. Our findings are consistent with the existing literature on this subject, primarily drawn from studies of Caucasians, and warrant confirmation in future prospective studies of blacks.

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Table 1

Baseline characteristics of SCCS participants age 65 years or older with vs. without a diagnosis of AF

Characteristic	Cases N=1,062	Controls N=7,774	Black cases N=617	Black controls N=5,193	White cases N=445	White controls N=2,581
Age (years)						
65–69	282 (27%)	3719 (48%)	161 (26%)	2441 (47%)	121 (27%)	1278 (50%)
70–74	346 (33%)	2322 (30%)	205 (33%)	1547 (30%)	141 (32%)	775 (30%)
75–85	434 (41%)	1733 (22%)[a]	251 (41%)	1205 (23%)[a]	183 (41%)	528 (21%)[a]
Gender						
Female	641 (60%)	5319 (68%)	371 (60%)	3525 (68%)	270 (61%)	1794 (70%)
Male	421 (40%)	2455 (32%)[a]	246 (40%)	1668 (32%)[a]	175 (39%)	787 (31%)[a]
Race						
White	445 (42%)	2581 (33%)	--	--	--	--
Black	617 (58%)	5193 (67%)[a]				
Height [c]						
Short	252 (24%)	2124 (28%)	144 (24%)	1324 (26%)	108 (24%)	800 (31%)
Average	447 (43%)	3458 (45%)	259 (43%)	2338 (45%)	188 (42%)	1120 (44%)
Tall	353 (34%)	2154 (28%)[a]	205 (34%)	1505 (29%)	148 (33%)	649 (25%)[a]
BMI(kg/m^2)						
<18.5	18 (2%)	88 (1%)	9 (2%)	53 (1%)	9 (2%)	35 (1%)
18.5–24.9	215 (21%)	1506 (20%)	121 (20%)	899 (18%)	94 (21%)	607 (24%)
25–29.9	312 (30%)	2589 (34%)	183 (30%)	1695 (33%)	129 (29%)	894 (35%)
30–39.9	404 (39%)	2916 (38%))	223 (37%)	2048 (40%)	181 (41%)	868 (34%)
40+	100 (10%)	594 (8%)[b]	69 (11%)	437 (9%)[b]	31 (7%)	157 (6%)[b]
Smoker						
Never	421 (40%)	3390 (44%)	257 (42%)	2393 (46%)	164 (37%)	997 (39%)
Ever	639 (60%)	4361 (56%)[b]	358 (58%)	2782 (54%)[b]	281 (63%)	1579 (61%)
Alcohol drinker						
None	800 (76%)	5344 (70%)	483 (79%)	3603 (71%)	317 (72%)	1741 (68%)
Moderate (≤3 drinks/day)	216 (21%)	2078 (27%)	103 (17%)	1323 (26%)	113 (26%)	755 (30%)

Characteristic	Cases N=1,062	Controls N=7,774	Black cases N=617	Black controls N=5,193	White cases N=445	White controls N=2,581
Heavy (>3 drinks/day)	34 (3%)	243 (3%)[a]	22 (4%)	188 (4%)[a]	12 (3%)	55 (2%)
MI/CABG	299 (28%)	938 (12%)[a]	154 (25%)	538 (10%)[a]	145 (33%)	400 (16%)[a]
Hypertension	877 (83%)	5966 (77%)[a]	537 (88%)	4213 (81%)[a]	340 (76%)	1753 (68%)[a]
Diabetes mellitus	442 (42%)	2581 (33%)[a]	285 (46%)	1879 (36%)[a]	157 (35%)	702 (27%)[a]
Stroke	198 (19%)	820 (11%)[a]	114 (19%)	524 (10%)[a]	84 (19%)	296 (12%)[a]
High cholesterol	584 (55%)	4024 (52%)[b]	310 (51%)	2507 (49%)	274 (62%)	1517 (59%)

AF=Atrial fibrillation; SCCS = Southern Community Cohort Study

P-value for comparison of percentage distributions of persons with versus without AF, overall and within race subcategories:

[a] P≤.001;

[b] P<.05;

[c] Height defined as: <68, 68–<72, ≥72 inches for men, <63, 63–<66, ≥66 inches for women

Table 2

Logistic regression-derived odds ratios (OR) and 95% confidence intervals (CI) for the association between baseline characteristics and AF in the SCCS, overall and by race and gender

	All OR (95% CI)	Blacks OR (95% CI)	Whites OR (95% CI)	Men OR (95% CI)	Women OR (95% CI)
Age (years)					
65–69	Ref	Ref	Ref	Ref	Ref
70–74	2.10 (1.54–2.87)	2.12 (1.42–3.18)	2.12 (1.29–3.46)	1.62 (1.00–2.63)	2.59 (1.72–3.91)
75–85	3.93 (2.54–6.08)	3.73 (2.13–6.54)	4.40 (2.19–8.87)	2.57 (1.30–5.09)	5.50 (3.10–9.77)
Gender					
Female	Ref	Ref	Ref	--	--
Male	1.43 (1.22–1.66)	1.53 (1.25–1.87)	1.27 (1.00–1.61)	--	--
Race					
White	Ref	--	--	Ref	Ref
Black	0.64 (0.55–0.73)			0.72 (0.57–0.90)	0.58 (0.48-–0.69)
Height [a]					
Short	0.86 (0.71–1.05)	0.94 (0.75–1.18)	0.76 (0.58–0.99)	0.90 (0.68–1.18)	0.83 (0.67–1.04)
Average	Ref	Ref	Ref	Ref	Ref
Tall	1.43 (1.22–1.68)	1.36 (1.10–1.67)	1.56 (1.21–2.01)	1.52 (1.18–1.97)	1.38 (1.13–1.69)
BMI					
<18.5	1.80 (1.04–3.12)	1.53 (0.71–3.27)	2.18 (0.97–4.87)	2.47 (1.14–5.38)	1.27 (0.56–2.87)
18.5–24.9	Ref	Ref	Ref	Ref	Ref
25–29.9	0.86 (0.71–1.05)	0.79 (0.61–1.03)	0.97 (0.71–1.31)	0.86 (0.64–1.15)	0.90 (0.69–1.18)
30–39.9	1.10 (0.90–1.33)	0.90 (0.69–1.16)	1.49 (1.11–2.01)	1.27 (0.94–1.72)	1.06 (0.82–1.38)
40+	1.59 (1.20–2.12)	1.48 (1.04–2.12)	1.73 (1.06–2.81)	1.07 (0.54–2.11)	1.72 (1.23–2.41)
Smoker					
Never	Ref	Ref	Ref	Ref	Ref
Ever	1.09 (0.94–1.26)	1.13 (0.93–1.36)	1.04 (0.83–1.31)	0.99 (0.76–1.27)	1.15 (0.96–1.37)
Alcohol drinker					
None	Ref	Ref	Ref	Ref	Ref
Moderate	0.79 (0.66–0.93)	0.67 (0.53–0.85)	0.95 (0.74–1.22)	0.83 (0.65–1.06)	0.74 (0.58–0.94)
Heavy	1.19 (0.80–1.77)	0.98 (0.60–1.61)	1.52 (0.77–3.03)	0.94 (0.60–1.48)	2.72 (1.18–6.26)

	All OR (95% CI)	Blacks OR (95% CI)	Whites OR (95% CI)	Men OR (95% CI)	Women OR (95% CI)
MI/CABG	2.38 (2.01–2.81)	2.46 (1.97–3.07)	2.34 (1.82–3.02)	2.35 (1.82–3.03)	2.44 (1.95–3.06)
Hypertension	1.29 (1.07–1.55)	1.37 (1.05–1.80)	1.19 (0.92–1.54)	1.18 (0.90–1.55)	1.38 (1.07–1.78)
Diabetes	1.33 (1.14–1.54)	1.38 (1.15–1.66)	1.25 (0.98–1.59)	0.99 (0.77–1.28)	1.56 (1.30–1.88)
Stroke	1.55 (1.29–1.87)	1.61 (1.26–2.05)	1.47 (1.11–1.97)	1.35 (1.01–1.82)	1.72 (1.36–2.18)
High cholesterol	0.94 (0.81–1.08)	0.96 (0.80–1.15)	0.92 (0.73–1.16)	0.93 (0.73–1.18)	0.97 (0.81–1.16)

AF=Atrial fibrillation; SCCS = Southern Community Cohort Study; All ORs adjusted for length of Medicare follow-up

[a]Height defined as: <68, 68–<72, ≥72 inches for men, <63, 63–<66, ≥66 inches for women