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The Association Between Socioeconomic Factors and Incident Peripheral Artery Disease in the Chronic Renal Insufficiency Cohort (CRIC)

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Abstract

Background: The association between socioeconomic factors and development of peripheral artery disease (PAD) has not been as well characterized compared to other cardiovascular diseases

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(CVD). We sought to define how annual income, sex, race, and education level are associated with newly diagnosed PAD in a well-characterized, diverse set of adults with CKD.

Methods: The Chronic Renal Insufficiency Cohort Study (CRIC) is a multicenter, prospective cohort study designed to examine risk factors for progression of CKD and cardiovascular disease. Demographic and clinical data including ankle brachial index (ABI) and interventions were collected at baseline, as well as yearly during follow-up visits. Annual income was categorized as: < $25,000, $25,000–50,000, $50,000–100,000, or above $100,000. We excluded those with pre-existing PAD, defined as enrollment ABI of <0.9 or >1.4, or missing income data. Cox proportional hazards regression was used to estimate the risk for incident PAD during CRIC enrollment, defined as a drop in ABI to < 0.90 or a confirmed PAD intervention, including revascularization or amputation.

Results: A total of 3,313 patients met inclusion criteria, the mean age was 58.7 yrs, 56% were male, and 42% were Black. Over a median follow-up of 10.1 years, 639 participants (19%) were newly diagnosed with PAD. After adjusting for cardiovascular risk factors, all lower levels of annual household income were associated with increased incidence of PAD (income <$25,000 HR 1.7, 95% CI 1.1–2.4, p=0.008; income $25,000–50,000 HR 1.5, 95% CI 1.1–2.3, p=0.009; income $50,000–100,000 HR 1.6, 95% CI 1.2–2.4, p=0.004), relative to a baseline annual income of >$100,000 (overall p-value=0.02). In the multivariable model, there was no association between education level and PAD incidence (p=0.80). Black race (HR 1.2, 95% CI 1.0–1.5, p=0.023) and female sex (HR 1.7, 95% CI 1.4–2.0, p<0.001) were independently associated with PAD incidence. Multiple imputation analysis provided similar results.

Conclusions: In the CRIC, a multi-center cohort of prospectively followed CKD patients undergoing yearly CVD surveillance, lower annual household income, female sex, and Black race were significantly associated with the PAD incidence. In contrast, level of education was not independently associated with incident PAD.

1.0 Introduction

Even with continued improvements in cardiovascular care in the US over the last several decades, substantial disparities remain in cardiovascular disease (CVD) incidence and outcomes, with many improvements in CVD care not experienced equally by all socioeconomic groups.[1] Factors including patient income, educational level, race, and sex have consistently been demonstrated to be important contributors to overall health and CVD outcomes.[2] Peripheral arterial disease (PAD) is a common disease in the US elderly population, with an estimated prevalence of approximately 8 million in the United States, and is a major source of morbidity and mortality, resulting in functional impairment, limb loss, as well as death. While low socioeconomic status (SES) has been linked with increased prevalence of coronary artery disease (CAD) and increased CAD mortality,[4] there are few studies that have investigated the relationship between SES and PAD.[5,6,7] Prior research has been cross sectional in design, only able to assess for associations between SES factors and PAD prevalence, which is susceptible to lead time bias. The onset of PAD has been poorly characterized, due to many studies being cross sectional as well as the time and resources required to periodically assess asymptomatic subjects. Further, some uncertainty surrounding PAD onset and progression likely stems from the fact that PAD surveillance

is not conducted in any state or nation. Additionally, most studies examine risk factors such as tobacco use and diabetes and their impact on PAD progression, but the relationship between SES factors and PAD incidence has not been clearly defined. Patients who are at particularly high risk for PAD include those with chronic kidney disease (CKD). Data from the National Health and Nutrition Examination Survey (NHANES) indicated that 25% of patients with CKD stage 3 or higher had PAD as defined by an ankle brachial index (ABI) < 0.9, compared to 4% in those normal renal function.[8] The National Kidney Foundation Task Force has previously issued a statement suggesting that patients with CKD be considered in the highest risk category for subsequent cardiovascular events such as myocardial infarction, stable and unstable angina, and cardiac death.[9] The Chronic Renal Insufficiency Cohort (CRIC) is a multi-center, prospective cohort study of CKD participants which is well-balanced with regard to education level, race, sex, age, and collects data regarding arterial circulation of the lower extremities at standardized intervals.[10,11] As such, it is an ideal population to assess for SES based differences in PAD incidence among CKD patients. The objective of this study was to assess the association of SES factors on PAD incidence in a well-established prospective cohort of patients with CKD that undergoes yearly PAD assessment.

2.0 Methods:

The CRIC Study is a multi-center prospective study that examines risk factors for progression of CVD among patients with CKD. A total of 5,499 participants were recruited between 2003–2013 from 7 clinical centers across the US (Supplemental Table 1),[11] and include a racially and ethnically diverse group of men and women who were aged 21 to 74 years old at the time of inclusion and have CKD based on age-based estimated GFR (eGFR) thresholds.[10] Age-based GFR was defined as the following: for age 21 to 44, GFR 20 to 70 mL/min per 1.73 m^2, age 45 to 64, GFR 20 to 60 mL/min per 1.73 m^2; and age 65 to 74, GFR 20 to 50 mL/min per 1.73 m^2. Participants were identified through searches of laboratory databases, medical records, and referrals from health care providers. The CRIC excluded those with cirrhosis, HIV infection, polycystic kidney disease, renal cell carcinoma, those on dialysis or recipients of a kidney transplant, and those taking immunosuppressant drugs. All study participants provided written informed consent, and the study protocol was approved by institutional review boards at each of the participating sites. All study data were collected by trained study staff during the CRIC clinical visits. Participants completed questionnaires at enrollment about socioeconomic, demographic, and medical history and returned for yearly visits where this information was updated. Annual household income was derived as a four-level categorical variable: below $25,000, $25,000–50,000, $50,000–100,000, or above $100,000. Highest level of educational attainment was also treated as a four-level categorical variable: some high school, high school graduate, some college, or college graduate. All data collection procedures and equipment were standardized across study sites. Baseline characteristics of participants were summarized as means (standard deviation, SD) for continuous variables and percentages for categorical variables by PAD status. Statistical significance was tested using either t-test or ANOVA for continuous variables and the χ^2 test for categorical variables. Statistical analyses were

performed using STATA version 15 (College Station, TX). All p-values were two-sided and statistical significance was defined as $p<0.05$.

2.1 PAD Assessment

The ankle brachial index (ABI) is the standard test utilized to diagnose PAD. After lying supine for 5 minutes, systolic blood pressure was measured in both arms and in the dorsalis pedis artery and posterior tibial artery using a Doppler probe. The ABI was calculated by dividing the systolic blood pressure for each sided pedal artery by the higher systolic blood pressure of the brachial artery. In participants with functioning arteriovenous fistula or grafts, the available contralateral brachial artery blood pressure was used. An ABI below 0.9 has been well established to be diagnostic for PAD with a sensitivity of 68% and a specificity of 99%.[12,13] Patients were classified as having PAD at enrollment if they had a history of a PAD intervention prior to enrollment (history of PAD-related lower extremity amputation, angioplasty, or bypass) or an enrollment ABI of less than 0.9. Those with PAD at study enrollment were excluded from all analyses. Those with an enrollment ABI >1.4 were also excluded due to their uncertainty regarding PAD status in those with noncompressible vasculature. PAD symptoms were not assessed during yearly patient visits.

2.2 Incident PAD During the Study Period

Patients were identified to have incident PAD if they did not have PAD at enrollment, and experienced one of the following during the study period: (1) underwent lower extremity revascularization procedure (angioplasty or surgical bypass), (2) underwent major lower extremity amputation (below the knee or above the knee), or (3) had an ABI value of less than 0.9 in either lower extremity during an annual study visit. Subjects were censored at the time of death, study withdrawal, or at completion of the study. Associations with traditional cardiovascular and socioeconomic factors were explored with univariate Cox regression using the outcome of incident PAD. A multivariable Cox regression model was created containing selected variables and backwards elimination was used to create the final multivariable Cox regression model. Separate sensitivity analyses were performed with imputation of those with missing income data and inclusion of patients with noncompressible vasculature (enrollment ABI of >1.4). Imputation of missing income data was performed using multiple imputation with chained equation methods with final HR estimates combined using Rubin's formula.[14,15]

3.0 Results:

There were 5,499 total CRIC participants enrolled, with a mean age of 59.5 years, 56.4% were male, and 44.3% that were Black. There were 621 patients with missing income information and 516 patients with enrollment ABI >1.4 that were excluded from initial analysis. There were 860 participants (20.2%) in the CRIC cohort found to have PAD at enrollment (see Methods: PAD Assessment), who were also excluded.

There were 3,313 participants from the initial 5,499 CRIC cohort that met inclusion criteria. The median length of follow up time was 10.1 years [IQR 3.8 – 12.6], mean age was 58.7 years, 56.1% were males, and 42.0% were Black. A total of 639 study participants

(19%) developed PAD during the study, with 543 diagnosed by an ABI below 0.9 (85%) and 96 diagnosed by undergoing a PAD procedure (revascularization or lower extremity amputation). Patient demographic data and clinical characteristics by PAD outcome are shown in Table 1 It is notable that there were significant differences between the groups with regard to age, sex, race, SES factors, and comorbid conditions. Mean time to incident PAD diagnosis was 3.7 ± 3.0 years (median 2.8 years, IQR 1.2 – 5.0) with an incidence rate of 2.8 cases of PAD per 100 person-years.

Notable associations from the univariate and multivariable Cox regression model are shown in Table 2. In the adjusted multivariable Cox regression model, which included demographic and clinical factors relevant from the univariate analysis, Black race (HR 1.2, 95% CI 1.0–1.5, p = 0.0023), female sex (HR 1.7, 95% CI 1.4–2.0, p < 0.001), and lower level of annual household income (p = 0.02) remained independently associated with development of PAD during the study. When compared to a baseline annual income of >$100,000, all lower levels of annual household income were associated with increased incidence of PAD (income < $25,000 HR 1.7, 95% CI 1.1–2.4, p = 0.008; income $25,000–50,000 HR 1.6, 95% CI 1.1–2.3, p = 0.009; income $50,000–100,000 HR 1.7, 95% CI 1.2–2.4, p = 0.002). In contrast, level of educational attainment was not associated with the development of PAD in the adjusted analysis (p = 0.80). Inclusion of statin, antiplatelet, or anticoagulant use did not significantly alter the association between SES factors and incident PAD in the adjusted model. No significant interaction was found between age, race, or sex with either annual household income or level of educational attained. The full multivariable model is shown in supplement Table 2.

Kaplan–Meier curves are shown in Figure 1. Overall, low income (log-rank test, p < 0.001), lower education level (log-rank test, p < 0.001), female sex (log-rank test, p < 0.001), and Black race (log-rank test, p < 0.001) were associated with lower rates of freedom from PAD.

Cumulative PAD incidence curves from the adjusted analysis are shown in Figure 2, and reflect that low annual household income, Black race and female sex remained significantly associated with an increased rate of PAD.

3.1 Sensitivity Analyses

3.1.1 PAD incidence with imputation of missing income information—

Imputation of missing income data was performed using multiple imputation with chained equation methods.[14] Using 10 chained equations, imputation of 410 missing income levels (66%) was successful for a total sample size of 3,723 patients. Based on prior simulations in chained model imputation, our model imputation performed as expected given our sample and the number of imputations.[14] In the multivariable Cox regression model with imputation, those with an annual income above $100,000 had a lower risk of incident PAD during the study period compared to those with an income < $25,000 (HR 1.6, 95% CI 1.1–2.3, p = 0.008), $25,000–50,000 (HR 1.5, 95% CI 1.1–2.2, p = 0.012), and $50,000–100,000 (HR 1.6, 95% CI 1.1–2.2, p = 0.006) with an overall p-value of 0.040. There was no association between education level and risk of incident PAD (p = 0.83) in the adjusted imputed model with imputation. Black race (HR 1.3, 95% CI 1.1–1.5, p = 0.007) and

female sex (HR 1.7, 95% CI 1.4–2.0, p < 0.001) remained independently associated with development of incident PAD in the adjusted model with imputation.

3.1.2 PAD incidence with inclusion of those with baseline ABI>1.4—Inclusion of the 516 patients initially excluded from analyses due to enrollment ABI>1.4 resulted in a total of 3,829 patients included in the Cox regression analysis for risk of incident PAD during the CRIC study period. A total of 735 developed incident PAD in this expanded cohort (19%) compared to 639 patients on the initial analysis, with an additional 50 patients diagnosed with PAD who required a PAD intervention and 46 patients diagnosed by progression of ABI to less than 0.9. In the final multivariable Cox regression model, Black race (HR 1.3, 95% CI 1.1–1.5, p = 0.002), female sex (HR 1.6, 95% CI 1.4–1.9, p < 0.001), and lower level of annual household income remained independently associated with development of PAD. Those with an annual income above $100,000 had a lower risk of incident PAD during the study period compared to those with an income < $25,000 (HR 1.6, 95% CI 1.1–2.3, p = 0.006), $25,000–50,000 (HR 1.6, 95% CI 1.1–2.2, p = 0.008), and $50,000–100,000 (HR 1.6, 95% CI 1.2–2.2, p = 0.003) with an overall p-value of 0.022. Level of educational attainment was not associated with development of PAD with inclusion of those with noncompressible baseline ABI (p = 0.71).

4.0 Discussion:

In this study, we demonstrated the associations of household income, education level, sex, and race, with development of PAD in a well-established prospective longitudinal cohort of patients at high risk for PAD development. Even with multivariable adjustment, annual household income, female sex, and Black race remain strongly associated with incident PAD. As seen in prior literature assessing PAD prevalence, the association between educational level and development of PAD appeared to be largely driven by demographic and cardiovascular risk factors, as there was an association between education level and risk of PAD development on univariate cox regression model, but no association on multivariable model.[16] The relationship between annual household income and risk of incident PAD persisted after adjusting for multiple key covariates, with lower levels of annual income associated with a similar risk of PAD development when compared to annual income above $100,000. Further, we found no interaction between annual income and other SES factors with regard to PAD incidence. The association between income and CVD has been well documented for other disease entities with similar results to ours.[5,17] The etiology of the association between low income level and CVD is likely multifactorial. Possible contributing factors include: the documented association between low annual income and chronic low-grade inflammation, the association between lower SES with fewer social supports and decreased likelihood of engaging in healthy lifestyle choices, those with lower income level experiencing increased difficulty in gaining access to community resources and/or exercise accessories due to employment and financial constraints, and increased difficulty in attaining access to preventive care or screening initiaives.[5, 17–20] Our results support the need for innovative solutions to address the increased PAD incidence observed among these disadvantaged patients. This may entail expansion of existing cardiovascular health outreach services as well as enactment of new health and social policies to mitigate

disparities associated with lower income. Those with higher income, especially annual household income above $100,000, may also be experiencing an associated protective effect from PAD development. Given the similar HRs noted for all income categories below $100,000, it appears that all of these cohorts are equally susceptible the previously noted health risks associated with lower income, and a dose-response relationship was not observed.

In both univariate and multivariable analysis, Black race was associated with increased PAD incidence. The independent association between Black race and CVD, even in this well followed prospective cohort with adjustment of baseline comorbid conditions and SES, has been seen in other areas of cardiovascular health.[17,21] This observation has been attributed to more severe comorbid conditions in the Black population (including increased levels of baseline blood pressure in those with hypertension, higher blood glucose in those with diabetes, and increased frequency of central obesity in those with elevated BMI) and increased baseline levels of psychological distress experienced by this population.[17,21] Additionally, the Black population has been noted to have poorer access to medical care, even with adjustment of other socioeconomic factors, which may contribute to our findings.[17,22] Further, female sex was associated with incident PAD on univariate and multivariable cox regression analysis. Prior reports have shown conflicting results in regard to the association between sex and PAD. There have been prior studies demonstrating an association between female sex and PAD prevalence, but in these studies this was attributed to increased risk of comorbid cardiovascular conditions and decreased cardiovascular medication use in women.[23,24] More recent cohort studies have demonstrated that women may present with more severe PAD and have lower rates of limb salvage compared to men.[25–28] Additionally, prior literature has suggested that younger women diagnosed with PAD have more rapid decline in function compared to men, which may justify earlier and more aggressive screening measures in women in compared to men.[27,28] Our results support the association between female sex and increased PAD incidence, which may differ from historical studies due this study investigating associations with PAD incidence or due to the detailed tracking of cardiovascular conditions that is done in the CRIC cohort allowing for appropriate adjustment of comorbid factors.[25,26]

This study did not show significant differences in cardiovascular medication regimen by SES factors as a possible explanation for our findings. Income level, education level, and race were not associated with differing rates of prescriptions for antiplatelet agents, anticoagulants, or statins, although medication compliance was not assessed. Additionally, these medications did not have a significant association with PAD incidence in multivariable models.

The disparities highlighted in this study demonstrate the need for improved approaches to raise PAD awareness, as well as focused research endeavors and treatment strategies that target low SES individuals, as they are the most at risk for developing PAD. Previous studies demonstrated that patients with both PAD and low SES are more likely to undergo amputations compared to those with higher SES, who are more likely to undergo revascularization or debridement.[29,30] Continued efforts to identify and implement programs in these subpopulations would reduce morbidity caused by delayed diagnosis. Notably, in

patients who survived more than five years, over 20% developed PAD during the study period. Given the high prevalence of PAD in those with CKD, as well as the often asymptomatic nature of PAD, earlier ABI screening in this subpopulation may be warranted. In this study, 85% of patients diagnosed with PAD were identified by ABI screening, which could lead to earlier disease treatment in these individuals. There are important limitations to our study. Annual income and education level are self-reported and only collected upon participant enrollment into the CRIC; thus, misclassification is possible. However, prior studies have shown minimal discrepancy between self-reported income and true wage or salary.[31] In addition, annual household income may not always approximate total wealth and varies by family size, especially in those who are retired. However, analyses stratified by age < or ≥65 years yielded similar relationships in all models. Patients with CKD and/or diabetes can have calcified, noncompressible vessels, which can lead to an overestimation of the ABI and misclassification. Our primary analyses excluded those with noncompressible vessels, though we observed similar relationships between SES factors and development of PAD in sensitivity analyses in which they were reincorporated into the cohort.. Additionally, the CRIC is a longitudinal study designed for those with CKD, which may limit generalizability to the broader US population. Further, patients able to comply with the yearly visits for CRIC participation may not be generalizable to those in the US who are at most risk for PAD development. While we were able to control for presence or absence of traditional cardiovascular risk factors, we were unable to control for severity of these comorbidities (i.e. A1C level, higher level of LDL, etc). Thus, there may have been residual confounding by disease severity. Lastly, we were able to assess for PAD by both ABI criteria and need for intervention, but otherwise PAD symptoms were not tracked in this prospective cohort. Nonetheless, this is a rich dataset which provides important insights into a highly relevant population which is commonly affected by PAD.

Additionally, since this is a prospectively followed cohort, we were able to assess socioeconomic associations with incident PAD, eliminating the lead time bias present in prior studies.

5.0 Conclusions:

In summary, in this prospectively followed CKD cohort, we found that lower annual household income, female sex, and Black race were significantly associated with development of PAD. In contrast, level of education was not independently associated with incident PAD after adjusting for demographic and cardiovascular conditions. Acknowledging the limitations of this study, the fact that these factors are strongly associated with PAD development should lead us to better consider our advocacy and education efforts around PAD. Without question, subpopulations exist US that remain at substantially higher risk of developing PAD. Improved public awareness efforts that are targeted toward these populations will hopefully lower the adverse impact of PAD that these vulnerable patients experience. Additionally, given the high incidence of PAD in this cohort, the role of periodic ABI screening for PAD in high risk populations should be considered.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Appendix:

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Highlights

- We found that lower annual household income, female gender, and Black race were independently associated with development of PAD even with strict multivariable adjustment in this prospectively followed CKD cohort
- Level of educational attainment was not independently associated with incident PAD, but educational level was a possible surrogate for annual income if missing
- Given the high incidence of PAD in this cohort, with 19% developing PAD over a median of 10 years, the role of periodic PAD screening by ABI in high risk subpopulations should be considered

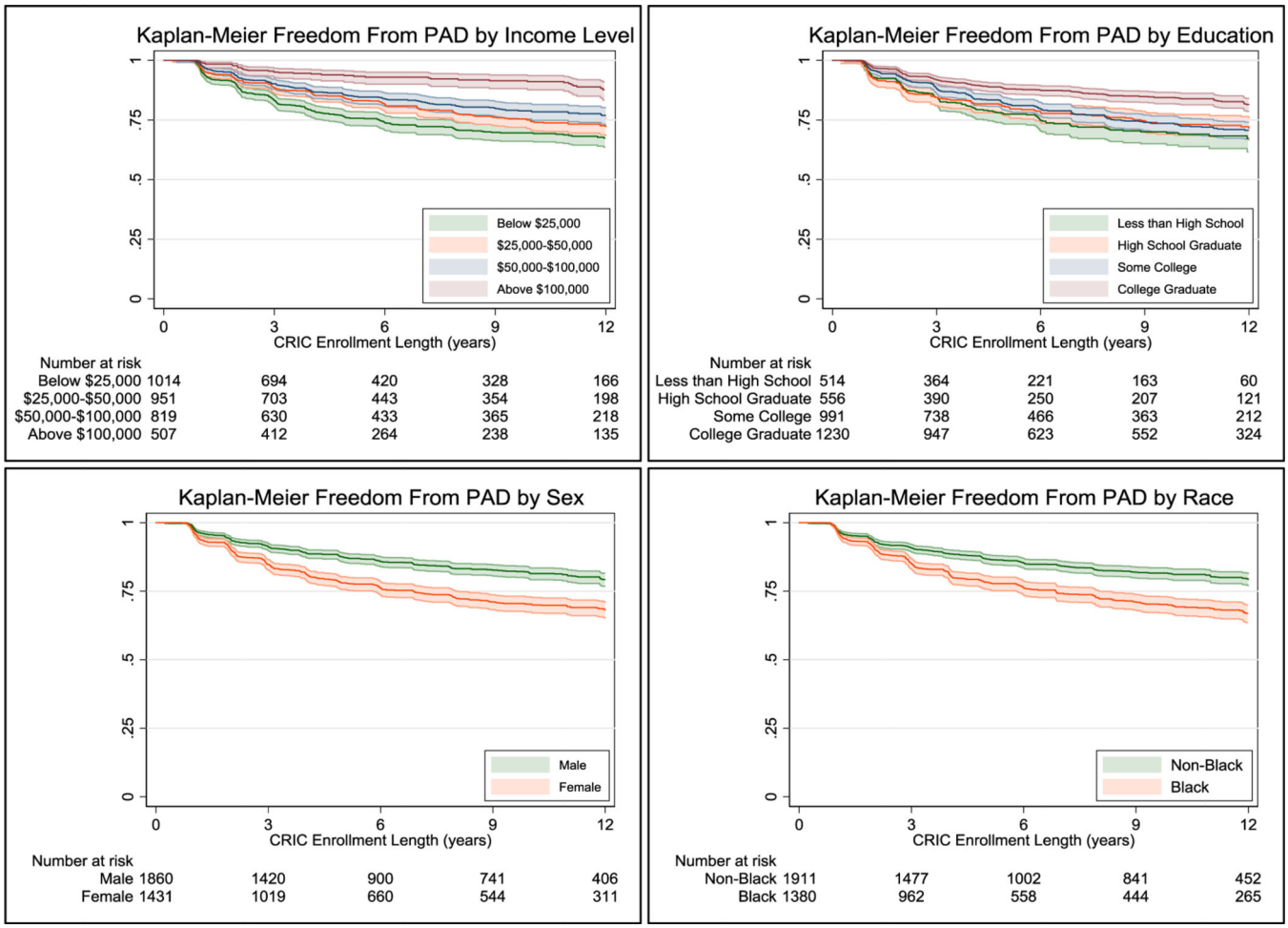

Figure 1.

Kaplan-Meier curves denoting freedom from PAD across SES factors

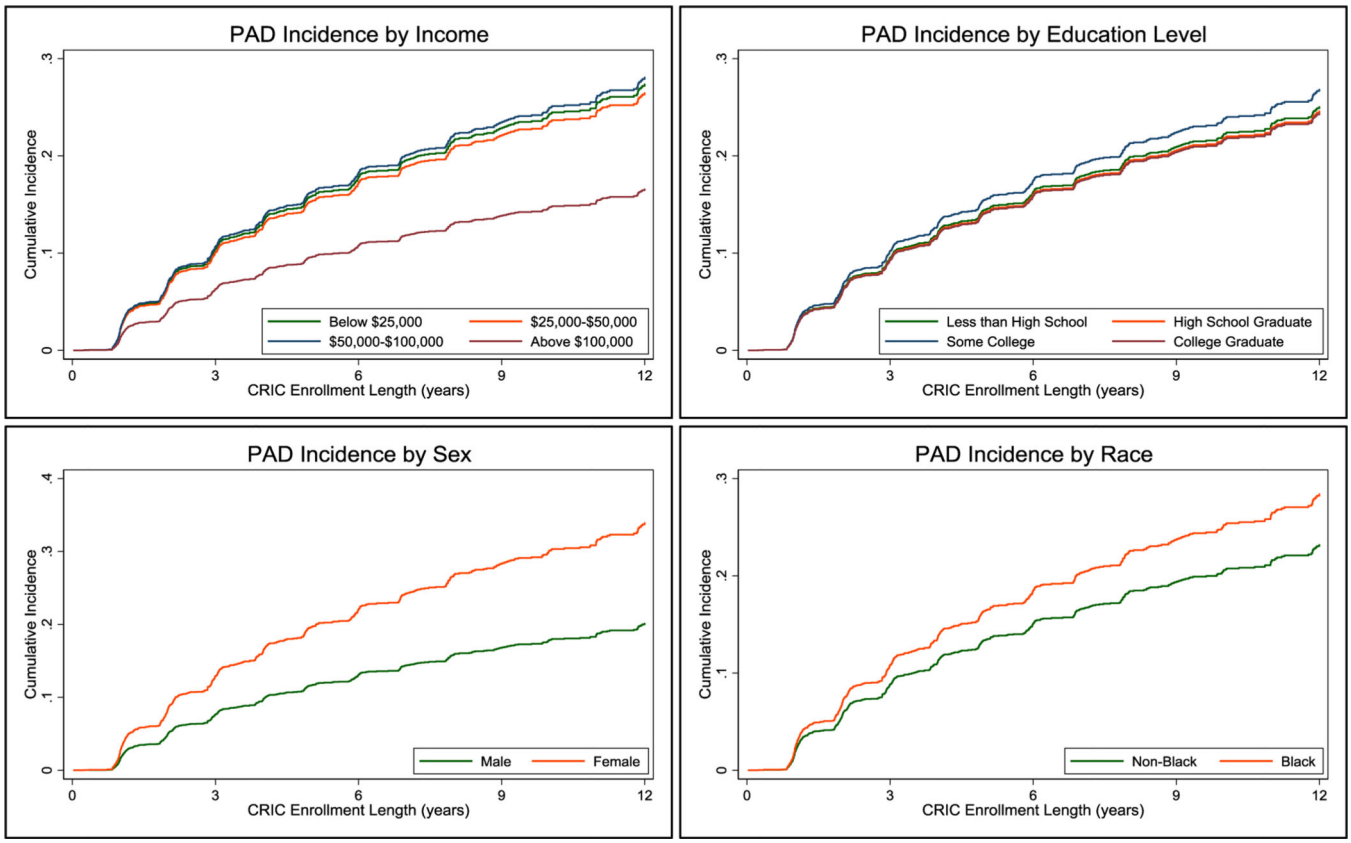

Figure 2.

Cumulative incidence of peripheral artery disease by SES factors. Using Cox Regression model at the mean age of the cohort (57 years) as well as the mean for other variables in the model, adjusted for diabetes mellitus, race, gender, income level, educational level, smoking, body mass index, glomerular filtration rate, coronary artery disease, hypertension, and geographic location.

Table 1.

Summary statistics for those who did not enter the CRIC study with pre-existing PAD, stratified by development of PAD during the study period.

		No PAD (n = 2674)	Incident PAD (n = 639)	p-value
Age	< 45 years	328 (12.3%)	53 (8.3%)	0.002
	45 to less than 65 years	1507 (56.4%)	350 (54.8%)	
	≥ 65 years	839 (31.4%)	236 (36.9%)	
Annual Household Income	Below $25,000	768 (28.7%)	255 (39.9%)	<0.001
	$25,000–$50,000	768 (28.7%)	190 (29.7%)	
	$50,000-$100,000	675 (25.2%)	149 (23.3%)	
	Above $100,000	463 (17.3%)	45 (7.0%)	
Education Level	Some High School	389 (14.5%)	127 (19.9%)	<0.001
	High School Grad	439 (16.4%)	125 (19.6%)	
	Some College	784 (29.3%)	213 (33.3%)	
	College Grad	1062 (39.7%)	174 (27.2%)	
Male Gender		1588 (59.4%)	281 (44.0%)	<0.001
Black Race		1058 (39.6%)	333 (52.1%)	<0.001
eGFR (mL/min per 1.73 m2)	Below 30	296 (11.1%)	108 (16.9%)	<0.001
	30–60	1618 (60.5%)	436 (68.2%)	
	Above 60	760 (28.4%)	95 (14.9%)	
History of CVD		623 (23.3%)	204 (31.9%)	<0.001
History of DM		1120 (41.9%)	336 (52.6%)	<0.001
History of Hypertension		2198 (82.2%)	587 (91.9%)	<0.001
History of High Cholesterol		1997 (74.7%)	527 (82.5%)	<0.001
Tobacco Use		251 (9.4%)	129 (20.2%)	<0.001
Alcohol Use		686 (25.7%)	115 (18.0%)	<0.001
Medication Use	Statin Use	1389 (52.3%)	379 (59.9%)	<0.001
	Antiplatelet Use	1144 (43.1%)	303 (47.4%)	0.028
	Anticoagulant Use	166 (6.2%)	36 (5.6%)	0.59
Body Mass Index	Below 25	407 (15.3%)	87 (13.6%)	<0.001
	25–30	835 (31.3%)	161 (25.2%)	
	Above 30	1424 (53.4%)	391 (61.2%)	
Urine Sodium Concentration, mmol/L (SD)		83.0 (35.5)	82.2 (34.1)	0.62
Urine Protein/Creatinine Ratio (SD)		0.68 (1.9)	0.86 (2.0)	0.035
Cause of Renal Disease	Diabetes	518 (19.4%)	167 (26.1%)	<0.001
	Hypertension	418 (15.6%)	94 (14.7%)	
	Other	432 (16.2%)	73 (11.4%)	
	Unknown	1306 (48.8%)	305 (47.4%)	
CRIC Site	University of Pennsylvania	334 (12.5%)	93 (14.6%)	<0.001

		No PAD (n = 2674)	Incident PAD (n = 639)	p-value
	The Johns Hopkins University	357 (13.4%)	98 (15.3%)	
	Case Western Reserve University	331 (12.4%)	149 (23.3%)	
	University of Michigan	409 (15.3%)	46 (7.2%)	
	University of Illinois at Chicago	442 (16.5%)	128 (20.0%)	
	Tulane University Health Science Center	305 (11.4%)	51(8.0%)	
	Kaiser Permanente of Norther California	496 (18.5%)	74 (11.6%)	

PAD: Peripheral Artery Disease, CVD: Cardiovascular Disease, DM: Diabetes Mellitus

Table 2.

Univariate and multivariable cox regression model results for association between development of incident PAD during CRIC study period and socioeconomic factors

		Univariate Cox HR	Univariat e p-value	Multivariab le Cox HR	Multivariab le p-value
Annual Household Income	Below $25,000	3.4 (2.5–4.7)	<0.001	1.7 (1.1–2.4)	0.023
	$25,000–$50,000	2.5 (1.8–3.4)		1.6 (1.1–2.3)	
	$50,000–$100,000	2.1 (1.5–3.0)		1.7 (1.2–2.4)	
	Above $100,000	Ref		Ref	
Education Level	Some High School Education	2.0 (1.6–2.5)	<0.001	1.0 (0.8–1.4)	0.800
	High School Graduate	1.8 (1.4–2.2)		1.0 (0.8–1.3)	
	Some College Education	1.6 (1.3–2.0)		1.1 (0.9–1.4)	
	College Graduate	Ref		Ref	
Black Race		1.7 (1.5–2.0)	<0.001	1.2 (1.0–1.5)	0.023
Female Gender		1.7 (1.5–2.0)	<0.001	1.7 (1.4–2.0)	<0.001