

**SUPPLEMENTAL MATERIAL**

**Supplemental Table 1A:** Baseline characteristics of participants stratified by median CD34+ count

Characteristics	CD34+		p-value
	Below Median	Above Median	
Estimated GFR (mL/min/1.73m <sup>2</sup> )	66.1 (26.3)	69.9 (27.0)	<b>&lt;0.001</b>
Renal Insufficiency	243 (38.0%)	203 (31.7%)	<b>0.019</b>
Age (years)	67.8 (12.3)	63.2 (13.4)	<b>&lt;0.001</b>
Male sex	367 (57.3%)	409 (63.8%)	<b>0.019</b>
Black race	141 (22.0%)	142 (22.2%)	1.000
Diabetes	257 (40.2%)	256 (40.0%)	1.000
Current smoking	30 (4.7%)	30 (4.7%)	1.000
Hypertension	586 (91.7%)	570 (89.2%)	0.153
Hypercholesterolemia	474 (74.1%)	477 (74.4%)	0.898
Body mass index (kg/m <sup>2</sup> )	28.7 (6.3)	30.0 (6.4)	<b>&lt;0.001</b>
Hemoglobin (g/dL)	12.8 (1.8)	13.3 (1.9)	<b>&lt;0.001</b>
White blood cells (cells/microL)	6357 (1758)	7110 (1749)	<b>&lt;0.001</b>

CAD history	546 (85.3%)	508 (79.3%)	<b>0.005</b>
HF history	233 (36.4%)	218 (34.0%)	0.381
PAD history	145 (22.7%)	101 (15.8%)	<b>0.002</b>
Ejection fraction (%)	53.7 (12.3)	52.3 (13.3)	0.150
High-sensitivity troponin I (pg/mL)	6.8 [3.5-15.1]	6.2 [3.3-15.4]	0.319
B-type natriuretic peptide (pg/mL)	114.6 [50.6-391.4]	95.8 [39.5-226.5]	<b>0.001</b>
ACEi/ARB use	322 (50.3%)	340 (53.0%)	0.342
Aspirin use	497 (77.7%)	509 (79.4%)	0.455
Beta blocker use	462 (72.2%)	475 (74.1%)	0.450
Clopidogrel use	249 (38.9%)	239 (37.3%)	0.565
Statin use	455 (71.1%)	440 (68.6%)	0.361
Cardiovascular death/MI	104 (16.6%)	71 (11.3%)	<b>0.007</b>
All-cause death	143 (22.9%)	91 (14.5%)	<b>&lt;0.001</b>

**Supplemental Table 1B:** Baseline characteristics of participants stratified by median CD34+/CD133+ count

Characteristics	CD34+/CD133+	CD34+/CD133+	p-value
	Below Median	Above Median	
Estimated GFR (mL/min/1.73m <sup>2</sup> )	67.3 (25.2)	68.7 (28.2)	0.109
Renal Insufficiency	226 (35.3%)	220 (34.3%)	0.725
Age (years)	67.9 (12.3)	63.1 (13.3)	< <b>0.001</b>
Male sex	366 (57.2%)	410 (64.0%)	<b>0.014</b>
Black race	129 (20.2%)	154 (24.0%)	0.106
Diabetes	243 (38.0%)	270 (42.2%)	0.138
Current smoking	31 (4.8%)	29 (4.5%)	0.793
Hypertension	582 (91.1%)	574 (89.8%)	0.505
Hypercholesterolemia	470 (73.4%)	481 (75.0%)	0.523
Body mass index (kg/m <sup>2</sup> )	28.5 (6.2)	30.2 (6.5)	< <b>0.001</b>
Hemoglobin (g/dL)	12.9 (1.8)	13.2 (1.9)	<b>0.003</b>
White blood cells (cells/microL)	6373 (1735)	7094 (1778)	< <b>0.001</b>
CAD history	543 (84.8%)	511 (79.7%)	<b>0.019</b>

HF history	241 (37.7%)	210 (32.8%)	0.070
PAD history	134 (20.9%)	112 (17.5%)	0.119
Ejection fraction (%)	53.4 (12.7)	52.6 (12.9)	0.210
High-sensitivity troponin I (pg/mL)	6.6 [3.3-14.6]	6.4 [3.5-15.8]	0.842
B-type natriuretic peptide (pg/mL)	110.8 [46.7-360.0]	98.2 [41.0-237.0]	<b>0.043</b>
ACEi/ARB use	314 (49.1%)	348 (54.3%)	0.065
Aspirin use	493 (77.0%)	513 (80.0%)	0.197
Beta blocker use	457 (71.4%)	480 (74.9%)	0.116
Clopidogrel use	241 (37.7%)	247 (38.5%)	0.774
Statin use	444 (69.4%)	451 (70.4%)	0.715
Cardiovascular death/MI	101 (16.2%)	74 (11.8%)	<b>0.028</b>
All-cause death	139 (22.2%)	95 (15.1%)	<b>0.001</b>

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**Supplemental Table 1C:** Baseline characteristics of participants stratified by median CD34+/CXCR4+ count

Characteristics	CD34+/CXCR4+	CD34+/CXCR4+	p-value
	Below Median	Above Median	
Estimated GFR (mL/min/1.73m <sup>2</sup> )	66.5 (26.2)	69.5 (27.2)	<b>0.018</b>
Renal Insufficiency	236 (36.9%)	210 (32.8%)	0.128
Age (years)	67.1 (12.4)	63.9 (13.5)	<b>&lt;0.001</b>
Male sex	354 (55.3%)	422 (65.8%)	<b>&lt;0.001</b>
Black race	133 (20.8%)	150 (23.4%)	0.281
Diabetes	266 (41.6%)	247 (38.6%)	0.305
Current smoking	31 (4.8%)	29 (4.5%)	0.793
Hypertension	583 (91.2%)	573 (89.7%)	0.392
Hypercholesterolemia	466 (72.8%)	485 (75.7%)	0.251
Body mass index (kg/m <sup>2</sup> )	28.1 (6.3)	29.8 (6.4)	<b>0.003</b>
Hemoglobin (g/dL)	12.7 (1.8)	13.4 (1.8)	<b>&lt;0.001</b>
White blood cells (cells/microL)	6458 (1831)	7010 (1711)	<b>&lt;0.001</b>
CAD history	536 (83.8%)	518 (80.8%)	0.188

HF history	245 (38.3%)	206 (32.1%)	<b>0.023</b>
PAD history	142 (22.2%)	104 (16.2%)	<b>0.007</b>
Ejection fraction (%)	53.4 (12.3)	52.5 (13.3)	0.491
High-sensitivity troponin I (pg/mL)	6.7 [3.5-15.3]	6.4 [3.3-15.4]	0.423
B-type natriuretic peptide (pg/mL)	112.1 [48.1-360.0]	96.7 [39.4-225.5]	<b>0.006</b>
ACEi/ARB use	324 (50.6%)	338 (52.7%)	0.468
Aspirin use	503 (78.6%)	503 (78.6%)	1.000
Beta blocker use	466 (72.8%)	471 (73.5%)	0.801
Clopidogrel use	250 (39.1%)	238 (37.1%)	0.490
Statin use	452 (70.6%)	443 (69.1%)	0.584
Cardiovascular death/MI	107 (17.1%)	68 (10.8%)	<b>0.001</b>
All-cause death	141 (22.5%)	93 (14.8%)	<b>&lt;0.001</b>

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**Supplemental Table 1D:** Baseline characteristics of participants stratified by median CD34+/VEGF2R+ count

Characteristics	CD34+/VEGF2R+	CD34+/VEGF2R+	p-value
	Below Median	Above Median	
Estimated GFR (mL/min/1.73m <sup>2</sup> )	66.8 (26.2)	69.2 (27.2)	<b>0.049</b>
Renal Insufficiency	237 (37.4%)	209 (32.3%)	0.061
Age (years)	66.7 (12.4)	64.3 (13.6)	<b>0.006</b>
Male sex	361 (56.9%)	415 (64.1%)	<b>0.009</b>
Black race	138 (21.8%)	145 (22.4%)	0.788
Diabetes	282 (44.5%)	231 (35.8%)	<b>0.002</b>
Current smoking	31 (4.9%)	29 (4.5%)	0.792
Hypertension	562 (88.9%)	594 (92.0%)	0.071
Hypercholesterolemia	470 (74.1%)	481 (74.3%)	0.949
Body mass index (kg/m <sup>2</sup> )	29.5 (6.6)	29.3 (6.2)	0.808
Hemoglobin (g/dL)	12.8 (1.7)	13.3 (1.8)	<b>&lt;0.001</b>
White blood cells (cells/microL)	6664 (1820)	6803 (1765)	0.146
CAD history	559 (88.2%)	495 (76.5%)	<b>&lt;0.001</b>

HF history	243 (38.3%)	208 (32.1%)	<b>0.023</b>
PAD history	162 (25.6%)	84 (13.0%)	<b>&lt;0.001</b>
Ejection fraction (%)	53.6 (12.1)	52.4 (13.5)	0.434
High-sensitivity troponin I (pg/mL)	6.7 [3.6-14.3]	6.3 [3.2-16.0]	0.563
B-type natriuretic peptide (pg/mL)	105.5 [46.6-283.3]	101.4 [40.8-263.9]	0.393
ACEi/ARB use	368 (58.0%)	294 (45.4%)	<b>&lt;0.001</b>
Aspirin use	533 (84.1%)	473 (73.1%)	<b>&lt;0.001</b>
Beta blocker use	497 (78.4%)	440 (68.0%)	<b>&lt;0.001</b>
Clopidogrel use	268 (42.3%)	220 (34.0%)	<b>0.003</b>
Statin use	484 (76.3%)	411 (63.5%)	<b>&lt;0.001</b>
Cardiovascular death/MI	92 (14.8%)	83 (13.1%)	0.415
All-cause death	124 (20.0%)	110 (17.4%)	0.246

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**Supplemental Table 2:** Predictors of circulating progenitor cell counts in the overall cohort

	CD34+		CD34+/CD133+		CD34+/CXCR4+		CD34+/VEGF2R+	
	Beta (95% CI)	p-value	Beta (95% CI)	p-value	Beta (95% CI)	p-value	Beta (95% CI)	p-value
eGFR (per mL/min/1.73m <sup>2</sup> )	0.003 (0.001, 0.005)	<b>0.003</b>	0.003 (0.001, 0.006)	<b>0.010</b>	0.003 (0.0001, 0.005)	<b>0.029</b>	0.004 (-0.004, 0.011)	0.343
Age (per year)	-0.015 (-0.019, -0.011)	<b>&lt;0.001</b>	-0.020 (-0.024, 0.015)	<b>&lt;0.001</b>	-0.013 (-0.018, -0.008)	<b>&lt;0.001</b>	-0.026 (-0.041, -0.011)	<b>0.001</b>
Male sex	0.178 (0.067, 0.288)	<b>0.002</b>	0.160 (0.026, 0.293)	<b>0.019</b>	0.199 (0.069, 0.330)	<b>0.003</b>	0.478 (0.082, 0.875)	<b>0.018</b>
Race	0.040 (-0.091, 0.170)	0.554	0.166 (0.009, 0.323)	<b>0.039</b>	0.118 (-0.036, 0.272)	0.134	0.259 (-0.209, 0.728)	0.278
Diabetes	0.001 (-0.110, 0.111)	0.992	0.057 (-0.076, 0.190)	0.402	-0.050 (-0.181, 0.081)	0.454	-0.571 (-0.996, -0.176)	<b>0.005</b>
Current smoking	-0.076 (-0.332, 0.180)	0.561	0.029 (-0.279, 0.338)	0.852	-0.146 (-0.448, 0.156)	0.344	-0.098 (-1.016, 0.819)	0.833
Hypertension	0.148	0.117	-0.184	0.104	-0.159	0.152	-0.053	0.875

	(0.332, 0.037)		(-0.406, 0.038)		(-0.377, 0.058)		(-0.713, 0.608)	
Hypercholesterolemia	0.019 (-0.105, 0.143)	0.768	0.024 (-0.126, 0.173)	0.757	0.035 (-0.112, 0.181)	0.641	-0.010 (-0.454, 0.434)	0.965
BMI (per kg/m <sup>2</sup> )	0.020 (0.011, 0.028)	<b>&lt;0.001</b>	0.026 (0.016, 0.036)	<b>&lt;0.001</b>	0.013 (0.003, 0.023)	<b>0.010</b>	-0.023 (-0.053, 0.007)	0.139
CAD history	-0.123 (-0.265, 0.020)	0.091	-0.145 (-0.317, 0.027)	0.097	-0.187 (-0.354, -0.019)	<b>0.030</b>	-1.032 (-1.540, -0.525)	<b>&lt;0.001</b>
HF history	-0.153 (-0.226, -0.039)	<b>0.008</b>	-0.111 (-0.247, 0.026)	0.113	-0.182 (-0.316, -0.049)	<b>0.008</b>	-0.170 (-0.577, 0.237)	0.413
PAD history	-0.234 (-0.371, 0.096)	<b>0.001</b>	-0.200 (-0.366, -0.034)	<b>0.018</b>	-0.290 (-0.452, 0.128)	<b>&lt;0.001</b>	-1.137 (-1.627, -0.647)	<b>&lt;0.001</b>
Hemoglobin (per g/dL)	0.102 (0.073, 0.131)	<b>&lt;0.001</b>	0.091 (0.056, 0.126)	<b>&lt;0.001</b>	0.114 (0.080, 0.147)	<b>&lt;0.001</b>	0.176 (0.072, 0.280)	<b>0.001</b>
WBC (per 1000 cells/microL)	0.145 (0.116, 0.175)	<b>&lt;0.001</b>	0.144 (0.109, 0.180)	<b>&lt;0.001</b>	0.110 (0.074, 0.145)	<b>&lt;0.001</b>	0.052 (-0.056, 0.890)	0.346
Ejection Fraction (per 1%)	-0.001	0.551	-0.003	0.296	-0.0004	0.870	-0.012	0.139

	(-0.006, 0.003)		(-0.008, 0.002)		(-0.006, 0.005)		(-0.027, 0.004)	
hsTnI (per 1-unit)	-0.065 (-0.109, -0.022)	<b>0.003</b>	-0.046 (-0.099, 0.006)	0.085	-0.077 (-0.128, -0.025)	<b>0.004</b>	0.020 (-0.136, 0.177)	0.799
BNP (per 1-unit)	-0.106 (-0.147, -0.066)	<b>&lt;0.001</b>	-0.103 (-0.153, -0.053)	<b>&lt;0.001</b>	-0.102 (-0.151, -0.052)	<b>&lt;0.001</b>	-0.067 (-0.219, 0.084)	0.382
ACEi/ARB use	0.084 (-0.024, 0.193)	0.129	0.096 (-0.035, 0.227)	0.149	-0.056 (-0.184, 0.072)	0.389	-0.516 (-0.904, -0.128)	<b>0.009</b>
Aspirin use	0.053 (-0.079, 0.185)	0.432	0.102 (-0.057, 0.261)	0.208	-0.003 (-0.159, 0.153)	0.972	-0.852 (-0.1323, -0.381)	<b>&lt;0.001</b>
Beta blocker use	0.044 (-0.079, 0.166)	0.484	0.147 (-0.0001, 0.295)	0.050	-0.021 (-0.165, 0.124)	0.779	-0.736 (-1.172, -0.299)	<b>0.001</b>
Clopidogrel use	-0.026 (-0.138, 0.085)	0.643	-0.062 (-0.197, 0.072)	0.364	-0.084 (-0.215, 0.048)	0.213	-0.543 (-0.942, -0.144)	<b>0.008</b>
Statin use	-0.001 (-0.120, 0.118)	0.989	0.033 (-0.110, 0.176)	0.652	-0.114 (-0.254, 0.026)	0.110	-0.858 (-1.280, -0.436)	<b>&lt;0.001</b>

Dependent variables are log-transformed PC counts. hsTnI and BNP are non-normally distributed and were log-transformed during analysis. eGFR=estimated glomerular filtration rate, CAD=coronary artery disease, HF=heart failure, PAD=peripheral artery disease,

ACEi=angiotensin converting enzyme inhibitor, ARB=angiotensin-II receptor blocker, hsTnI=high-sensitivity troponin I, BNP=B-type natriuretic peptide, CD=cluster of differentiation, VEGF2R=vascular endothelial growth factor receptor 2, CXCR4=C-X-C chemokine receptor type 4.

**Supplemental Table 3:** Association of dialysis with circulating progenitor cell counts

	CD34+		CD34+/CD133+		CD34+/CXCR4+		CD34+/VEGF2R+	
	Beta (95% CI)	p-value	Beta (95% CI)	p-value	Beta (95% CI)	p-value	Beta (95% CI)	p-value
<b>Model 1</b>								
Overall	-10.2% (-23.2%, 5.0%)	0.176	-0.9% (-17.9%, 19.5%)	0.925	-7.3% (-23.0%, 11.7%)	0.427	-5.0% (-46.1%, 67.5%)	0.859
Age <70 years	-4.9% (-19.4%, 12.3%)	0.556	3.0% (-14.5%, 24.1%)	0.752	1.7% (-16.7%, 24.1%)	0.870	0.9% (-43.7%, 70.8%)	0.997
Age ≥70 years	<b>-56.4%</b> <b>(-75.3%, -23.2%)</b>	<b>0.004</b>	-38.3% (-71.2%, 31.9%)	0.213	<b>-70.5%</b> <b>(-84.7%, -43.3%)</b>	<b>&lt;0.001</b>	-66.1% (-96.1%, 196.6%)	0.329
<b>Model 2</b>								
Overall	-3.9% (-18.1%, 12.9%)	0.629	2.9% (-15.1%, 25.2%)	0.776	-1.2% (-18.7%, 20.1%)	0.901	10.8% (-39.4%, 102.8%)	0.738
Age <70 years	1.1% (-15.0%, 20.3%)	0.903	5.3% (-13.5%, 28.3%)	0.605	7.6% (-13.3%, 33.5%)	0.505	16.9% (-38.2%, 120.9%)	0.632

Age $\geq$ 70 years	<b>-49.5%</b> <b>(-70.8%, -12.8%)</b> <b>0.014</b>	-29.5% (-66.7%, 49.2%) 0.361	<b>-66.5%</b> <b>(-82.2%, -36.8%)</b> <b>0.001</b>	-59.4% (-95.1%, 238.1%) 0.405
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Dependent variables are log-transformed CPC counts. Model 1 adjusted for continuous age. Model 2 adjusted for continuous age, sex, race, diabetes, current smoking, hypertension, hypercholesterolemia, body mass index, hemoglobin, white blood cell count, CAD history, HF history, PAD history, and cardiovascular medication use (ACEi/ARB, aspirin, beta blocker, clopidogrel, and statin). CI=confidence interval, other abbreviations are same as Table 1.

**Supplemental Table 4:** Association of renal insufficiency with adverse outcomes

	Cardiovascular Death/MI		All-Cause Mortality	
	Hazard Ratio (95% CI)	p-value	Hazard Ratio (95% CI)	p-value
<b>Multivariable Model*</b>	1.48 (1.08-2.03)	0.014	1.39 (1.06-1.83)	0.019
<b>Model 1</b>				
Renal Insufficiency	1.45 (1.06-1.99)	0.021	1.35 (1.02-1.79)	0.033
CD34+	1.21 (1.05-1.39)	0.010	1.19 (1.05-1.35)	0.006
<b>Model 2</b>				
Renal Insufficiency	1.46 (1.06-2.00)	0.020	1.37 (1.04-1.81)	0.025
CD34+/CD133+	1.18 (1.07-1.31)	0.001	1.15 (1.04-1.26)	0.004
<b>Model 3</b>				
Renal Insufficiency	1.45 (1.06-1.99)	0.022	1.35 (1.02-1.79)	0.034
CD34+/CXCR4+	1.25 (1.10-1.42)	0.001	1.20 (1.07-1.36)	0.002
<b>Model 4</b>				
Renal Insufficiency	1.49 (1.09-2.04)	0.013	1.40 (1.06-1.84)	0.017
CD34+/VEGF2R+	1.02 (0.98-1.06)	0.420	1.04 (0.99-1.08)	0.069

Multivariable Cox models included age, eGFR, sex, race, diabetes, current smoking, hypertension, hypercholesterolemia, body mass index, hemoglobin, white blood cell count, CAD history, HF history, PAD history, ACEi/ARB use, aspirin use, beta blocker use, clopidogrel use, and statin use as covariates. Stepwise Cox regression using backward elimination with model removal p-threshold=0.10 was used to analyze all covariates.



**Supplemental Table 5:** Independent determinants of adverse outcomes in patients with renal insufficiency

<b>Cardiovascular Death/MI</b>		<b>All-Cause Mortality</b>	
<b>Hazard Ratio (95% CI), p-value</b>		<b>Hazard Ratio (95% CI), p-value</b>	
Age (per year)	1.05 (1.03-1.07), p<0.001	Age (per year)	1.02 (1.01-1.04), p=0.007
eGFR (per mL/min/1.73m <sup>2</sup> )	0.98 (0.96-0.99), p=0.001	eGFR (per mL/min/1.73m <sup>2</sup> )	0.98 (0.97-0.996), p=0.011
Current Smoking	2.53 (1.07-6.00), p=0.034	Race	0.54 (0.32-0.90), p=0.018
HF history	1.90 (1.22-2.95), p=0.005	HF history	2.02 (1.38-2.95), p<0.001
Hemoglobin (per 1-g/dl)	0.85 (0.75-0.97), p=0.014	Hemoglobin (per 1-g/dl)	0.83 (0.74-0.92), p=0.001
		ACEi/ARB use	0.52 (0.36-0.76), p=0.001

Renal insufficiency is the exposure variable of interest. \*Model adjusted for age, sex, race, diabetes, current smoking, hypertension, hypercholesterolemia, body mass index, hemoglobin, white blood cell count, CAD history, HF history, PAD history, ACEi/ARB use, aspirin use, beta blocker use, clopidogrel use, and statin use as covariates. Stepwise Cox regression using backward elimination with model removal p-threshold=0.10 was used to analyze all covariates. Log-transformed CPC counts were added sequentially to the multivariable model.

**Supplemental Table 6:** Association of CPC counts with CV death/MI events using Fine and Gray competing risk regression models

	CD34+		CD34+/CD133+		CD34+/CXCR4+		CD34+/VEGF2R+	
	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value
<b>CV death/MI</b>								
Univariable	<b>1.44 (1.24, 1.67)</b>	<b>&lt;0.001</b>	<b>1.27 (1.17, 1.38)</b>	<b>&lt;0.001</b>	<b>1.37 (1.17, 1.60)</b>	<b>&lt;0.001</b>	0.99 (0.94, 1.06)	0.902
Multivariable	<b>1.32 (1.13, 1.54)</b>	<b>&lt;0.001</b>	<b>1.29 (1.19, 1.40)</b>	<b>&lt;0.001</b>	<b>1.31 (1.12, 1.54)</b>	<b>&lt;0.001</b>	0.97 (0.91, 1.05)	0.484

Multivariable Fine and Gray competing risk regression models included log-transformed CPC count, eGFR, age, sex, race, diabetes, current smoking, hypertension, hypercholesterolemia, body mass index, hemoglobin, white blood cell count, CAD history, HF history, PAD history, ACEi/ARB use, aspirin use, beta blocker use, clopidogrel use, and statin use as covariates. Stepwise regression using backward elimination with model removal p-threshold=0.10 was used to analyze all covariates. CPC=circulating progenitor cell, HR=hazard ratio, CI=confidence interval, CV=cardiovascular, MI=myocardial infarction.

**Supplemental Table 7:** Independent association of CPC counts with adverse outcomes in patients with renal insufficiency

	CD34+		CD34+/CD133+		CD34+/CXCR4+		CD34+/VEGF2R+	
	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value
<b>CV death/MI</b>								
Multivariable + hsTnI	<b>1.24 (1.01-1.51)</b>	<b>0.037</b>	<b>1.26 (1.13-1.41)</b>	<b>&lt;0.001</b>	<b>1.25 (1.03-1.52)</b>	<b>0.026</b>	0.99 (0.93, 1.07)	0.870
Multivariable + BNP	<b>1.29 (1.04-1.60)</b>	<b>0.020</b>	<b>1.28 (1.14-1.44)</b>	<b>&lt;0.001</b>	<b>1.30 (1.06-1.60)</b>	<b>0.012</b>	1.02 (0.95-1.09)	0.638
<b>All-cause mortality</b>								
Multivariable + hsTnI	1.12 (0.93-1.34)	0.222	<b>1.18 (1.05-1.32)</b>	<b>0.006</b>	1.09 (0.91-1.31)	0.368	0.97 (0.91-1.03)	0.367
Multivariable + BNP	1.16 (0.67-1.40)	0.106	<b>1.18 (1.05-1.32)</b>	<b>0.005</b>	1.13 (0.94-1.36)	0.207	0.98 (0.92-1.05)	0.609

Multivariable Cox models included log-transformed CPC count, eGFR, age, sex, race, diabetes, current smoking, hypertension, hypercholesterolemia, body mass index, hemoglobin, white blood cell count, CAD history, HF history, PAD history, ACEi/ARB use, aspirin use, beta blocker use, clopidogrel use, and statin use as covariates. Stepwise Cox regression using backward elimination with model removal p-threshold=0.10 was used to analyze all covariates. Log-transformed hsTnI and BNP were added to multivariable models.

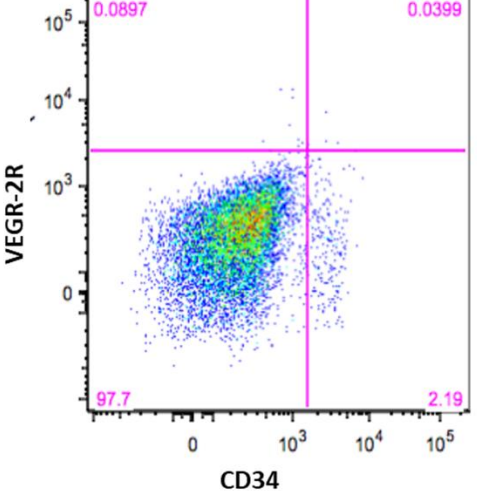
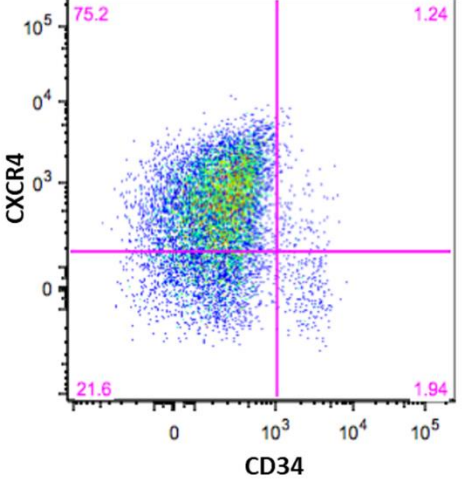
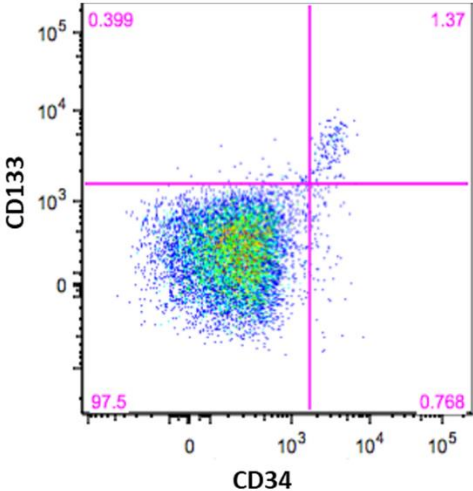
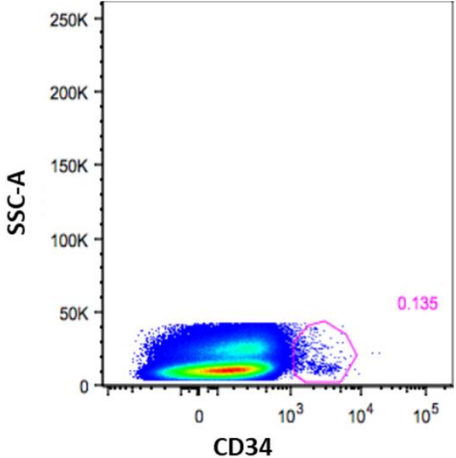
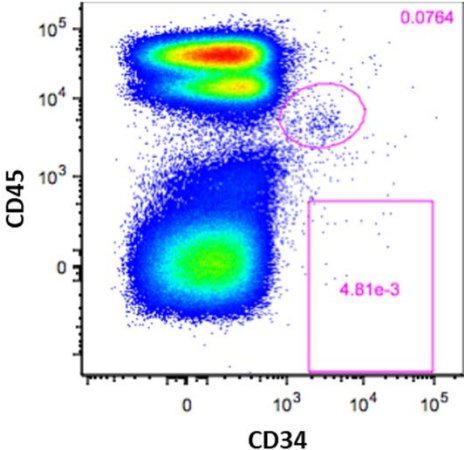
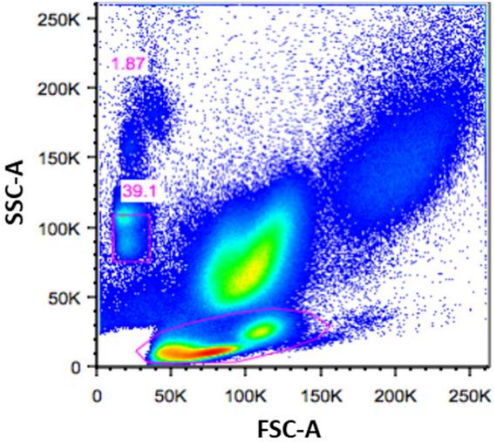
**Supplemental Table 8:** Association of CPC count and RI categories CV death/MI events using Fine and Gray competing risk regression models

<b>CV death/MI</b>		
	<b>HR (95% CI)</b>	<b>p-value</b>
<b>CD34+</b>		
No Renal Insufficiency	Referent	
Renal Insufficiency and Count $\geq 1507$ cells/mL	1.12 (0.74-1.72)	0.586
Renal Insufficiency and Count $< 1507$ cells/mL	<b>1.67 (1.18-2.37)</b>	<b>0.004</b>
<b>CD34+/CD133+</b>		
No Renal Insufficiency	Referent	
Renal Insufficiency and Count $\geq 741$ cells/mL	1.08 (0.71-1.64)	0.791
Renal Insufficiency and Count $< 741$ cells/mL	<b>1.72 (1.21-2.44)</b>	<b>0.003</b>
<b>CD34+/CXCR4+</b>		
No Renal Insufficiency	Referent	
Renal Insufficiency and Count $\geq 762$ cells/mL	1.13 (0.75-1.70)	0.547

Renal Insufficiency and Count <762 cells/mL	<b>1.68 (1.17-2.40)</b>	<b>0.005</b>
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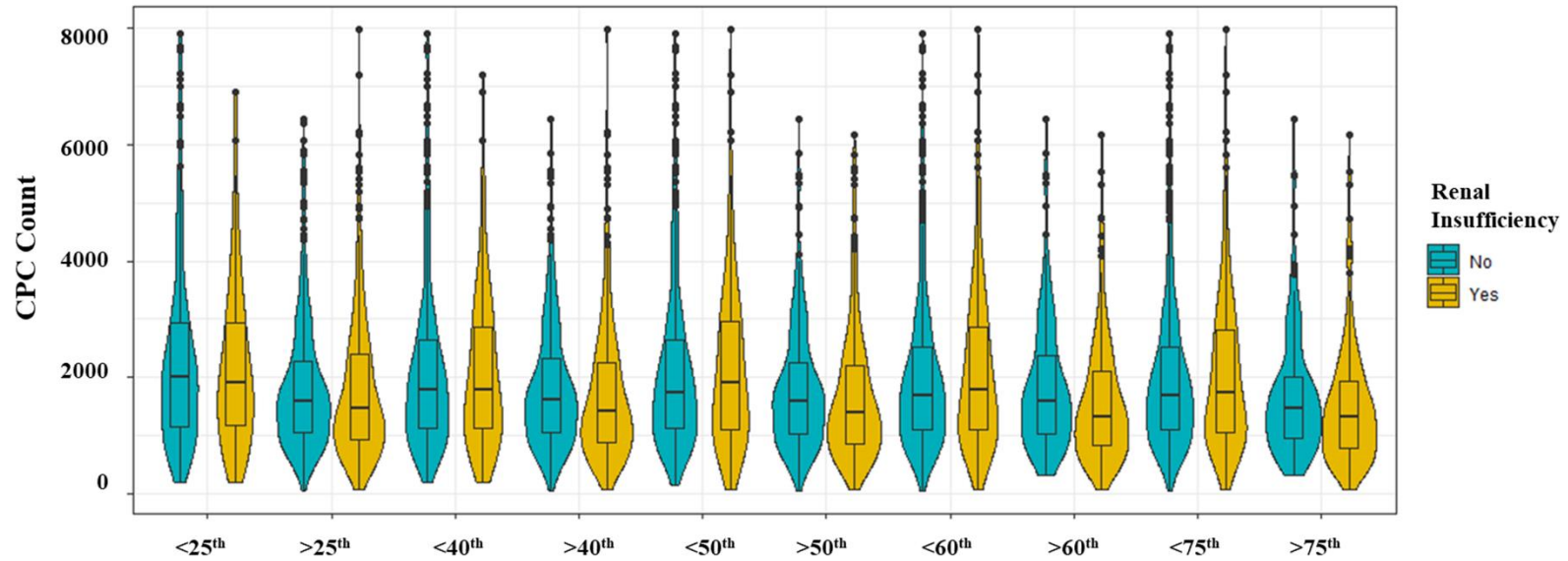
Multivariable Fine and Gray competing risk regression models include renal insufficiency and CPC count category, eGFR, age, sex, race, diabetes, current smoking, hypertension, hypercholesterolemia, body mass index, hemoglobin, white blood cell count, CAD history, HF history, PAD history, ACEi/ARB use, aspirin use, beta blocker use, clopidogrel use, and statin use as covariates. Stepwise regression using backward elimination with model removal p-threshold=0.10 was used to analyze all covariates. HR=hazard ratio, CI=confidence interval, CV=cardiovascular, MI=myocardial infarction, rest of the abbreviations are the same as Table 1.

Supplemental Figure 1: Fluorescence-Activated Cell Sorting analysis



**Supplemental Figure 2:** Association of renal insufficiency with circulating progenitor cell counts across age percentiles (25<sup>th</sup> percentile=57.2 years, 40<sup>th</sup> percentile=62.7 years, 50<sup>th</sup> percentile=65.9 years, 60<sup>th</sup> percentile=69.0 years, 75<sup>th</sup> percentile=75.2 years)

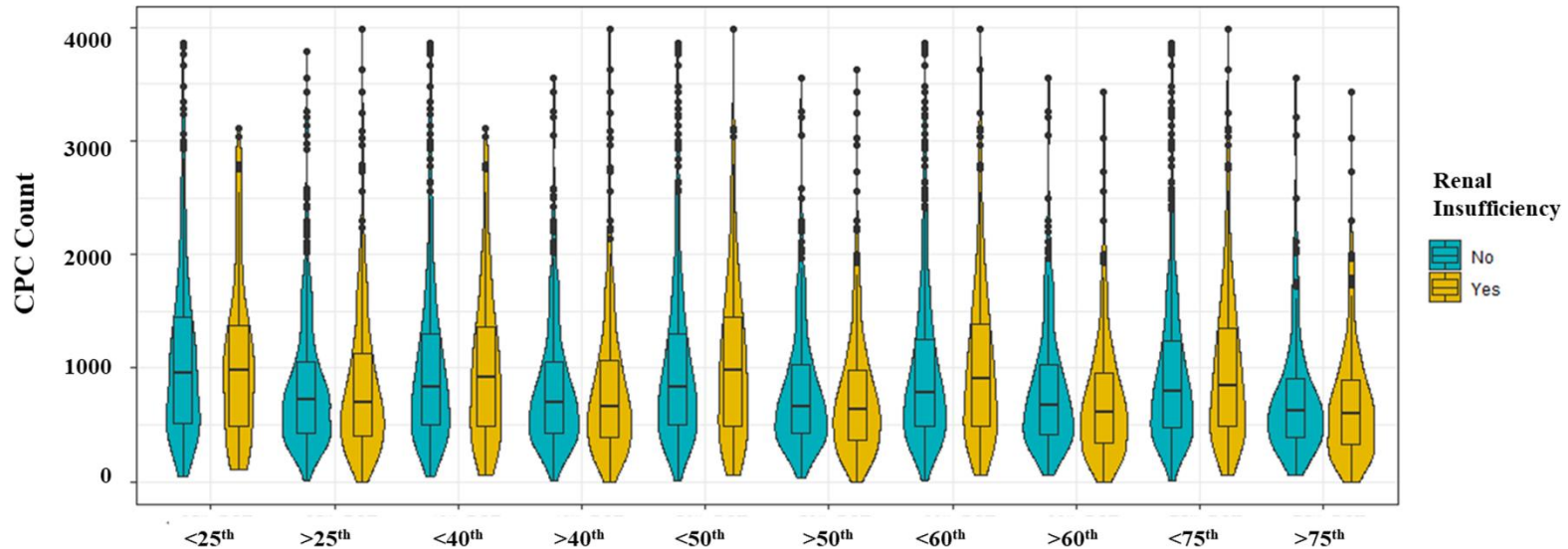
**A. Renal Insufficiency and CD34+ Counts**



Participant N	No RI 242 RI 77	No RI 593 RI 369	No RI 382 RI 130	No RI 453 RI 316	No RI 472 RI 168	No RI 363 RI 278	No RI 561 RI 208	No RI 274 RI 238	No RI 691 RI 270	No RI 144 RI 176
<b>No RI Count</b>	2022 [1173,3042]	1601 [1048,2295]	1783 [1117,2693]	1616 [1048,2352]	1753 [1119,2696]	1601 [1028,2262]	1705 [1106,2630]	1610 [1043,2303]	1712 [1114,2566]	1445 [945,2014]
<b>RI Count</b>	1902 [1170,2946]	1461 [937,2429]	1777 [1129,2899]	1430 [885,2250]	1933 [1104,2972]	1397 [861,2199]	1802 [1085,2847]	1344 [516,2149]	1737 [1052,2839]	1313 [760,1948]
<b>P-value</b>	0.374	0.124	0.951	<b>0.035</b>	0.640	<b>0.018</b>	0.524	<b>0.003</b>	0.794	0.053

**Supplemental Figure 2:** Association of renal insufficiency with circulating progenitor cell counts across age percentiles (25<sup>th</sup> percentile=57.2 years, 40<sup>th</sup> percentile=62.7 years, 50<sup>th</sup> percentile=65.9 years, 60<sup>th</sup> percentile=69.0 years, 75<sup>th</sup> percentile=75.2 years)

**B. Renal Insufficiency and CD34+/CD133+ Counts**

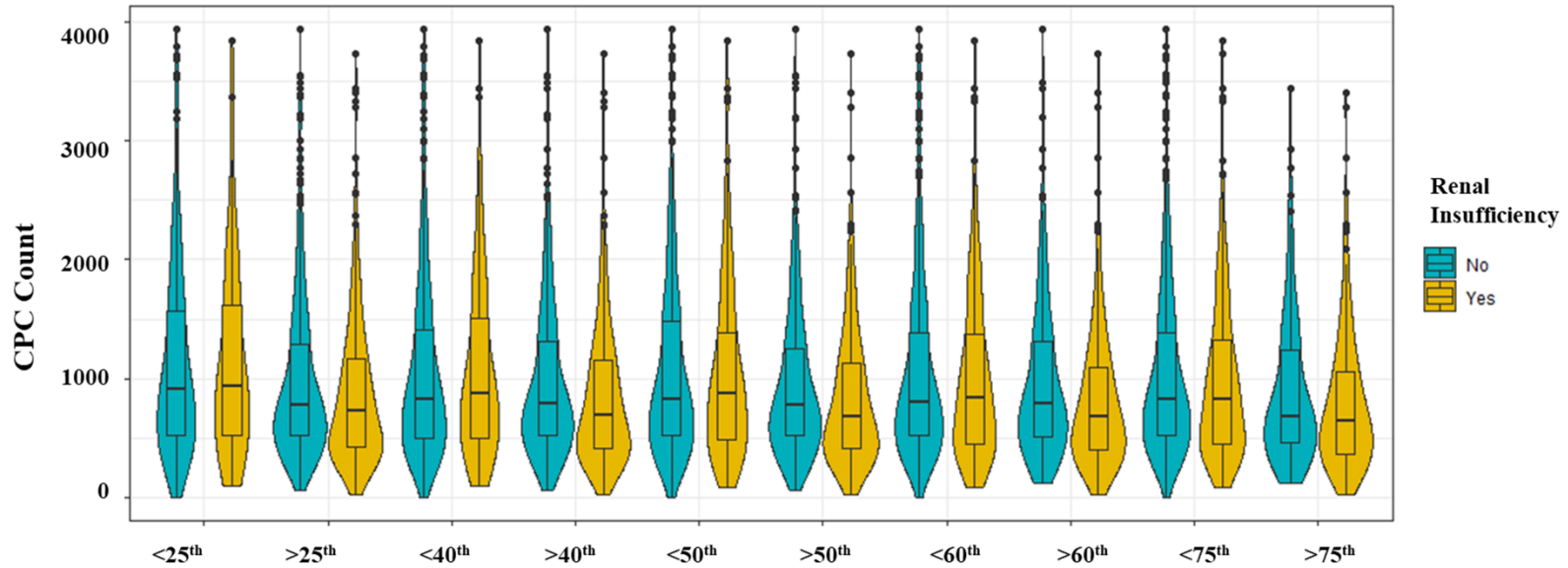


Participant N	No RI 242 RI 77	No RI 593 RI 369	No RI 382 RI 130	No RI 453 RI 316	No RI 472 RI 168	No RI 363 RI 278	No RI 561 RI 208	No RI 274 RI 238	No RI 691 RI 270	No RI 144 RI 176
<b>No RI Count</b>	998 [514,1531]	722 [431,1065]	849 [500,1378]	702 [429,1065]	845 [500,1376]	669 [423,1030]	802 [484,1318]	668 [424,1037]	797 [484,1287]	621 [376,911]
<b>RI Count</b>	972 [462,1371]	703 [402,1142]	823 [492,1377]	659 [397,1093]	979 [493,1507]	637 [372,992]	923 [506,1387]	615 [342,970]	856 [487,1350]	647 [369,1070]
<b>P-value</b>	0.297	0.570	0.990	0.318	0.523	0.250	0.285	0.059	0.494	0.328



**Supplemental Figure 2:** Association of renal insufficiency with circulating progenitor cell counts across age percentiles (25<sup>th</sup> percentile=57.2 years, 40<sup>th</sup> percentile=62.7 years, 50<sup>th</sup> percentile=65.9 years, 60<sup>th</sup> percentile=69.0 years, 75<sup>th</sup> percentile=75.2 years)

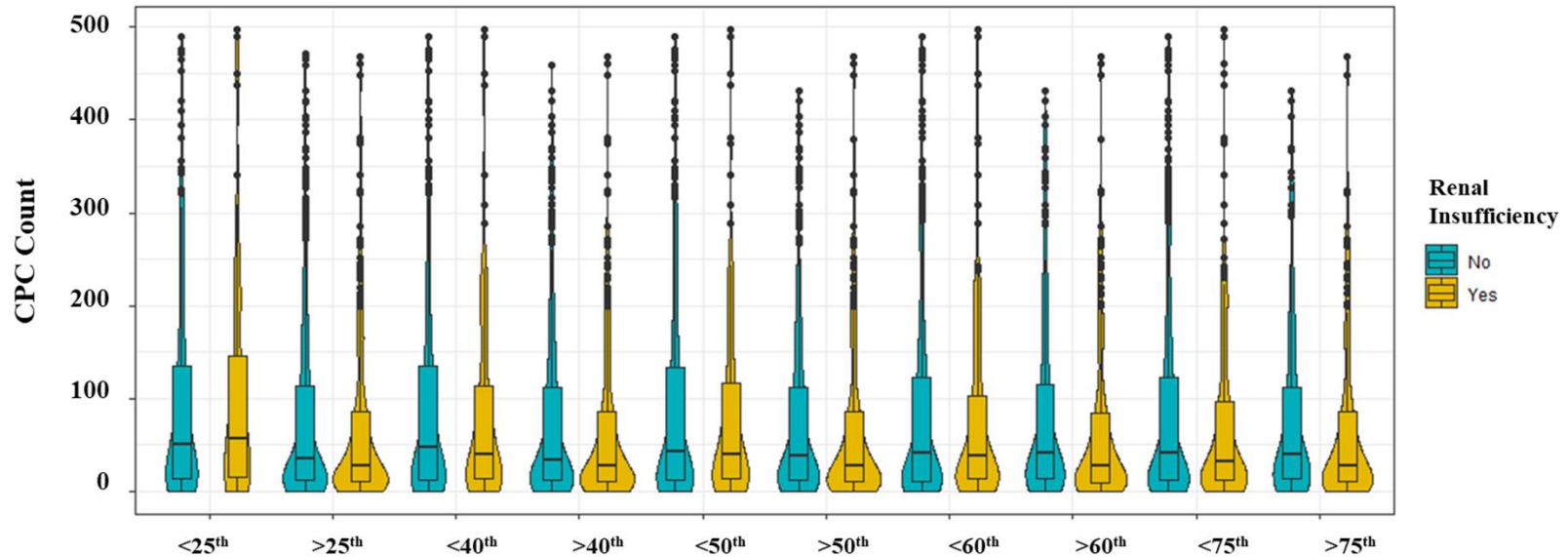
**C. Renal Insufficiency and CD34+/CXCR4+ Counts**



	<25 <sup>th</sup>	>25 <sup>th</sup>	<40 <sup>th</sup>	>40 <sup>th</sup>	<50 <sup>th</sup>	>50 <sup>th</sup>	<60 <sup>th</sup>	>60 <sup>th</sup>	<75 <sup>th</sup>	>75 <sup>th</sup>
<b>Participant N</b>	No RI 242 RI 77	No RI 593 RI 369	No RI 382 RI 130	No RI 453 RI 316	No RI 472 RI 168	No RI 363 RI 278	No RI 561 RI 208	No RI 274 RI 238	No RI 691 RI 270	No RI 144 RI 176
<b>No RI Count</b>	940 [533,1654]	784 [515,1312]	845 [511,1516]	786 [521,1326]	842 [520,1520]	785 [515,1281]	820 [520,1488]	797 [515,1305]	835 [528,1457]	699 [459,1450]
<b>RI Count</b>	947 [517,1690]	731 [424,1188]	878 [500,1615]	712 [410,1176]	880 [490,1551]	688 [411,1145]	872 [469,1423]	675 [411,1132]	847 [452,1366]	599 [328,891]
<b>P-value</b>	0.763	<b>0.028</b>	0.849	<b>0.007</b>	0.976	<b>0.011</b>	0.888	<b>0.007</b>	0.381	0.181

**Supplemental Figure 2:** Association of renal insufficiency with circulating progenitor cell counts across age percentiles (25<sup>th</sup> percentile=57.2 years, 40<sup>th</sup> percentile=62.7 years, 50<sup>th</sup> percentile=65.9 years, 60<sup>th</sup> percentile=69.0 years, 75<sup>th</sup> percentile=75.2 years)

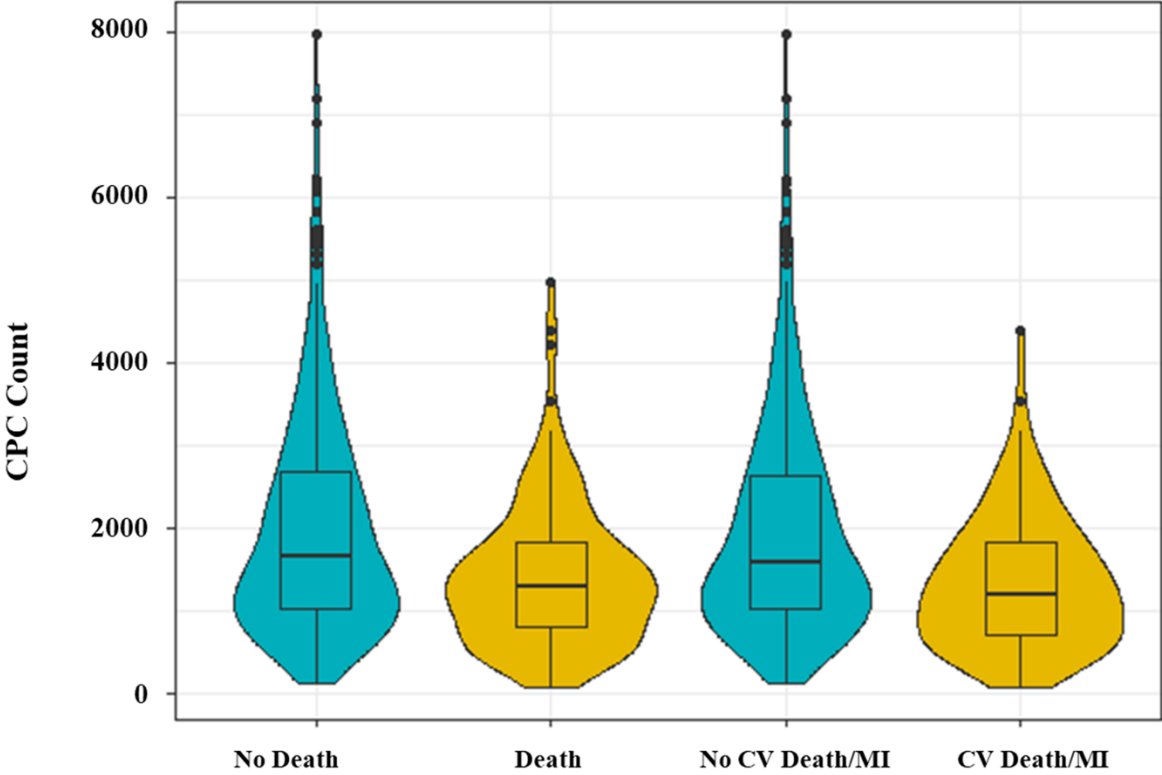
**D. Renal Insufficiency and CD34+/VEGF2R+ Counts**



Participant N	No RI 242 RI 77	No RI 593 RI 369	No RI 382 RI 130	No RI 453 RI 316	No RI 472 RI 168	No RI 363 RI 278	No RI 561 RI 208	No RI 274 RI 238	No RI 691 RI 270	No RI 144 RI 176
No RI Count	58 [14,166]	41 [12,140]	52 [13,155]	41 [12,140]	49 [12,155]	41 [13,130]	48 [12,146]	42 [13,148]	47 [12,146]	43 [13,145]
RI Count	74 [18,213]	31 [11,93]	45 [13,142]	32 [11,101]	45 [14,137]	30 [11,93]	41 [14,127]	29 [9,98]	40 [13,129]	30 [11,92]
P-value	0.524	0.051	0.618	0.104	0.862	<b>0.039</b>	0.756	<b>0.033</b>	0.407	0.079

**Supplemental Figure 3: Circulating progenitor cell counts among participants with and without cardiovascular events**

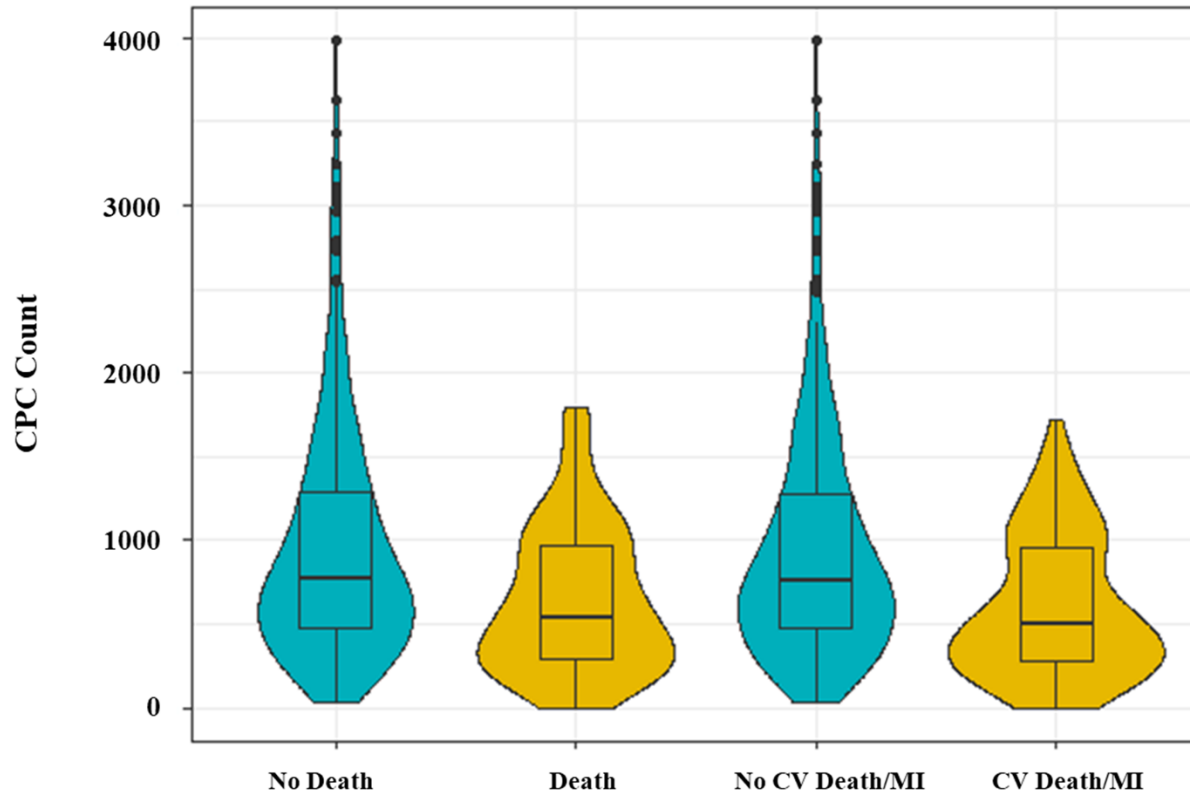
**A. CD34+ Counts**



<b>N</b>	<b>318</b>	<b>118</b>	<b>347</b>	<b>89</b>
<b>Counts</b>	<b>1639</b> [1014,2679]	<b>1280</b> [784,1843]	<b>1581</b> [1015,2649]	<b>1184</b> [657,1819]
<b>P-value</b>	<b>&lt;0.001</b>		<b>&lt;0.001</b>	

**Supplemental Figure 3: Circulating progenitor cell counts among participants with and without cardiovascular events**

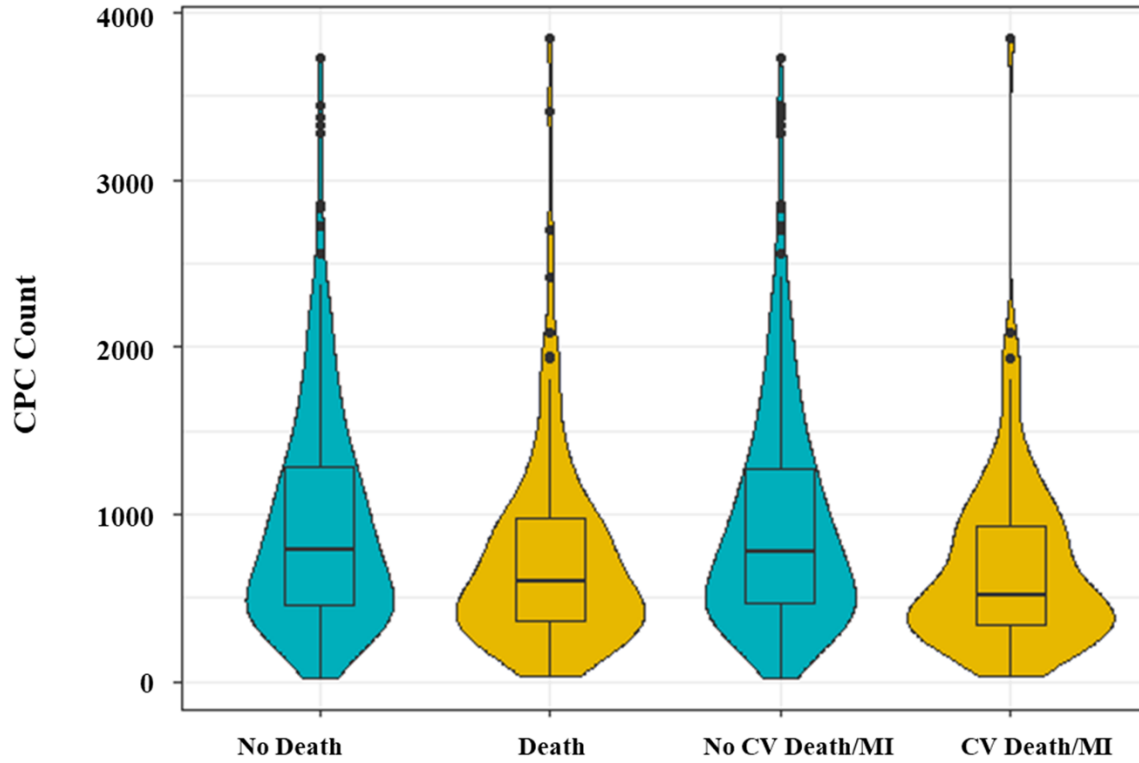
**B. CD34+/CD133+ Counts**



<b>N</b>	<b>318</b>	<b>118</b>	<b>347</b>	<b>89</b>
<b>Counts</b>	<b>774</b> [471,1290]	<b>542</b> [289,967]	<b>765</b> [472,1283]	<b>497</b> [271,963]
<b>P-value</b>	<b>&lt;0.001</b>		<b>&lt;0.001</b>	

**Supplemental Figure 3: Circulating progenitor cell counts among participants with and without cardiovascular events**

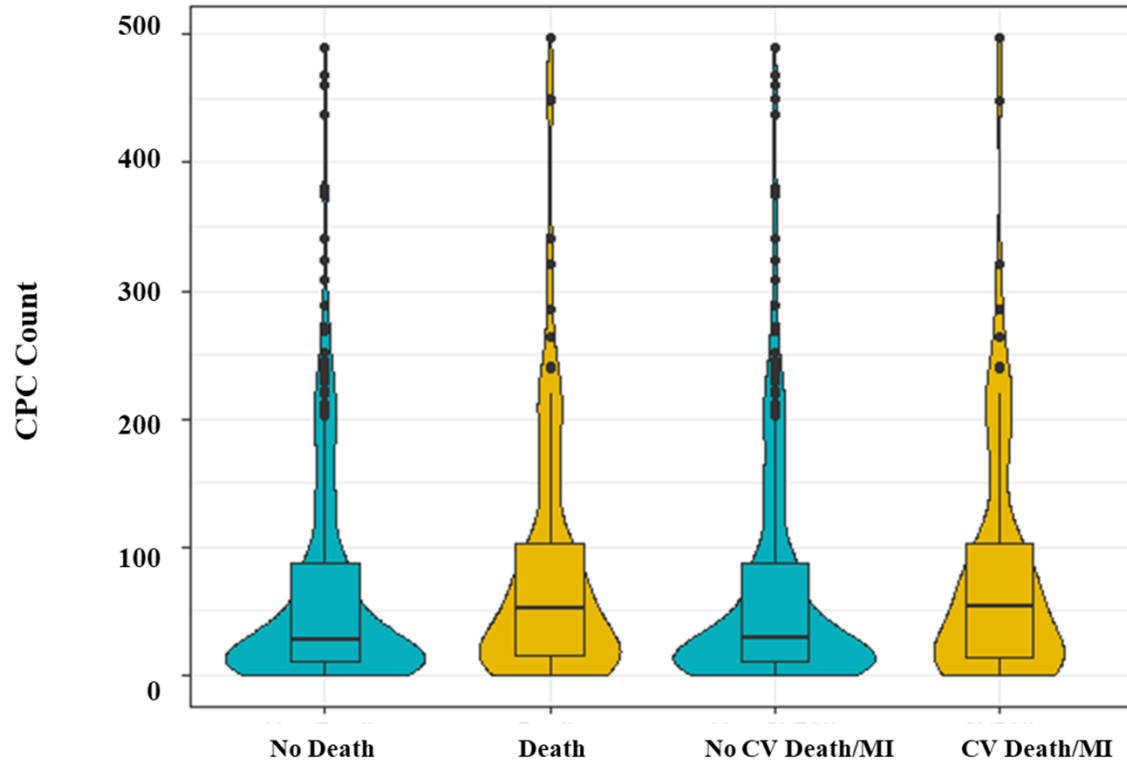
**C. CD34+/CXCR4+ Counts**



<b>N</b>	<b>318</b>	<b>118</b>	<b>347</b>	<b>89</b>
<b>Counts</b>	<b>810</b> [465,1361]	<b>599</b> [358,991]	<b>794</b> [473,1352]	<b>518</b> [336,949]
<b>P-value</b>	<b>&lt;0.001</b>		<b>&lt;0.001</b>	

**Supplemental Figure 3: Circulating progenitor cell counts among participants with and without cardiovascular events**

**D. CD34+/VEGF2R+ Counts**



<b>N</b>	<b>318</b>	<b>118</b>	<b>347</b>	<b>89</b>
<b>Counts</b>	<b>33 [11,114]</b>	<b>53 [15,111]</b>	<b>34 [12,113]</b>	<b>56 [14,109]</b>
<b>P-value</b>	<b>0.160</b>		<b>0.318</b>	