

## **SUPPLEMENTAL TABLES AND FIGURES**

### **Table of Contents:**

Page 2: Supplemental Table 1: Baseline characteristics by quartile of N-terminal pro B-type natriuretic peptide (NT-proBNP)

Page 3: Supplemental Table 2: Baseline characteristics by category of high-sensitivity troponin T (hsTnT)

Page 4: Supplemental Table 3: Baseline characteristics by quartile of growth differentiation factor 15 (GDF-15)

Page 5: Supplemental Table 4: Baseline characteristics by quartile of soluble ST2 (sST2)

Page 6: Supplemental Table 5: Number and incidence rate of atherosclerotic disease by biomarker categories

Page 7: Supplemental Table 6: Associations of categorical biomarkers with incident atherosclerotic disease

Page 8: Supplemental Table 7: Further adjusting for cardioprotective medications, high-sensitivity C-reactive protein, and markers of bone mineral metabolism

Page 9: Supplemental Figure 1: CONSORT flow diagram for study size

Page 10: Supplemental Figure 2: Incidence rates of atherosclerotic events by biomarker category, adjusted for demographic data, kidney function, comorbidities, and medication use

**Supplemental Table 1: Baseline characteristics by quartile of N-terminal pro B-type natriuretic peptide (NT-proBNP)**

	Quartile 1 NT-proBNP ≤ 36.7 pg/mL	Quartile 2 NT-proBNP 36.7 – 99.6 pg/mL	Quartile 3 NT-proBNP 99.6 – 258 pg/mL	Quartile 4 NT-proBNP > 258 pg/mL
N	640	640	640	640
Age, years	52.7 (11.8)	55.9 (11.4)	57.3 (11.6)	58.2 (10.9)
Women	239 (37)	314 (49)	356 (56)	338 (53)
Race and Ethnicity				
Non-Hispanic white	286 (45)	285 (45)	299 (47)	231 (36)
Non-Hispanic black	280 (44)	254 (40)	222 (35)	247 (39)
Hispanic	46 (7)	69 (11)	93 (15)	139 (22)
Other	28 (4)	32 (5)	26 (4)	23 (4)
Estimated glomerular filtration rate, mL/min per 1.73 m <sup>2</sup>	54.2 (14.4)	48.3 (15.0)	43.2 (13.8)	37.3 (13.0)
24-hour urine protein (g/day), median	0.1 (0.1-0.4)	0.1 (0.1-0.7)	0.2 (0.1-0.8)	0.4 (0.1-2.1)
24-hour urine sodium (mg/day), median	3712.8 (2593.0-5052.7)	3483.6 (2651.6-4842.2)	3334.4 (2369.6-4483.6)	3331.2 (2287.9-4353.0)
Diabetes mellitus	205 (32)	251 (39)	291 (45)	358 (56)
History of heart failure	10 (2)	11 (2)	16 (2)	66 (10)
History of atrial fibrillation	45 (7)	61 (10)	77 (12)	119 (19)
Systolic blood pressure, mmHg	119.4 (15.7)	122.9 (18.2)	127.6 (20.3)	139.2 (24.2)
Diastolic blood pressure, mmHg	73.0 (11.3)	71.9 (11.4)	71.9 (12.0)	73.3 (15.1)
Body mass index, kg/m <sup>2</sup>	31.6 (6.6)	31.9 (7.9)	32.3 (8.8)	32.0 (8.7)
Current smoker	57 (9)	61 (10)	84 (13)	101 (16)
Alcohol use	473 (74)	450 (70)	412 (64)	363 (57)
Hemoglobin, g/dL	13.5 (1.6)	12.8 (1.6)	12.5 (1.6)	11.8 (1.9)
LDL cholesterol, mg/dL	108.5 (33.7)	106.3 (34.6)	106.4 (36.2)	103.6 (36.0)
HDL cholesterol, mg/dL	47.7 (14.5)	48.6 (16.1)	49.2 (16.1)	49.3 (17.5)
C-reactive protein, mg/L, median	2.2 (0.9-4.9)	2.2 (0.9-5.6)	2.8 (1.0-6.6)	2.6 (1.1-7.0)
Fibroblast growth factor-23 (RU/mL), median	102.4 (76.0-149.0)	123.5 (87.0-186.3)	146.9 (96.4-226.0)	197.1 (125.6-319.4)
Serum phosphorus, mg/dL	3.6 (0.6)	3.6 (0.6)	3.7 (0.6)	3.9 (0.7)
Total parathyroid hormone (pg/mL), median	41.0 (30.0-58.0)	48.0 (32.5-78.0)	52.9 (33.4-86.3)	71.5 (43.0-123.3)
ACEi/ARB	412 (64)	430 (67)	421 (66)	407 (64)
Aspirin	198 (31)	202 (32)	234 (37)	240 (38)
Statins	270 (42)	302 (47)	295 (46)	323 (50)
Beta-blockers	137 (21)	202 (32)	289 (45)	385 (60)
Diuretics	269 (42)	312 (49)	365 (57)	430 (67)
Framingham 10 year CVD risk (%), median	11.2 (4.7-21.5)	13.2 (6.3-25.3)	15.6 (7.3-28.5)	21.5 (11.7-30.0)

Entries are mean (SD) for continuous variables and N (%) for categorical variables, except as noted.

**Supplemental Table 2: Baseline characteristics by category of high-sensitivity troponin T (hsTnT)**

	Undetectable hsTnT <10 pg/mL	Tertile 1 hsTnT 10 - 15.2 pg/mL	Tertile 2 hsTnT 15.2 - 25.6 pg/mL	Tertile 3 hsTnT > 25.6 pg/mL
N	964	532	532	532
Age, years	52.5 (11.9)	58.2 (11.0)	59.1 (10.7)	57.1 (11.0)
Women	647 (67)	245 (46)	204 (38)	151 (28)
Race and Ethnicity				
Non-Hispanic white	494 (51)	263 (49)	213 (40)	131 (25)
Non-Hispanic black	327 (34)	190 (36)	219 (41)	267 (50)
Hispanic	92 (10)	61 (11)	74 (14)	120 (23)
Other	51 (5)	18 (3)	26 (5)	14 (3)
Estimated glomerular filtration rate, mL/min per 1.73 m <sup>2</sup>	52.8 (15.8)	45.5 (13.2)	42.1 (12.9)	36.8 (12.7)
24-hour urine protein (g/day), median	0.1 (0.1-0.3)	0.1 (0.1-0.5)	0.2 (0.1-1.1)	0.8 (0.2-3.2)
24-hour urine sodium (mg/day), median	3297.3 (2366.7-4460.8)	3446.1 (2540.0-4655.1)	3708.0 (2684.3-4728.1)	3581.2 (2500.8-4849.9)
Diabetes mellitus	221 (23)	207 (39)	268 (50)	409 (77)
History of heart failure	12 (1)	13 (2)	23 (4)	55 (10)
History of atrial fibrillation	91 (9)	55 (10)	78 (15)	78 (15)
Systolic blood pressure, mmHg	119.7 (16.8)	126.5 (20.0)	129.6 (20.4)	139.6 (23.9)
Diastolic blood pressure, mmHg	72.2 (11.3)	72.1 (12.1)	72.2 (12.9)	74.1 (14.5)
Body mass index, kg/m <sup>2</sup>	30.8 (7.7)	31.7 (8.3)	33.1 (8.1)	33.2 (8.0)
Current smoker	116 (12)	63 (12)	58 (11)	66 (12)
Alcohol use	702 (73)	356 (67)	354 (67)	286 (54)
Hemoglobin, g/dL	13.0 (1.6)	12.9 (1.7)	12.7 (1.8)	11.8 (1.7)
LDL cholesterol, mg/dL	109.7 (33.2)	105.0 (33.6)	103.8 (35.7)	103.5 (39.0)
HDL cholesterol, mg/dL	51.7 (16.4)	49.0 (16.2)	46.2 (16.1)	45.3 (14.4)
C-reactive protein, mg/L, median	2.2 (0.9-5.8)	2.6 (1.2-5.8)	2.8 (1.1-6.9)	2.4 (1.0-6.0)
Fibroblast growth factor-23 (RU/mL), median	110.9 (77.1-170.7)	133.9 (91.6-209.4)	145.5 (98.1-214.5)	190.0 (125.7-328.0)
Serum phosphorus, mg/dL	3.6 (0.6)	3.6 (0.6)	3.7 (0.7)	4.0 (0.8)
Total parathyroid hormone (pg/mL), median	42.0 (30.7-65.4)	46.0 (32.0-75.8)	59.0 (36.4-91.7)	76.0 (46.0-129.1)
ACEi/ARB	526 (55)	366 (69)	382 (72)	396 (74)
Aspirin	243 (25)	206 (39)	197 (37)	228 (43)
Statins	357 (37)	271 (51)	260 (49)	302 (57)
Beta-blockers	278 (29)	225 (42)	239 (45)	271 (51)
Diuretics	376 (39)	280 (53)	330 (62)	390 (73)
Framingham 10 year CVD risk (%), median	7.3 (3.9-15.6)	15.6 (8.6-25.3)	21.5 (11.7-30.0)	25.3 (15.6-30.0)

Entries are mean (SD) for continuous variables and N (%) for categorical variables, except as noted.

hsTnT Tertiles are tertiles of detectable values.

**Supplemental Table 3: Baseline characteristics by quartile of growth differentiation factor 15 (GDF-15)**

	Quartile 1 GDF-15 ≤ 892 pg/mL	Quartile 2 GDF-15 892 - 1325 pg/mL	Quartile 3 GDF-15 1325 - 1988 pg/mL	Quartile 4 GDF-15 > 1988 pg/mL
N	640	640	639	641
Age, years	50.6 (11.7)	56.0 (11.7)	58.3 (10.9)	59.0 (10.2)
Women	332 (52)	309 (48)	306 (48)	300 (47)
Race and Ethnicity				
Non-Hispanic white	358 (56)	280 (44)	273 (43)	190 (30)
Non-Hispanic black	213 (33)	259 (40)	260 (41)	271 (42)
Hispanic	42 (7)	67 (10)	86 (13)	152 (24)
Other	27 (4)	34 (5)	20 (3)	28 (4)
Estimated glomerular filtration rate, mL/min per 1.73 m <sup>2</sup>	59.2 (13.6)	47.7 (11.9)	41.1 (12.3)	35.0 (12.2)
24-hour urine protein (g/day), median	0.1 (0.1-0.2)	0.1 (0.1-0.7)	0.2 (0.1-0.9)	0.6 (0.1-2.2)
24-hour urine sodium (mg/day), median	3482.4 (2511.8-4899.6)	3639.7 (2705.3-4787.5)	3502.4 (2488.8-4654.2)	3212.9 (2171.3-4304.0)
Diabetes mellitus	99 (15)	242 (38)	326 (51)	438 (68)
History of heart failure	7 (1)	20 (3)	27 (4)	49 (8)
History of atrial fibrillation	60 (9)	69 (11)	80 (13)	93 (15)
Systolic blood pressure, mmHg	119.2 (16.9)	125.0 (19.4)	128.9 (20.6)	136.1 (23.7)
Diastolic blood pressure, mmHg	73.9 (11.4)	72.9 (12.6)	71.7 (12.5)	71.7 (13.5)
Body mass index, kg/m <sup>2</sup>	30.8 (7.2)	32.2 (8.0)	32.6 (8.3)	32.2 (8.6)
Current smoker	37 (6)	54 (8)	95 (15)	117 (18)
Alcohol use	514 (80)	437 (68)	389 (61)	358 (56)
Hemoglobin, g/dL	13.6 (1.5)	13.0 (1.7)	12.4 (1.5)	11.7 (1.8)
LDL cholesterol, mg/dL	113.1 (32.7)	107.8 (34.5)	105.3 (36.8)	98.5 (34.9)
HDL cholesterol, mg/dL	50.5 (16.1)	48.5 (15.5)	48.1 (15.9)	47.7 (16.8)
C-reactive protein, mg/L, median	1.9 (0.8-5.0)	2.5 (1.1-5.5)	2.6 (1.1-6.7)	2.6 (1.0-7.1)
Fibroblast growth factor-23 (RU/mL), median	90.9 (67.2-124.2)	124.0 (89.8-175.3)	154.3 (111.1-234.9)	210.2 (138.0-353.5)
Serum phosphorus, mg/dL	3.5 (0.5)	3.6 (0.6)	3.8 (0.6)	4.0 (0.8)
Total parathyroid hormone (pg/mL), median	38.4 (29.0-55.0)	46.8 (32.7-72.4)	56.0 (36.2-90.2)	80.0 (45.9-136.6)
ACEi/ARB	329 (51)	449 (70)	449 (70)	443 (69)
Aspirin	163 (25)	227 (35)	245 (38)	239 (37)
Statins	196 (31)	303 (47)	329 (51)	362 (56)
Beta-blockers	176 (28)	244 (38)	279 (44)	314 (49)
Diuretics	215 (34)	327 (51)	394 (62)	440 (69)
Framingham 10 year CVD risk (%), median	7.3 (3.4-13.2)	13.2 (7.3-24.8)	18.5 (10.0-29.4)	21.6 (13.2-30.0)

Entries are mean (SD) for continuous variables and N (%) for categorical variables, except as noted.

**Supplemental Table 4: Baseline characteristics by quartile of soluble ST2 (sST2)**

	Quartile 1 sST2 ≤ 11 ng/mL	Quartile 2 sST2 11 - 14.9 ng/mL	Quartile 3 sST2 14.9 - 20.2 ng/mL	Quartile 4 sST2 > 20.2 ng/mL
N	640	638	642	640
Age, years	54.5 (12.1)	56.6 (10.8)	57.2 (11.4)	55.7 (11.9)
Women	412 (64)	338 (53)	279 (43)	218 (34)
Race and Ethnicity				
Non-Hispanic white	253 (40)	294 (46)	275 (43)	279 (44)
Non-Hispanic black	285 (45)	253 (40)	250 (39)	215 (34)
Hispanic	69 (11)	68 (11)	88 (14)	122 (19)
Other	33 (5)	23 (4)	29 (5)	24 (4)
Estimated glomerular filtration rate, mL/min per 1.73 m <sup>2</sup>	48.6 (15.9)	46.5 (15.1)	45.2 (15.3)	42.6 (14.6)
24-hour urine protein (g/day), median	0.1 (0.1-0.5)	0.1 (0.1-0.6)	0.2 (0.1-0.8)	0.4 (0.1-1.9)
24-hour urine sodium (mg/day), median	3410.6 (2428.1-4580.2)	3366.1 (2539.0-4552.0)	3615.1 (2538.0-4757.3)	3441.2 (2417.7-4722.6)
Diabetes mellitus	185 (29)	243 (38)	307 (48)	370 (58)
History of heart failure	19 (3)	23 (4)	31 (5)	30 (5)
History of atrial fibrillation	55 (9)	76 (12)	81 (13)	90 (14)
Systolic blood pressure, mmHg	123.3 (19.2)	126.0 (20.4)	129.0 (22.4)	130.8 (21.9)
Diastolic blood pressure, mmHg	73.1 (12.1)	72.3 (11.9)	72.6 (13.6)	72.3 (12.5)
Body mass index, kg/m <sup>2</sup>	31.3 (7.9)	32.6 (7.7)	32.5 (8.2)	31.4 (8.3)
Current smoker	83 (13)	78 (12)	72 (11)	70 (11)
Alcohol use	446 (70)	425 (67)	415 (65)	412 (64)
Hemoglobin, g/dL	12.8 (1.6)	12.8 (1.7)	12.7 (1.8)	12.3 (1.9)
LDL cholesterol, mg/dL	108.0 (34.3)	105.8 (32.6)	107.3 (37.2)	103.7 (36.2)
HDL cholesterol, mg/dL	49.5 (15.0)	48.6 (15.6)	47.9 (15.6)	48.7 (18.0)
C-reactive protein, mg/L, median	2.5 (1.0-6.2)	2.3 (1.0-5.8)	2.5 (1.0-6.5)	2.2 (0.9-5.9)
Fibroblast growth factor-23 (RU/mL), median	120.9 (83.0-196.6)	135.0 (91.2-201.4)	135.5 (91.8-219.7)	154.3 (99.9-246.9)
Serum phosphorus, mg/dL	3.6 (0.6)	3.7 (0.6)	3.7 (0.7)	3.8 (0.7)
Total parathyroid hormone (pg/mL), median	47.2 (32.0-75.4)	49.0 (33.0-80.5)	50.9 (33.0-84.0)	57.3 (36.0-97.2)
ACEi/ARB	367 (57)	415 (65)	441 (69)	447 (70)
Aspirin	186 (29)	235 (37)	222 (35)	231 (36)
Statins	255 (40)	296 (46)	315 (49)	324 (51)
Beta-blockers	213 (33)	248 (39)	270 (42)	282 (44)
Diuretics	298 (47)	329 (52)	366 (57)	383 (60)
Framingham 10 year CVD risk (%), median	10.0 (4.5-21.5)	13.7 (6.7-24.8)	15.9 (8.6-29.4)	18.4 (8.6-29.4)

Entries are mean (SD) for continuous variables and N (%) for categorical variables, except as noted.

**Supplemental Table 5: Number and incidence rate of atherosclerotic disease by biomarker categories**

Biomarker		MI		PVD		Stroke		Composite	
	N at risk	N events	IR (95% bootstrap CI)	N events	IR (95% bootstrap CI)	N events	IR (95% bootstrap CI)	N events	IR (95% bootstrap CI)
<b>Overall</b>	2560	163	8.6 (7.3, 10.0)	70	3.6 (2.8, 4.5)	70	3.6 (2.8, 4.5)	270	14.5 (12.9, 16.2)
<b>NT-proBNP pg/mL</b>									
<36.6	640	17	3.3 (1.7, 4.9)	10	2.0 (0.7, 3.2)	7	1.3 (0.4, 2.3)	34	6.7 (4.4, 9.0)
[36.6, 99.2)	640	28	5.7 (3.5, 7.8)	9	1.8 (0.6, 3.0)	15	3.0 (1.5, 4.5)	44	9.0 (6.3, 11.7)
[99.2, 256)	640	48	10.2 (7.4, 13.0)	14	2.9 (1.4, 4.4)	20	4.1 (2.3, 5.9)	74	16.1 (12.6, 19.5)
≥256	640	70	17.0 (12.9, 21.1)	37	8.7 (6.0, 11.4)	28	6.5 (4.1, 9.0)	118	29.6 (24.2, 34.9)
<b>hsTnT pg/mL</b>									
<10	964	25	3.2 (2.0, 4.5)	4	0.5 (0.0, 1.0)	13	1.7 (0.8, 2.6)	40	5.2 (3.6, 6.8)
[10, 15.2)	532	21	5.1 (2.9, 7.3)	7	1.7 (0.5, 2.9)	16	3.9 (2.0, 5.8)	42	10.4 (7.3, 13.5)
[15.2, 25.4)	532	52	13.7 (10.1, 17.3)	22	5.6 (3.3, 8.0)	16	4.0 (2.1, 6.0)	81	21.9 (17.3, 26.5)
≥25.4	532	65	19.7 (14.8, 24.6)	37	10.8 (7.4, 14.3)	25	7.2 (4.4, 10.0)	107	33.7 (27.3, 40.1)
<b>GDF-15 pg/mL</b>									
<904	640	13	2.5 (1.2, 3.9)	3	0.6 (-0.1, 1.2)	4	0.8 (0.0, 1.5)	19	3.7 (2.0, 5.4)
[904, 1330)	640	32	6.4 (4.2, 8.7)	8	1.6 (0.5, 2.7)	19	3.7 (2.1, 5.4)	55	11.3 (8.3, 14.3)
[1330, 2000)	639	50	10.7 (7.7, 13.8)	15	3.1 (1.5, 4.7)	20	4.1 (2.3, 6.0)	74	16.1 (12.4, 19.8)
≥2000	641	68	16.6 (12.7, 20.6)	44	10.5 (7.5, 13.6)	27	6.4 (4.0, 8.9)	122	31.0 (25.6, 36.4)
<b>sST2 ng/mL</b>									
<11	640	24	4.8 (2.9, 6.7)	8	1.6 (0.5, 2.7)	11	2.2 (0.9, 3.4)	41	8.3 (5.8, 10.8)
[11, 14.9)	638	28	5.8 (3.7, 8.0)	9	1.9 (0.7, 3.1)	19	3.9 (2.2, 5.7)	52	11.0 (8.0, 14.0)
[14.9, 20.1)	642	50	10.6 (7.6, 13.6)	24	5.0 (3.0, 7.1)	18	3.7 (2.0, 5.4)	83	18.1 (14.2, 22)
≥20.1	640	61	13.9 (10.4, 17.3)	29	6.4 (4.1, 8.7)	22	4.9 (2.9, 6.8)	94	21.9 (17.6, 26.3)

Categories are quartiles for NT-proBNP, GDF-15, and sST2. For hs-TnT, category 1 includes all values of hs-TnT that were less than 10. Categories 2-4 are the tertiles of the remaining values.

**Supplemental Table 6: Associations of categorical biomarkers with incident atherosclerotic disease**

	MI HR (95% CI)	PVD HR (95% CI)	Stroke HR (95% CI)	Composite HR (95% CI)
<b>NT-proBNP pg/mL</b>				
<36.6	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)
[36.6, 99.2)	1.36 (0.73, 2.51)	0.57 (0.23, 1.44)	1.95 (0.78, 4.87)	1.04 (0.66, 1.65)
[99.2, 256)	2.06 (1.14, 3.71)	0.65 (0.27, 1.57)	2.33 (0.93, 5.83)	1.55 (1.00, 2.40)
≥256	2.42 (1.29, 4.55)	1.14 (0.47, 2.77)	3.00 (1.14, 7.88)	1.97 (1.24, 3.14)
<b>hsTnT pg/mL</b>				
<10	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)
[10, 15.2)	1.18 (0.64, 2.15)	1.94 (0.55, 6.81)	1.62 (0.75, 3.50)	1.38 (0.88, 2.17)
[15.2, 25.4)	2.82 (1.65, 4.81)	4.84 (1.55, 15.14)	1.43 (0.63, 3.23)	2.46 (1.61, 3.77)
≥25.4	3.06 (1.68, 5.57)	5.13 (1.54, 17.01)	1.92 (0.79, 4.66)	2.68 (1.67, 4.28)
<b>GDF-15 pg/mL</b>				
<904	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)
[904, 1330)	1.68 (0.85, 3.30)	1.42 (0.36, 5.56)	3.46 (1.12, 10.63)	2.01 (1.16, 3.46)
[1330, 2000)	2.21 (1.11, 4.39)	1.86 (0.49, 7.09)	3.15 (0.96, 10.30)	2.24 (1.28, 3.93)
≥2000	2.65 (1.25, 5.61)	4.17 (1.07, 16.33)	3.95 (1.12, 13.98)	3.38 (1.86, 6.14)
<b>sST-2 ng/mL</b>				
<11	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)	1.0 (Ref.)
[11, 14.9)	1.02 (0.59, 1.76)	0.88 (0.34, 2.29)	1.59 (0.75, 3.36)	1.09 (0.72, 1.65)
[14.9, 20.1)	1.59 (0.96, 2.63)	1.77 (0.78, 4.01)	1.21 (0.56, 2.63)	1.47 (1.00, 2.16)
≥20.1	1.85 (1.11, 3.06)	1.62 (0.71, 3.67)	1.43 (0.66, 3.11)	1.52 (1.03, 2.24)

Adjusted for age, sex, self-reported race and ethnicity, eGFR, log-transformed 24-hour urine protein, DM, heart failure, SBP, DBP, BMI, HDL, LDL, tobacco use, hemoglobin, beta blocker use, diuretic use, and Framingham risk score

**Supplemental Table 7: Further adjusting for cardioprotective medications, high-sensitivity C-reactive protein, and markers of bone mineral metabolism**

	<b>Composite HR (95% CI)</b>
<b>NT-proBNP (per SD increase in ln(NT-proBNP))</b>	
Model 2	1.51 (1.27, 1.80)
Model 2 + cardioprotective medications	1.56 (1.30, 1.86)
Model 2 + hsCRP	1.48 (1.24, 1.77)
Model 2 + bone mineral metabolism	1.50 (1.26, 1.79)
<b>hsTnT (per SD increase in ln(hsTnT))</b>	
Model 2	1.61 (1.38, 1.89)
Model 2 + cardioprotective medications	1.62 (1.38, 1.89)
Model 2 + hsCRP	1.61 (1.37, 1.88)
Model 2 + bone mineral metabolism	1.61 (1.37, 1.89)
<b>GDF-15 (per SD increase in ln(GDF-15))</b>	
Model 2	1.44 (1.19, 1.73)
Model 2 + cardioprotective medications	1.44 (1.20, 1.74)
Model 2 + hsCRP	1.42 (1.18, 1.71)
Model 2 + bone mineral metabolism	1.43 (1.18, 1.73)
<b>sST-2 (per SD increase in ln(sST2))</b>	
Model 2	1.19 (1.04, 1.36)
Model 2 + cardioprotective medications	1.19 (1.04, 1.36)
Model 2 + hsCRP	1.18 (1.03, 1.35)
Model 2 + bone mineral metabolism	1.18 (1.03, 1.36)

Hazard ratios are per standard deviation of the log-transformed biomarker.

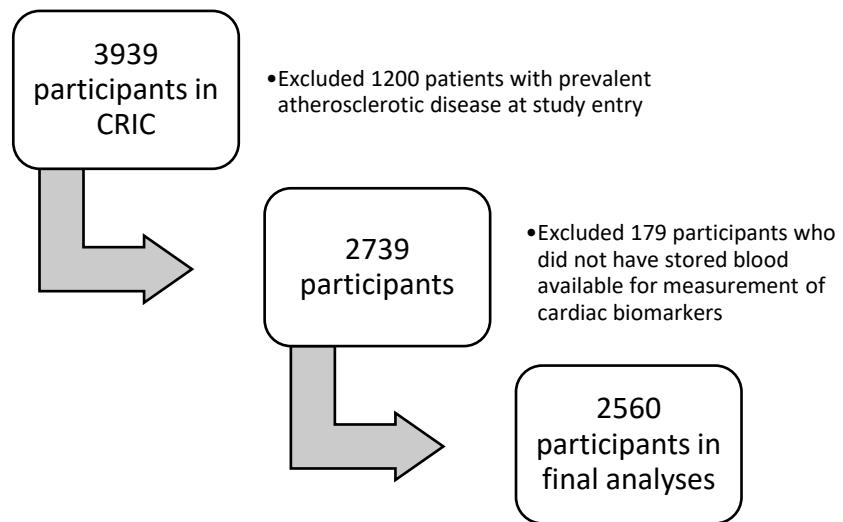
Model 2: Adjusted for age, sex, self-reported race and ethnicity, eGFR, log-transformed 24-hour urine protein, DM, heart failure, SBP, DBP, BMI, HDL, LDL, tobacco use, hemoglobin, beta blocker use, diuretic use, and Framingham risk score

Cardioprotective medications: aspirin, statins, ACE inhibitors, and ARBs

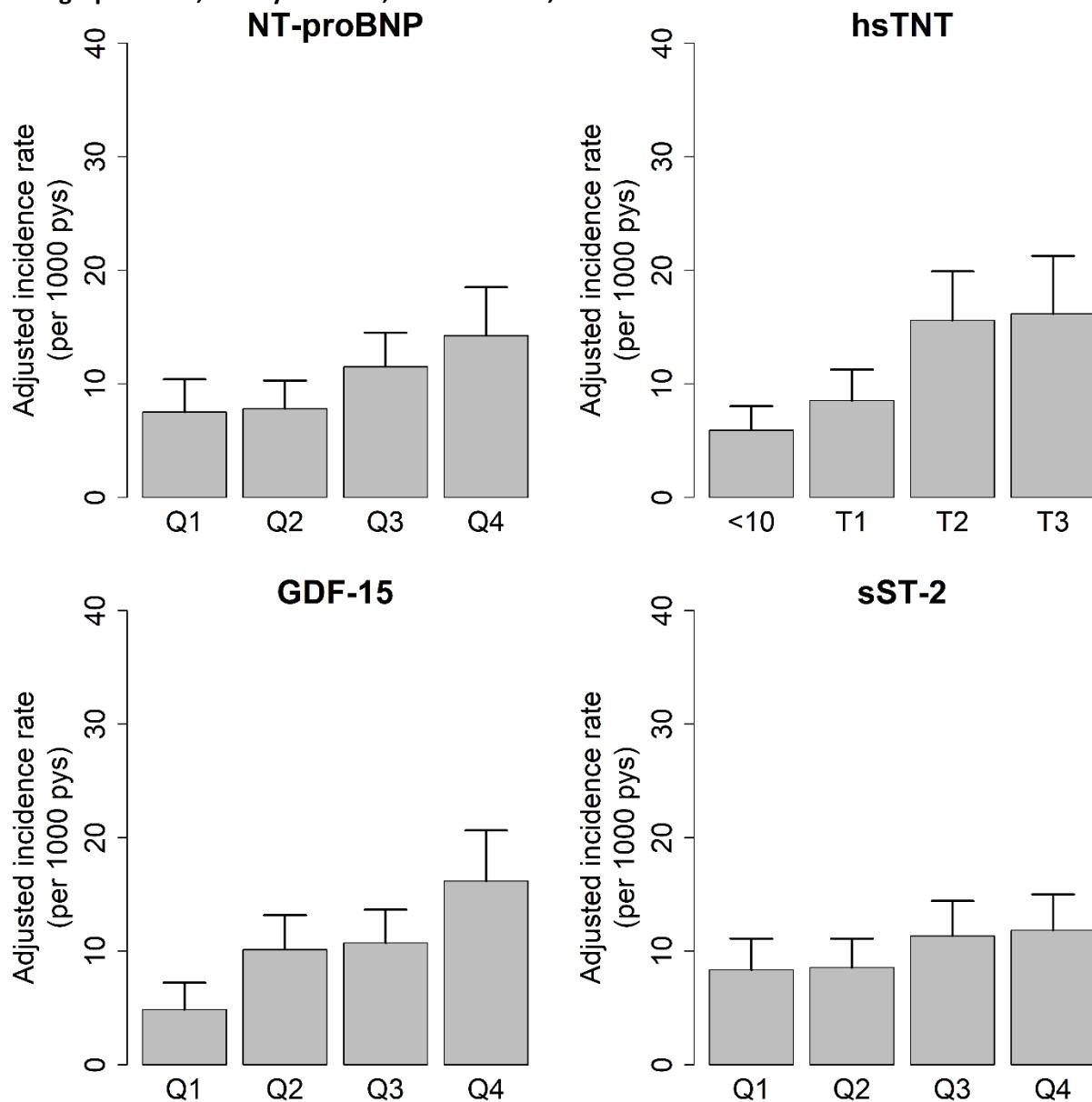
HsCRP: High-sensitivity C-reactive protein

Bone mineral metabolism markers: calcium, phosphate, total parathyroid hormone, and fibroblast growth factor-23

**Supplemental Figure 1: CONSORT flow diagram for study size**



**Supplemental Figure 2: Incidence rates of atherosclerotic events by biomarker category, adjusted for demographic data, kidney function, comorbidities, and medication use**



Adjusted for age, sex, self-reported race and ethnicity, eGFR, natural-log adjusted proteinuria, diabetes, heart failure, systolic and diastolic blood pressure, BMI, high- and low-density lipoprotein, smoking status, hemoglobin, Framingham risk score, and use of beta blockers or diuretics

NT-proBNP: N-terminal pro B-type natriuretic peptide

HsTnT: High-sensitivity troponin T

GDF-15: Growth differentiation factor 15

SST2: Soluble ST2