

DATA SUPPLEMENT

Title: Association of Albuminuria Levels with the Prescription of Renin-Angiotensin System Blockade

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Running title: Albuminuria level and RAAS blockade prescription

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Table S1. International Classification of Disease, 9th and 10th Editions, Clinical Modification (ICD-9-CM, ICD-10-CM) Used to Define Disease Conditions

Disease condition	ICD-9-CM codes	ICD-10-CM codes
Diabetes	250.x	E10.x, E11.x, E13.x
Congestive heart failure	428.x	I50.x
Myocardial infarction	410.00, 410.0, 410.01, 410.02, 410.1, 410.10, 410.11, 410.12, 410.20, 410.2, 410.21, 410.22, 410.30, 410.31, 410.32, 410.40, 410.4, 410.41, 410.42, 410.50, 410.51, 410.52, 410.60, 410.61, 410.62, 410.7, 410.70, 410.71, 410.72, 410.8, 410.80, 410.81, 410.82, 410.9, 410.90, 410.91, 410.92, 411.0, 412, 429.7, 429.71, 429.79	I24.1, I25.2, I51.0, I21.x- I23.x
Hypertension	401.x-405.x	I10.x-I16.x

Table S2. Characteristics of the patient cohort who received urine PCR measurement

Patient characteristics	Overall	Baseline use of ACE-I/ARB		
		Yes	No	
Total number, N	20104	10437	9667	
Urine PCR, median (IQR), mg/g	110 (68-260)	116 (70-290)	100 (60-220)	
Age, mean (SD), years	64.2 (16.5)	67.4 (13.9)	60.8 (18.3)	
Systolic blood pressure, mean (SD), mmHg	130.8 (17.9)	132.9 (18.3)	128.4 (17.2)	
Potassium, mean (SD), mEq/L	4.3 (0.4)	4.3 (0.4)	4.2 (0.4)	
eGFR, mean (SD), mL/min/1.73m²	61.1 (28.0)	57.2 (24.9)	65.2 (30.5)	
Female sex, N (%)	11305 (56.2)	5473 (52.4)	5832 (60.3)	
Black race, N (%)	475 (2.4)	237 (2.3)	238 (2.5)	
Diabetes, N (%)	6710 (33.4)	4740 (45.4)	1970 (20.4)	
Congestive heart failure, N (%)	2986 (14.9)	1860 (17.8)	1126 (11.7)	
Hypertension, N (%)	15940 (79.3)	10008 (95.9)	5932 (61.4)	
Myocardial infarction, N (%)	1874 (9.3)	1247 (12.0)	627 (6.5)	
Thiazide diuretics, N (%)	4966 (24.7)	3441 (33.0)	1525 (15.8)	
Calcium channel blockers, N (%)	5254 (26.1)	3340 (32.0)	1914 (19.8)	
Beta blockers, N (%)	9246 (46.0)	5645 (54.1)	3601 (37.3)	
Statin, N (%)	10128 (50.4)	6603 (63.3)	3525 (36.5)	
Calendar year, N (%)				
	2004-2008	2583 (12.9)	1232 (11.8)	1351 (14.0)
	2009-2013	7493 (37.3)	3798 (36.4)	3695 (38.2)
	2014-2018	10028 (49.9)	5407 (51.8)	4621 (47.8)

Abbreviations: PCR, protein-to-creatinine ratio; IQR: interquartile range; SD, standard deviation; ACE-I/ARB: angiotensin-converting enzyme inhibitor or angiotensin II receptor blocker; eGFR: estimated glomerular filtration rate

Table S3. Characteristics of the patient cohort who received urine dipstick measurement

Patient characteristics	Overall	Baseline use of ACE-I/ARB	
		Yes	No
Total number, N	141914	39664	102250
Urine dipstick measure, N (%)			
"Negative"	118951 (83.8)	31960 (80.6)	86991 (85.1)
"+"	19854 (14.0)	6489 (16.4)	13365 (13.1)
"++ or above"	3109 (2.2)	1215 (3.1)	1894 (1.9)
Age, mean (SD), years	54.2 (17.7)	63.1 (13.9)	50.8 (17.8)
Systolic blood pressure, mean (SD), mmHg	128 (17.1)	133 (17.8)	126 (16.4)
Potassium, mean (SD), mEq/L	4.2 (0.4)	4.3 (0.4)	4.2 (0.4)
eGFR, mean (SD), mL/min/1.73m²	88 (23.9)	77 (22.9)	92 (23.1)
Female sex, N (%)	78052 (55.0)	19322 (48.7)	58730 (57.4)
Black race, N (%)	4850 (3.4)	1319 (3.3)	3531 (3.5)
Diabetes, N (%)	21701 (15.3)	13161 (33.2)	8540 (8.4)
Congestive heart failure, N (%)	6059 (4.3)	3493 (8.8)	2566 (2.5)
Hypertension, N (%)	66597 (46.9)	36758 (92.7)	29839 (29.2)
Myocardial infarction, N (%)	4951 (3.5)	2876 (7.3)	2075 (2.0)
Thiazide diuretics, N (%)	21544 (15.2)	13582 (34.2)	7962 (7.8)
Calcium channel blockers, N (%)	15446 (10.9)	8900 (22.4)	6546 (6.4)
Beta blockers, N (%)	30294 (21.4)	14998 (37.8)	15296 (15.0)
Statin, N (%)	38297 (27.0)	20143 (50.8)	18154 (17.8)
Calendar year, N (%)			
2004-2008	35432 (25.0)	7437 (18.8)	27995 (27.4)
2009-2013	42547 (30.0)	12094 (30.5)	30453 (29.8)
2014-2018	63935 (45.1)	20133 (50.8)	43802 (42.8)

Abbreviations: IQR: interquartile range; SD, standard deviation; ACE-I/ARB: angiotensin-converting enzyme inhibitor or angiotensin II receptor blocker; eGFR: estimated glomerular filtration rate

Figure S1. Derivation of study cohort

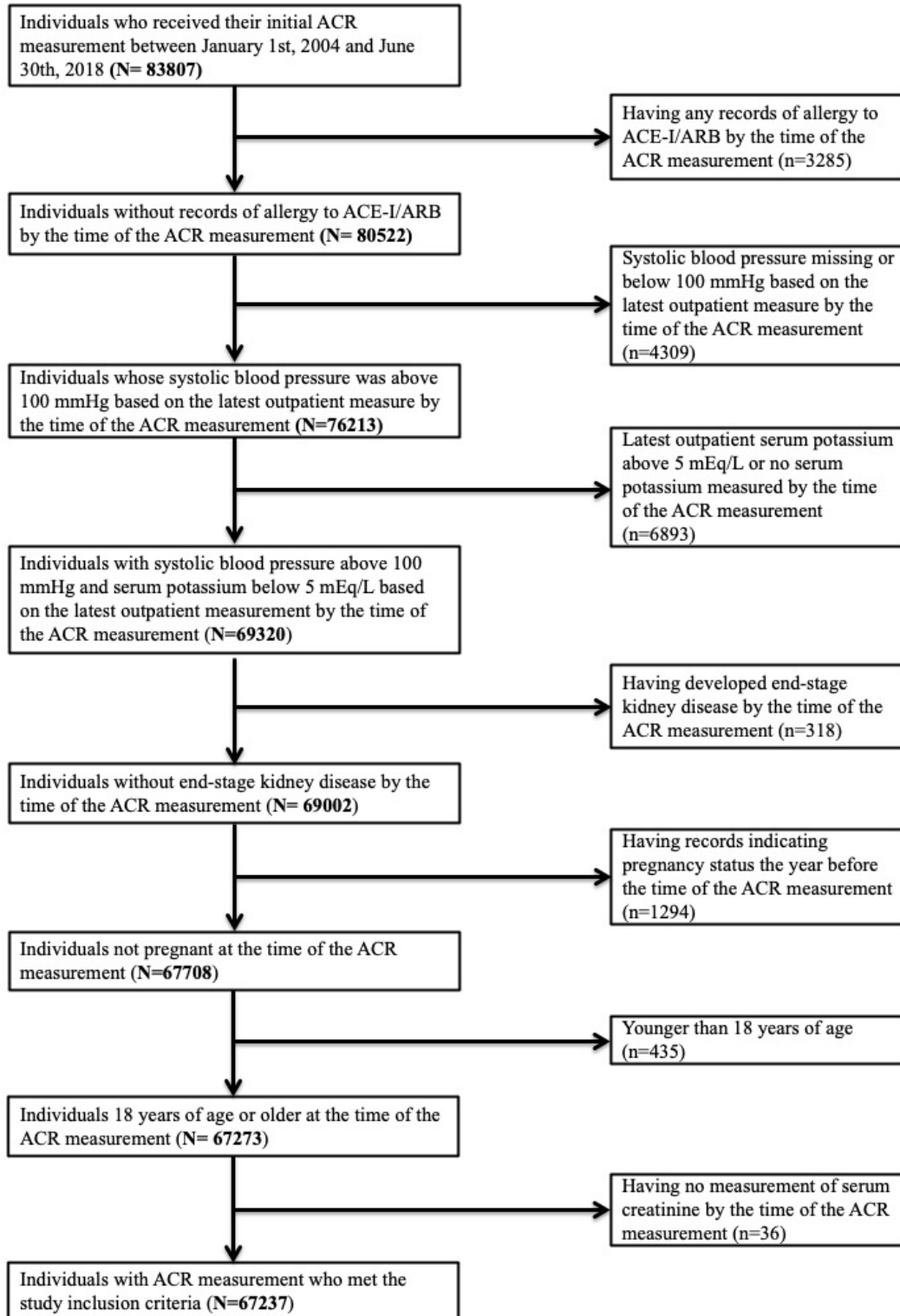
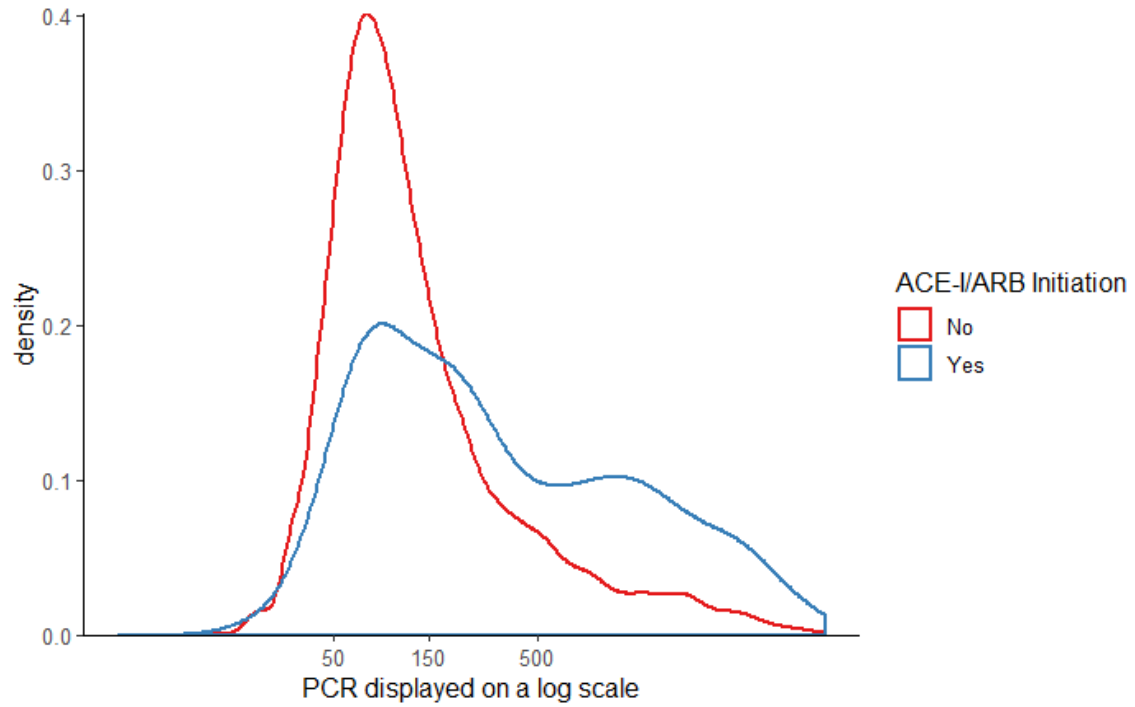
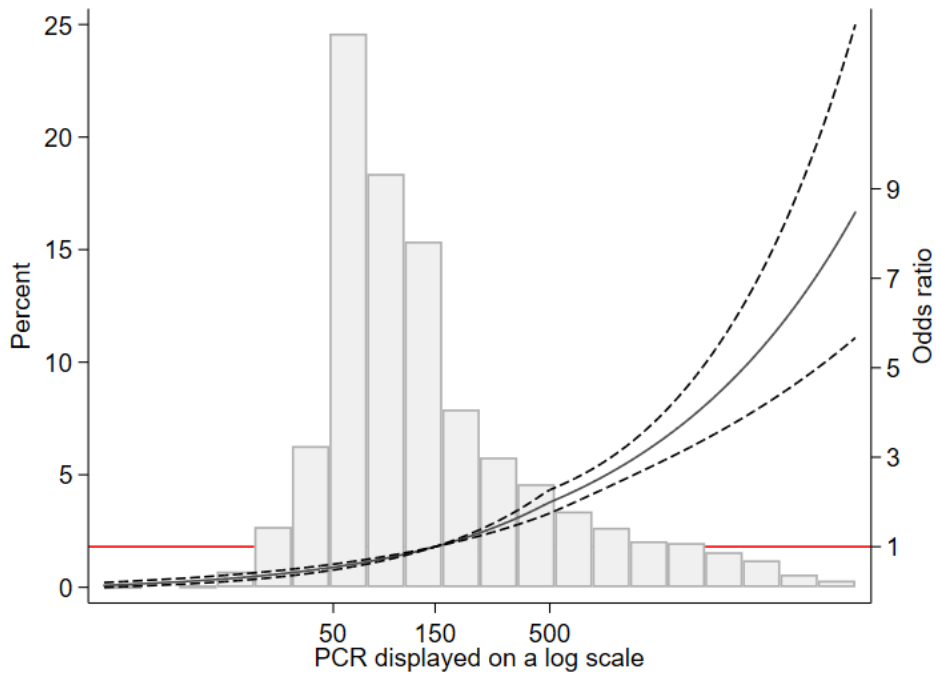


Figure S2. Distribution of PCR stratified by ACE-I/ARB initiation within six months of the PCR test among individuals not on ACE-I/ARB at the time of the test (N=9,667), displayed on a log scale



Abbreviations: PCR, protein-to-creatinine ratio; ACE-I/ARB: angiotensin-converting enzyme inhibitor or angiotensin II receptor blocker

Figure S3. Association between PCR and initiation of ACE-I/ARB among individuals not on ACE-I/ARB at the time of the PCR test (N=9,667)



*Reference point at PCR 150 mg/g; adjusted for baseline age, sex, race/ethnicity, calendar year, systolic blood pressure, serum potassium, estimated glomerular filtration rate, diabetes, congestive heart failure, myocardial infarction, hypertension, use of statin, thiazide, calcium channel blocker, and beta blocker.

Abbreviations: PCR, protein-to-creatinine ratio; ACE-I/ARB: angiotensin-converting enzyme inhibitor or angiotensin II receptor blocker