

Table S1. Demographic, Clinical, and Procedural Characteristics of the PRESERVE Trial and Sub-Study

	Sub-Study Participants (n=922)	Overall PRESERVE Participants (n=4993)
Demographic		
Age-years, mean \pm sd	70 \pm 8	70 \pm 8
Male sex, no. (%)	896 (97%)	4671 (94%)
Race/Ethnicity, no. (%)		
White	718 (78%)	3893 (78%)
Black	144 (16%)	570 (11%)
Other	26 (3%)	349 (7%)
Hispanic	32 (3%)	181 (4%)
Clinical		
Weight –kg, mean \pm sd	100 \pm 22	98 \pm 22
Median baseline serum creatinine (IQR) -mg/dL	1.5 (1.3-1.7)	1.5 (1.3-1.8)
UACR Categories, no. (%)		
<30	371 (43%)	1723/4515(38%)
30-300	286 (33%)	1637/4515 (36%)
>300	205 (24%)	1155/4515 (26%)
Median baseline eGFR (IQR), mL/min	48 (40-57)	50 (41-59)
Diabetes, no. (%)	760 (82%)	4041 (81%)
Procedural		
Coronary Procedure, no. (%)	812 (88%)	4466/4937 (90%)
Percutaneous Intervention, no. (%)	255 (28%)	1406/4837 (29%)
Left ventricular end diastolic pressure - mmHg, mean \pm sd	19 \pm 8	18 \pm 8
Trial arm, no. (%)		
Saline + Placebo	211 (23%)	1244 (25%)
Saline + Acetylcysteine	236 (26%)	1238 (25%)
Sodium Bicarbonate + Placebo	242 (26%)	1254 (25%)
Sodium Bicarbonate + Acetylcysteine	233 (25%)	1257 (25%)

Table S2. Creatinine Corrected Urine Pre-Angiography Biomarkers by MAKE-D and CA-AKI Status

	Median (IQR) Creatinine Corrected Urine Biomarkers							
	MAKE-D	No MAKE-D	Unadjusted P-value	Adjusted* P-value	CA-AKI	No CA-AKI	Unadjusted P-value	Adjusted* P-value
KIM-1	18.11 (12.39, 41.31)	16.14 (8.55, 26.29)	0.009	0.1	16.14 (10.26, 28.05)	16.18 (8.63, 26.62)	0.48	0.4
NGAL	0.46 (0.16, 1.45)	0.23 (0.12, 0.49)	0.008	0.2	0.27 (0.13, 0.43)	0.24 (0.12, 0.51)	0.91	0.6
IL-18	0.37 (0.23, 0.70)	0.23 (0.14, 0.36)	<0.001	0.002	0.24 (0.13, 0.38)	0.24 (0.15, 0.37)	0.70	0.5
MCP-1	3.30 (2.00, 5.85)	2.18 (1.47, 3.23)	<0.001	0.03	2.21 (1.63, 3.26)	2.20 (1.46, 3.40)	0.74	0.9
UMOD	28.73 (14.09, 38.97)	25.43 (15.21, 49.22)	0.94	0.9	31.62 (16.34, 56.82)	25.02 (15.12, 48.15)	0.08	0.1
YKL-40	9.50 (2.95, 44.48)	4.12 (1.42, 11.23)	<0.001	0.008	4.33 (1.82, 16.80)	4.19 (1.51, 11.94)	0.71	0.9

*Adjusted for Urine Albumin-to-Creatinine Ratio and baseline eGFR

Table S3. Areas Under the Curve for Pre-Angiography Plasma and Urine Biomarkers for MAKE-D and CA-AKI

Biomarker	MAKE-D AUC (95% CI)	CA-AKI AUC (95% CI)
Plasma IL18	0.53 (0.44, 0.61)	0.56 (0.49, 0.63)
Plasma KIM1	0.65 (0.58, 0.72)	0.61 (0.55, 0.67)
Plasma MCP1	0.50 (0.42, 0.58)	0.47 (0.40, 0.55)
Plasma NGAL	0.62 (0.55, 0.70)	0.49 (0.42, 0.57)
Plasma UMOD	0.39 (0.32, 0.47)	0.46 (0.39, 0.53)
Plasma YKL40	0.66 (0.59, 0.73)	0.53 (0.46, 0.60)
Urine IL18	0.62 (0.54, 0.71)	0.49 (0.42, 0.57)
Urine KIM1	0.58 (0.50, 0.66)	0.50 (0.43, 0.56)
Urine MCP1	0.61 (0.53, 0.69)	0.46 (0.40, 0.53)
Urine NGAL	0.61 (0.53, 0.69)	0.47 (0.40, 0.54)
Urine UMOD	0.47 (0.39, 0.55)	0.54 (0.48, 0.61)
Urine YKL40	0.65 (0.56, 0.73)	0.50 (0.43, 0.57)

Table S4. BioPET Analysis of Pre-Angiography Plasma KIM-1

Percent of Patients Screened from Trial	Event Rate Among Biomarker-Positive Patients	Sample Size	Number Needed to Screen	Total Screened	Total Costs for Screening and Patients in Trial (in millions)*	Percent Reduction in Total Cost
0%	0.09	7376	1	7376	73.76	0%
5%	0.09	7121	1.1	7495	74.95	-1.6%
10%	0.09	6871	1.1	7635	72.53	1.7%
15%	0.1	6640	1.2	7812	70.31	4.7%
20%	0.1	6422	1.2	8027	68.23	7.5%
25%	0.1	6217	1.3	8289	66.32	10.1%
30%	0.11	5998	1.4	8568	64.26	12.9%
35%	0.11	5795	1.5	8916	62.41	15.4%
40%	0.11	5593	1.7	9322	60.59	17.9%
45%	0.12	5390	1.8	9799	58.80	20.3%
50%	0.12	5191	2	10382	57.10	22.6%
55%	0.12	4986	2.2	11079	55.40	24.9%
60%	0.13	4752	2.5	11879	53.46	27.5%
65%	0.14	4529	2.9	12939	51.75	29.8%
70%	0.14	4300	3.3	14333	50.17	32%
75%	0.15	4041	4	16165	48.49	34.3%
80%	0.16	3777	5	18885	47.21	36%
85%	0.17	3476	6.7	23176	46.35	37.2%
90%	0.19	3139	10	31390	47.08	36.2%
95%	0.21	2628	20	52569	52.57	28.7%

* Total costs calculated based on an estimated screening cost of \$500 and a retention cost for each patient of \$10,000

Table S5. BioPET Analysis of Pre-Angiography Plasma YKL-40

Percent of Patients Screened from Trial	Event Rate Among Biomarker-Positive Patients	Sample Size	Number Needed to Screen	Total Screened	Total Costs for Screening and Patients in Trial (in millions)*	Percent Reduction in Total Cost
0%	0.09	7376	1	7376	73.76	0%
5%	0.09	7070	1.1	7442	74.42	-0.9%
10%	0.09	6805	1.1	7561	71.83	2.6%
15%	0.1	6557	1.2	7714	69.43	5.9%
20%	0.1	6325	1.2	7906	67.20	8.9%
25%	0.1	6091	1.3	8121	64.97	11.9%
30%	0.11	5860	1.4	8371	62.78	14.9%
35%	0.11	5647	1.5	8687	60.81	17.6%
40%	0.12	5425	1.7	9042	58.78	20.3%
45%	0.12	5202	1.8	9458	56.75	23.1%
50%	0.12	4992	2	9984	54.91	25.6%
55%	0.13	4774	2.2	10609	53.04	28.1%
60%	0.13	4565	2.5	11413	51.36	30.4%
65%	0.14	4343	2.9	12407	49.63	32.7%
70%	0.15	4103	3.3	13676	47.87	35.1%
75%	0.16	3865	4	15461	46.38	37.1%
80%	0.16	3611	5	18056	45.14	38.8%
85%	0.18	3273	6.7	21822	43.64	40.8%
90%	0.2	2906	10	29061	43.59	40.9%
95%	0.23	2442	20	48843	48.84	33.8%

* Total costs calculated based on an estimated screening cost of \$500 and a retention cost for each patient of \$10,000