

The Supplemental data

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Supplement to “Anatomical or Functional Evaluation as an Initial Test for Stable Coronary Artery Disease”

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Supplemental Table 1. Characteristics of patients with stable coronary artery disease undergoing an initial diagnostic evaluation with either invasive coronary angiography or myocardial perfusion imaging

Characteristics	Crude				IPTW			
	CAG (n = 117,134)	MPI (n = 19,932)	SD mean (%)	P value	CAG (n = 117,134)	MPI (n = 19,932)	SD mean (%)	P value
Age, years	60.6 (12.1)	61.7 (12.2)	9.53	< 0.001	60.7 (12.1)	60.9 (12.6)	1.22	0.131
Gender male, no. (%)	63,912 (54.6)	10,422 (52.3)	4.56	< 0.001	63,486 (54.2)	10,665 (53.5)	1.39	0.069
Enrolled number, no. (%)				< 0.001				0.974
July 2009 to June 2010	23,985 (20.5)	6,389 (32.1)	26.54		25,938 (22.1)	4,403 (22.1)	0.13	
July 2010 to June 2011	28,193 (24.1)	5,513 (27.7)	8.21		28,818 (24.6)	4,906 (24.6)	0.03	
July 2011 to June 2012	31,583 (27.0)	4,240 (21.3)	13.33		30,623 (26.1)	5,239 (26.3)	0.32	
July 2012 to June 2013	33,373 (28.5)	3,790 (19.0)	22.41		31,755 (27.1)	5,384 (27.0)	0.22	
Comorbid conditions, no. (%)								
Diabetes	23,380 (20.0)	4,864 (24.4)	10.71	< 0.001	24,176 (20.6)	4,211 (21.1)	1.20	0.115
Diabetes with chronic complications	11,520 (9.8)	2,115 (10.6)	2.56	0.001	11,695 (10.0)	2,116 (10.6)	2.08	0.006
Hyperlipidemia	33,591 (28.7)	6,995 (35.1)	13.80	< 0.001	34,737 (29.7)	6,050 (30.4)	1.52	0.047
Hypertension	52,629 (44.9)	10,184 (51.1)	12.36	< 0.001	53,747 (45.9)	9,346 (46.9)	2.01	0.009
Congestive heart failure	6,844 (5.8)	830 (4.2)	7.71	< 0.001	6,573 (5.6)	1,233 (6.2)	2.44	0.001
Arrhythmia	7,686 (6.6)	1,492 (7.5)	3.62	< 0.001	7,870 (6.7)	1,395 (7.0)	1.11	0.144
Valvular disease	1,622 (1.4)	269 (1.4)	0.30	0.694	1,622 (1.4)	309 (1.6)	1.38	0.067
Peripheral vascular disease	13,869 (11.8)	2,345 (11.8)	0.23	0.761	13,881 (11.9)	2,473 (12.4)	1.71	0.025
Cerebrovascular disease	14,026 (12.0)	2,522 (12.7)	2.07	0.007	14,184 (12.1)	2,569 (12.9)	2.36	0.002
Chronic pulmonary disease	25,327 (21.6)	4,076 (20.5)	2.88	< 0.001	25,154 (21.5)	4,376 (22.0)	1.16	0.129
Moderate to severe liver disease	416 (0.4)	179 (0.9)	6.88	< 0.001	517 (0.4)	92 (0.5)	0.30	0.661
Renal disease	3,107 (2.7)	991 (5.0)	12.13	< 0.001	3,548 (3.0)	644 (3.2)	1.16	0.126
Cancer	6,246 (5.3)	2,993 (15.0)	32.45	< 0.001	7,902 (6.8)	1,340 (6.7)	0.09	0.897
Rheumatic disease	3,533 (3.0)	817 (4.1)	5.85	< 0.001	3,728 (3.2)	664 (3.3)	0.84	0.263
Charlson comorbidity index	1.5 (1.8)	2.0 (2.2)	23.57	< 0.001	1.6 (1.9)	1.6 (1.9)	2.85	< 0.001

Data are expressed as n (%) and mean \pm SD.

CAD = coronary artery disease; CAG = coronary angiography; IPTW = inverse probability of treatment weighting; MPI = myocardial perfusion imaging.

Supplemental Table 2. Site-adjusted characteristics of patients with stable coronary artery disease undergoing an initial diagnostic evaluation with either invasive coronary angiography or myocardial perfusion imaging

Characteristics	Crude				IPTW			
	CAG (n = 60,525)	MPI (n = 19,932)	SD mean (%)	P value	CAG (n = 60,525)	MPI (n = 19,932)	SD mean (%)	P value
Age, years	60.7 (12.3)	61.7 (12.2)	8.48	< 0.001	61.0 (12.2)	61.9 (12.5)	1.04	0.206
Gender male, no. (%)	34,110 (56.4)	10,422 (52.3)	8.18	< 0.001	33,448 (55.3)	10,932 (54.8)	0.84	0.302
Enrolled number, no. (%)				< 0.001				0.976
July 2009 to June 2010	12,645 (20.9)	6,389 (32.1)	25.50		14,299 (23.6)	4,705 (23.6)	0.05	
July 2010 to June 2011	14,942 (24.7)	5,513 (27.7)	6.76		15,394 (25.4)	5,062 (25.4)	0.08	
July 2011 to June 2012	16,335 (27.0)	4,240 (21.3)	13.39		15,495 (25.6)	5,134 (25.8)	0.36	
July 2012 to June 2013	16,603 (27.4)	3,790 (19.0)	20.03		15,337 (25.3)	5,031 (25.2)	0.23	
Comorbid conditions, no. (%)								
Diabetes	12,731 (21.0)	4,864 (24.4)	8.05	< 0.001	13,271 (21.9)	4,425 (22.2)	0.66	0.418
Diabetes with chronic complications	6,420 (10.6)	2,115 (10.6)	0.01	0.988	6,470 (10.7)	2,227 (11.2)	1.54	0.058
Hyperlipidemia	18,145 (30.0)	6,995 (35.1)	10.93	< 0.001	18,990 (31.4)	6,359 (31.9)	1.14	0.149
Hypertension	28,007 (46.3)	10,184 (51.1)	9.66	< 0.001	28,809 (47.6)	9,638 (48.4)	1.51	0.064
Congestive heart failure	3,401 (5.6)	830 (4.2)	6.75	< 0.001	3,201 (5.3)	1,118 (5.6)	1.42	0.081
Arrhythmia	4,112 (6.8)	1,492 (7.5)	2.69	0.001	4,247 (7.0)	1,430 (7.2)	0.62	0.447
Valvular disease	865 (1.4)	269 (1.4)	0.68	0.409	861 (1.4)	307 (1.5)	0.98	0.227
Peripheral vascular disease	7,191 (11.9)	2,345 (11.8)	0.36	0.660	7,211 (11.9)	2,456 (12.3)	1.24	0.126
Cerebrovascular disease	7,306 (12.1)	2,522 (12.7)	1.77	0.030	7,445 (12.3)	2,550 (12.8)	1.48	0.068
Chronic pulmonary disease	12,671 (20.9)	4,076 (20.5)	1.20	0.143	12,635 (20.9)	4,222 (21.2)	0.75	0.357
Moderate to severe liver disease	212 (0.4)	179 (0.9)	6.96	< 0.001	300 (0.5)	99 (0.5)	0.01	0.986
Renal disease	1,859 (3.1)	991 (5.0)	9.68	< 0.001	2,193 (3.6)	746 (3.7)	0.63	0.436
Cancer	3,631 (6.0)	2,993 (15.0)	29.73	< 0.001	4,978 (8.2)	1,635 (8.2)	0.07	0.928
Rheumatic disease	1,914 (3.2)	817 (4.1)	5.01	< 0.001	2,067 (3.4)	702 (3.5)	0.59	0.468
Charlson comorbidity index	1.6 (1.9)	2.0 (2.2)	21.21	< 0.001	1.7 (2.0)	1.7 (1.9)	1.81	0.026

Data are expressed as n (%) and mean \pm SD.

CAD = coronary artery disease; CAG = coronary angiography; IPTW = inverse probability of treatment weighting; MPI = myocardial perfusion imaging.

Supplemental Table 3. Site-adjusted clinical outcomes in the crude and adjusted with inverse probability treatment weighted methods in patients undergoing invasive coronary angiography or myocardial perfusion imaging

Crude clinical outcomes	Incidence rate*		CAG compared with MPI	
	MPI (95% CI)	CAG (95% CI)	Crude Hazard ratio (95% CI)	P value
All-cause death	15.28 (14.25–16.30)	15.36 (14.73–16.00)	0.95 (0.88–1.03)	0.188
Myocardial infarction	2.35 (1.96–2.75)	4.09 (3.77–4.42)	1.62 (1.35–1.95)	< 0.001
Coronary revascularization	1.88 (1.53–2.24)	65.36 (63.98–66.75)	28.08 (23.23–33.94)	< 0.001
All-cause death/myocardial infarction	17.20 (16.11–18.29)	18.76 (18.05–19.46)	1.03 (0.95–1.10)	0.496
All-cause death/ myocardial infarction/coronary revascularization	18.95 (17.81–20.10)	83.88 (82.29–85.48)	3.75 (3.52–3.99)	< 0.001
Adjusted clinical outcomes with IPTW	Incidence rate*		CAG compared with MPI	
	MPI (95% CI)	CAG (95% CI)	Adjusted Hazard ratio (95% CI)	P value
All-cause death	13.43 (12.41–14.45)	16.08 (15.32–16.83)	1.19 (1.09–1.29)	< 0.001
Myocardial infarction	2.27 (1.84–2.69)	4.15 (3.80–4.51)	1.81 (1.49–2.20)	< 0.001
Coronary revascularization	2.19 (1.68–2.70)	63.03 (61.64–64.41)	26.27 (21.86–31.58)	< 0.001
All-cause death/myocardial infarction	15.33 (14.23–16.43)	19.53 (18.70–20.35)	1.26 (1.16–1.36)	< 0.001
All-cause death/ myocardial infarction/coronary revascularization	17.38 (16.17–18.60)	82.32 (80.66–83.98)	4.41 (4.13–4.72)	< 0.001

*Incidence rate per 1000 person-year

CAG= coronary angiography; CI= confidence interval; IPTW = inverse probability of treatment weighting; MPI = myocardial perfusion imaging.

Supplemental Table 4. Adjusted clinical outcomes in the patients undergoing coronary angiography or myocardial perfusion imaging

Adjusted clinical outcomes (CAG compared with MPI)	Univariate analysis		IPTW		PS score adjustment		PS matching (<i>n</i> = 19,906 pairs)	
	C-HR (95% CI)	<i>P</i> value	A-HR (95% CI)	<i>P</i> value	A-HR (95% CI)	<i>P</i> value	A-HR (95% CI)	<i>P</i> value
All-cause death	0.90 (0.83–0.96)	0.003	1.16 (1.06–1.25)	0.001	1.10 (1.02–1.18)	0.018	1.06 (0.97–1.16)	0.207
MI	1.75 (1.46–2.09)	< 0.001	1.95 (1.60–2.36)	< 0.001	1.91 (1.60–2.29)	< 0.001	1.81 (1.46–2.23)	< 0.001
Coronary revascularization	25.33 (20.96–30.60)	< 0.001	24.15 (19.66–29.68)	< 0.001	25.54 (20.97–31.10)	< 0.001	25.96 (21.28–31.68)	< 0.001
All-cause death/MI	1.00 (0.93–1.07)	0.999	1.26 (1.17–1.36)	< 0.001	1.20 (1.12–1.29)	< 0.001	1.15 (1.06–1.26)	0.001
All-cause death/MI/ Coronary revascularization	3.42 (3.22–3.64)	< 0.001	4.24 (3.96–4.54)	< 0.001	3.59 (3.37–3.82)	< 0.001	3.59 (3.36–3.84)	< 0.001

A-HR = adjusted hazard ratio; CAG = coronary angiography; C-HR = crude hazard ratio; CI = confidence interval; IPTW = inverse probability of treatment weighting; MI = myocardial infarction; MPI = myocardial perfusion imaging; PS = propensity score