SUPPLEMENTAL MATERIAL
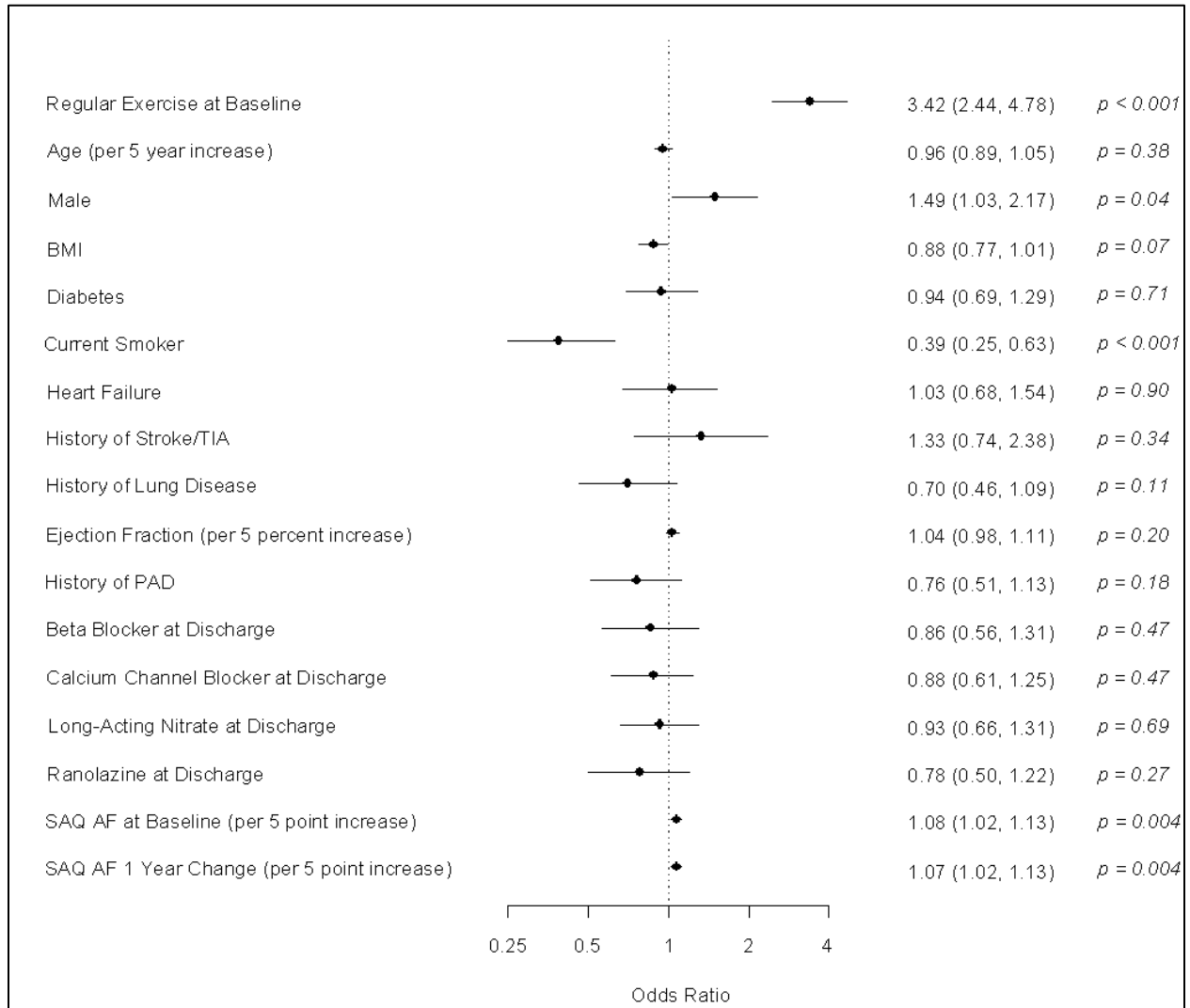
Table S1. Baseline characteristics of excluded and included patients.

	Excluded n = 131	Cohort n = 869	P-Value
Age	64.9 ± 11.8	65.4 ± 10.0	0.612
Male	79.4%	80.6%	0.754
Caucasian	88.5%	90.4%	0.649
Prior CABG	33.6%	36.9%	0.457
Prior PCI	60.3%	66.5%	0.165
BMI	30.3 ± 6.5	30.5 ± 5.9	0.821
Current smoker	17.6%	12.8%	0.138
History of Diabetes Mellitus	50.4%	39.8%	0.021
History of CHF	33.6%	21.3%	0.001
History CKD	24.4%	11.9%	< 0.001
History of Stroke/TIA	10.7%	7.2%	0.168
History PAD	17.6%	17.5%	0.985
History of Lung Disease	16.8%	14.0%	0.402
Number of antianginals on Discharge	1.5 ± 0.9	1.6 ± 0.9	0.583
Any non CTO-PCI	19.8%	12.8%	0.028
Primary CTO Vessel			0.211
LAD	22.9%	20.5%	
LCX	22.1%	16.1%	
LM	0.8%	0.8%	
RCA	54.2%	62.6%	
Lesion length greater than 20mm	60.3%	61.8%	0.743
Lesion #1: Crossing Successful Strategy			0.460
(1) AWE	45.0%	40.2%	
(2) ADR	20.8%	24.8%	
(3) RWE	7.5%	10.8%	
(4) RD	26.7%	24.3%	
J-CTO score	2.2 ± 1.2	2.3 ± 1.3	0.350
Physiologically Complete Revascularization	71.0%	76.6%	0.158

Data presented as mean ± standard deviation for continuous variables or % for categorical variables.

ADR = antegrade dissection and re-entry; AWE = antegrade wire escalation; BMI = body mass index; SAQ = seattle angina questionnaire angina frequency: CABG = coronary artery bypass graft; CTO = chronic total occlusions; J-CTO = Japanese Multicenter CTO registry;   LAD = left anterior descending artery; LCX = left circumference artery; LM = left main artery; PAD = peripheral artery disease; PCI = percutaneous coronary intervention; RCA = right coronary artery ; RD = retrograde dissection; RWE = retrograde wire escalation; TIA = transient ischemic attack

Figure S1. Predictors of Regular Exercise at 1 year including SAQ AF.

	Odds Ratio	
Regular Exercise at Baseline	3.42 (2.44, 4.78)	p < 0.001
Age (per 5 year increase)	0.96 (0.89, 1.05)	p = 0.38
Male	1.49 (1.03, 2.17)	p = 0.04
BMI	0.88 (0.77, 1.01)	p = 0.07
Diabetes	0.94 (0.69, 1.29)	p = 0.71
Current Smoker	0.39 (0.25, 0.63)	p < 0.001
Heart Failure	1.03 (0.68, 1.54)	p = 0.90
History of Stroke/TIA	1.33 (0.74, 2.38)	p = 0.34
History of Lung Disease	0.70 (0.46, 1.09)	p = 0.11
Ejection Fraction (per 5 percent increase)	1.04 (0.98, 1.11)	p = 0.20
History of PAD	0.76 (0.51, 1.13)	p = 0.18
Beta Blocker at Discharge	0.86 (0.56, 1.31)	p = 0.47
Calcium Channel Blocker at Discharge	0.88 (0.61, 1.25)	p = 0.47
Long-Acting Nitrate at Discharge	0.93 (0.66, 1.31)	p = 0.69
Ranolazine at Discharge	0.78 (0.50, 1.22)	p = 0.27
SAQ AF at Baseline (per 5 point increase)	1.08 (1.02, 1.13)	p = 0.004
SAQ AF 1 Year Change (per 5 point increase)	1.07 (1.02, 1.13)	p = 0.004

BMI = body mass index, PAD = peripheral artery disease, SAQ AF = seattle angina questionnaire angina frequency domain, TIA =transient ischemic attack,

Figure S2. Predictors of Regular Exercise at 1 year including SAQ PL.

Predictor	Odds Ratio (95% CI)	p-value
Regular Exercise at Baseline	3.72 (2.47, 5.59)	p < 0.001
Age (per 5 year increase)	1.00 (0.91, 1.10)	p = 0.07
Male	1.06 (0.65, 1.72)	p = 0.14
BMI	0.95 (0.81, 1.13)	p = 0.07
Diabetes	1.12 (0.77, 1.62)	p = 0.95
Current Smoker	0.34 (0.20, 0.58)	p < 0.001
Heart Failure	1.28 (0.77, 2.11)	p = 0.57
History of Stroke/TIA	1.41 (0.67, 2.98)	p = 0.40
History of Lung Disease	0.86 (0.50, 1.50)	p = 0.23
Ejection Fraction (per 5 percent increase)	1.05 (0.97, 1.13)	p = 0.51
History of PAD	0.78 (0.47, 1.30)	p = 0.22
Beta Blocker at Discharge	1.04 (0.64, 1.69)	p = 0.41
Calcium Channel Blocker at Discharge	1.01 (0.65, 1.55)	p = 0.56
Long-Acting Nitrate at Discharge	0.86 (0.58, 1.27)	p = 0.91
Ranolazine at Discharge	0.65 (0.39, 1.09)	p = 0.25
SAQ PL at Baseline (per 5 point increase)	1.15 (1.07, 1.24)	p < 0.001
SAQ PL 1 Year Change (per 5 point increase)	1.12 (1.03, 1.20)	p < 0.001

BMI = body mass index, PAD = peripheral artery disease, SAQ PL = seattle angina questionnaire physical limitations domain, TIA =transient ischemic attack,

Figure S3. Predictors of Regular Exercise at 1 year including SAQ QOL.

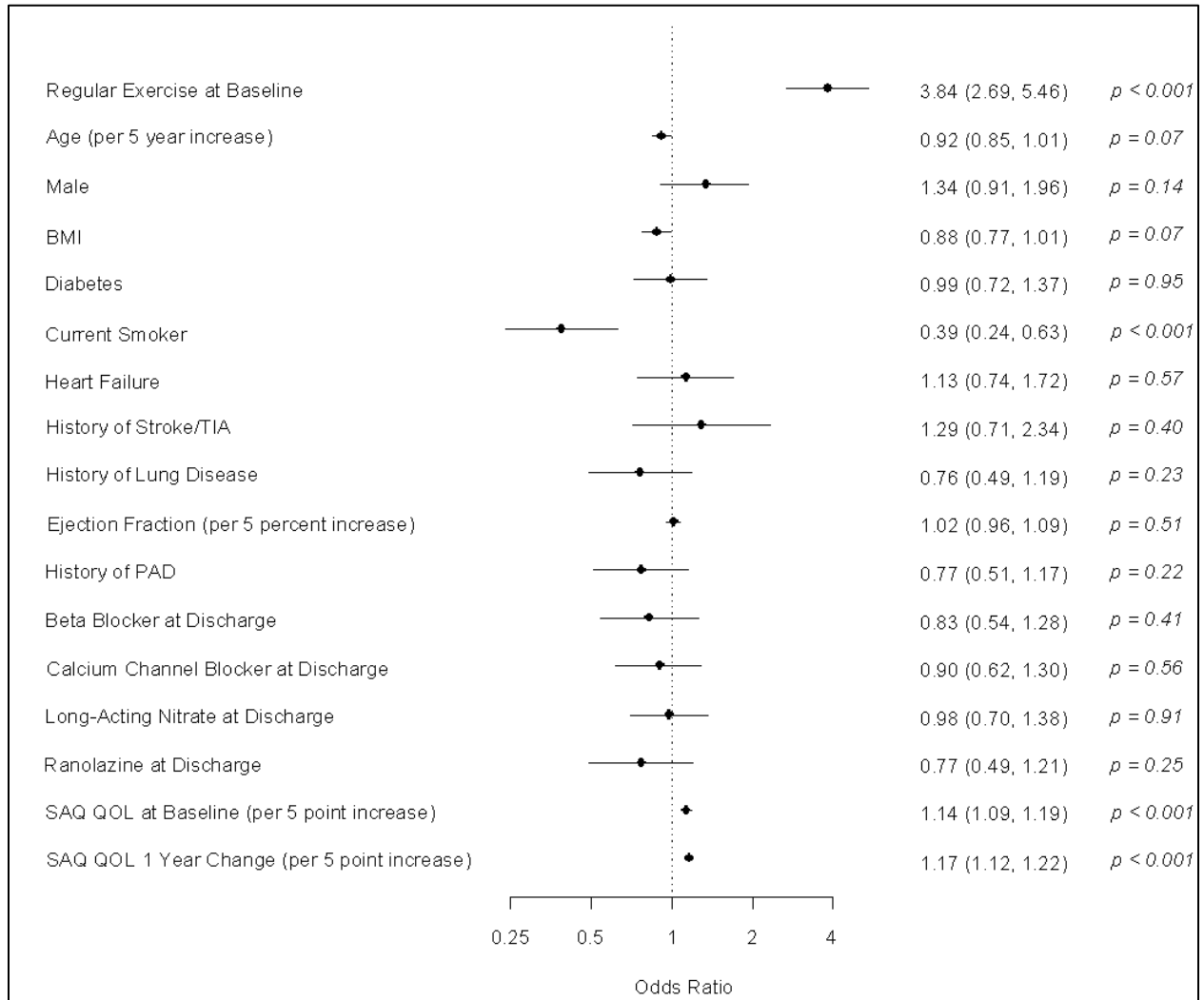| Predictor	Odds Ratio (95% CI)	p-value
Regular Exercise at Baseline	3.84 (2.69, 5.46)	p < 0.001
Age (per 5 year increase)	0.92 (0.85, 1.01)	p = 0.07
Male	1.34 (0.91, 1.96)	p = 0.14
BMI	0.88 (0.77, 1.01)	p = 0.07
Diabetes	0.99 (0.72, 1.37)	p = 0.95
Current Smoker	0.39 (0.24, 0.63)	p < 0.001
Heart Failure	1.13 (0.74, 1.72)	p = 0.57
History of Stroke/TIA	1.29 (0.71, 2.34)	p = 0.40
History of Lung Disease	0.76 (0.49, 1.19)	p = 0.23
Ejection Fraction (per 5 percent increase)	1.02 (0.96, 1.09)	p = 0.51
History of PAD	0.77 (0.51, 1.17)	p = 0.22
Beta Blocker at Discharge	0.83 (0.54, 1.28)	p = 0.41
Calcium Channel Blocker at Discharge	0.90 (0.62, 1.30)	p = 0.56
Long-Acting Nitrate at Discharge	0.98 (0.70, 1.38)	p = 0.91
Ranolazine at Discharge	0.77 (0.49, 1.21)	p = 0.25
SAQ QOL at Baseline (per 5 point increase)	1.14 (1.09, 1.19)	p < 0.001
SAQ QOL 1 Year Change (per 5 point increase)	1.17 (1.12, 1.22)	p < 0.001

Odds Ratio axis: 0.25, 0.5, 1, 2, 4

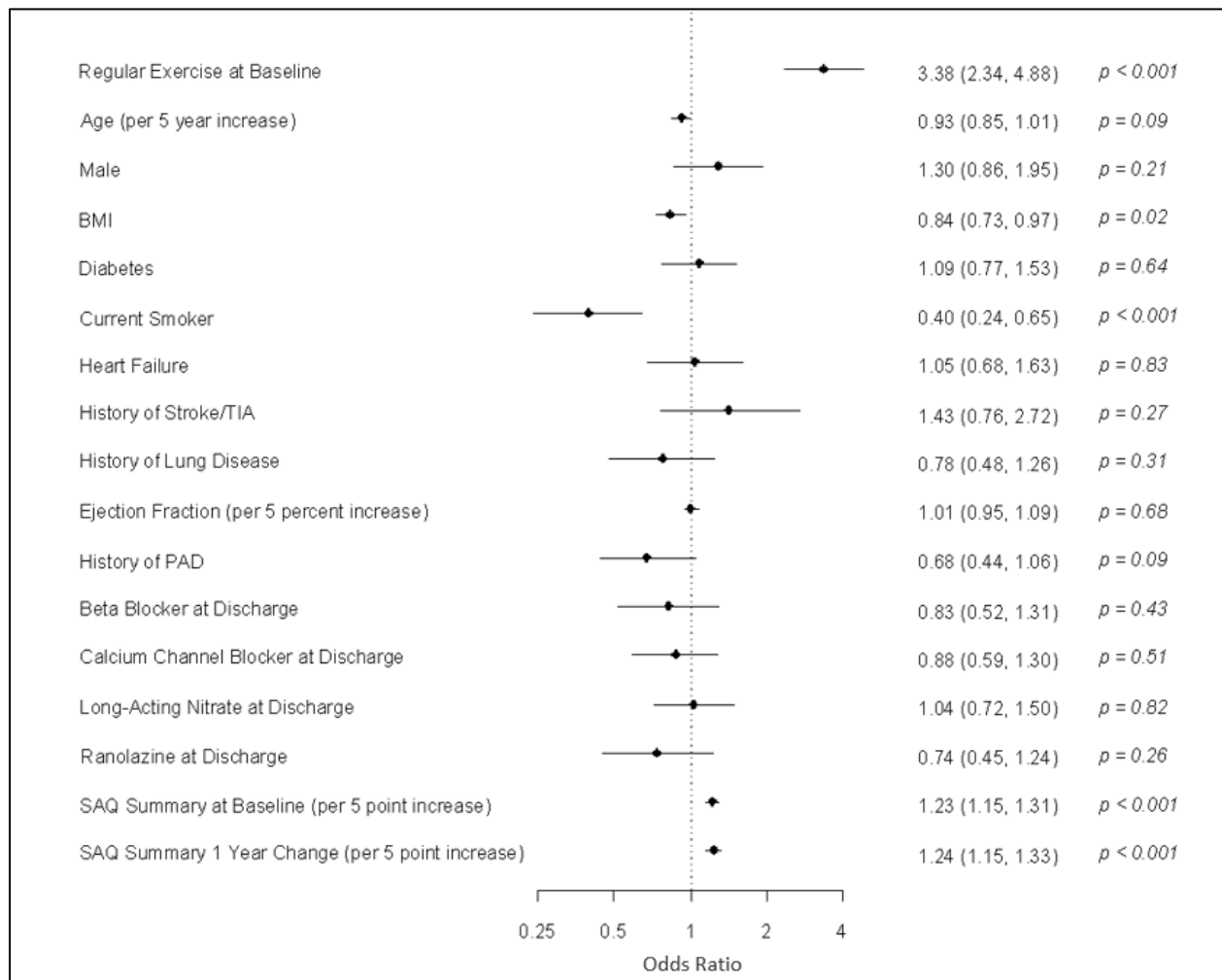BMI = body mass index, PAD = peripheral artery disease, SAQ QoL = seattle angina questionnaire quality of life domain, TIA =transient ischemic attack

Figure S4. Association of change in exercise and health status change at 1 year among patients with successful CTO PCI at 6 months.
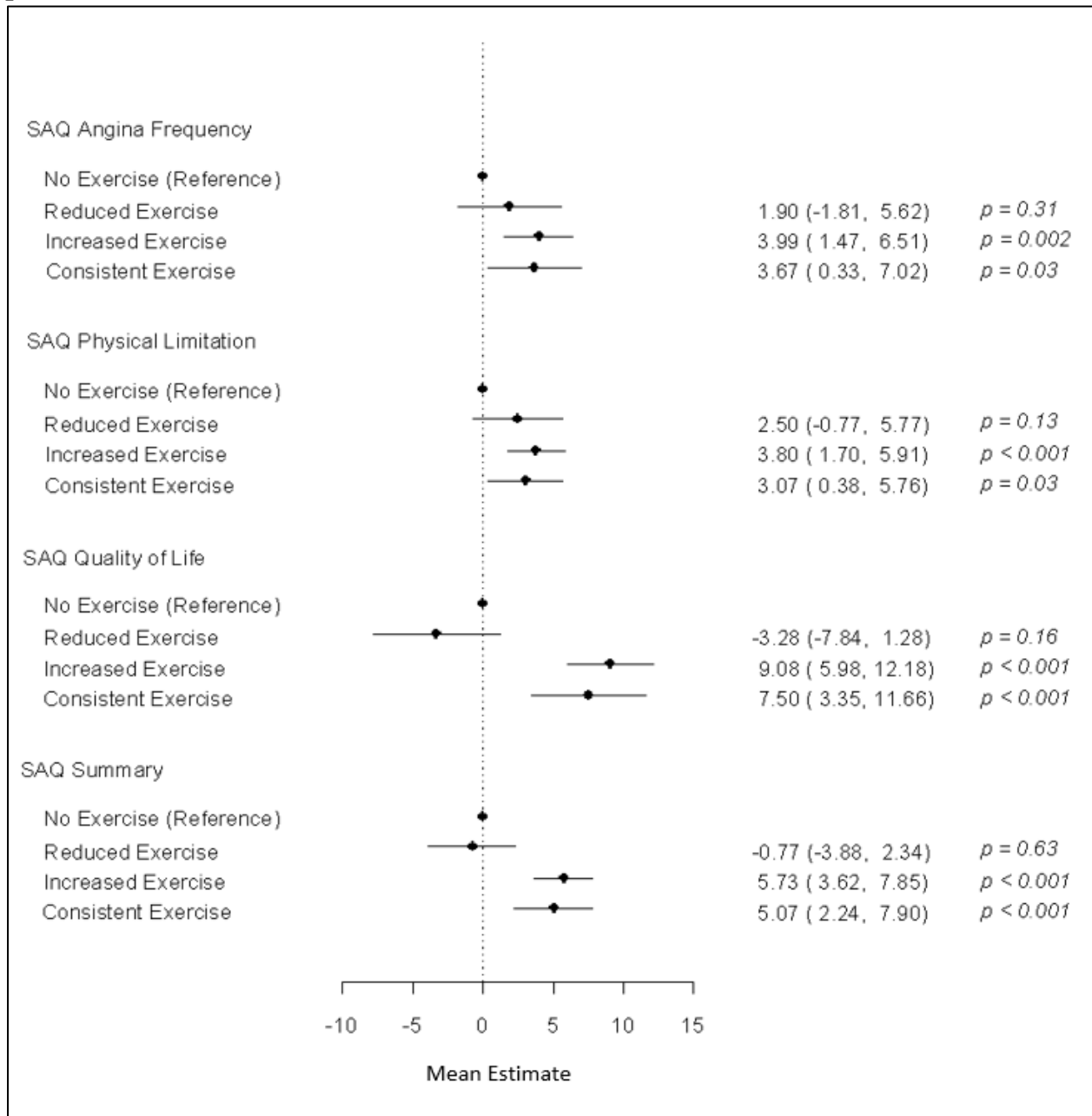
CTO PCI = percutaneous coronary intervention of chronic total occlusion. SAQ = seattle angina questionnaire

Figure S5. Predictors of exercise at 1 year among patients with successful CTO PCI at 6 months.

	Odds Ratio	
Regular Exercise at Baseline	3.38 (2.34, 4.88)	p < 0.001
Age (per 5 year increase)	0.93 (0.85, 1.01)	p = 0.09
Male	1.30 (0.86, 1.95)	p = 0.21
BMI	0.84 (0.73, 0.97)	p = 0.02
Diabetes	1.09 (0.77, 1.53)	p = 0.64
Current Smoker	0.40 (0.24, 0.65)	p < 0.001
Heart Failure	1.05 (0.68, 1.63)	p = 0.83
History of Stroke/TIA	1.43 (0.76, 2.72)	p = 0.27
History of Lung Disease	0.78 (0.48, 1.26)	p = 0.31
Ejection Fraction (per 5 percent increase)	1.01 (0.95, 1.09)	p = 0.68
History of PAD	0.68 (0.44, 1.06)	p = 0.09
Beta Blocker at Discharge	0.83 (0.52, 1.31)	p = 0.43
Calcium Channel Blocker at Discharge	0.88 (0.59, 1.30)	p = 0.51
Long-Acting Nitrate at Discharge	1.04 (0.72, 1.50)	p = 0.82
Ranolazine at Discharge	0.74 (0.45, 1.24)	p = 0.26
SAQ Summary at Baseline (per 5 point increase)	1.23 (1.15, 1.31)	p < 0.001
SAQ Summary 1 Year Change (per 5 point increase)	1.24 (1.15, 1.33)	p < 0.001

CTO PCI = percutaneous coronary intervention of chronic total occlusion. SAQ = seattle angina questionnaire

Figure S6. Distribution of exercise frequency at 12 months among patients who did not participate in regular exercise at baseline but did participate in regular exercise at 12 months among those with successful CTO-PCI.
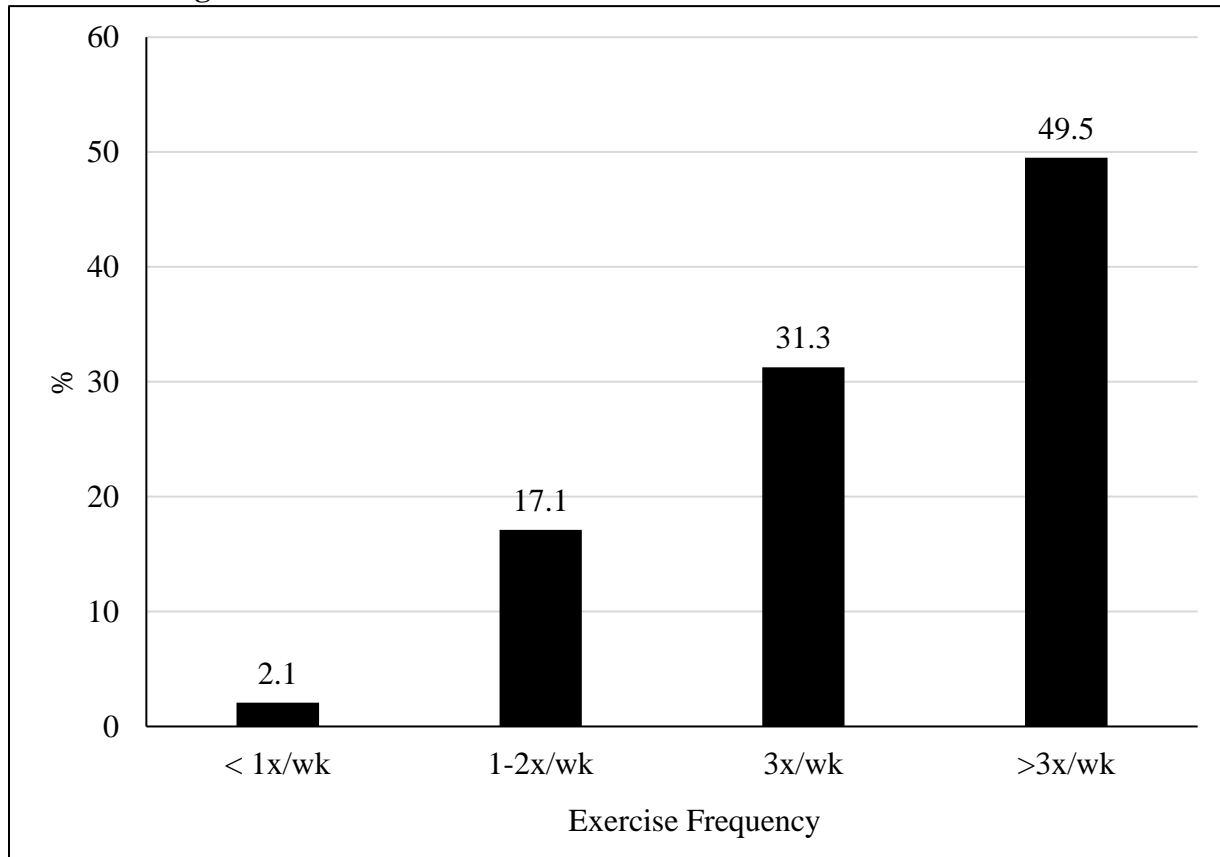
CTO PCI = percutaneous coronary intervention of coronary chronic total occlusion