## SUPPLEMENTARY DATA

## **Table of contents**

- 1. Supplementary tables
- 2. Supplementary figures

## 1. Supplementary Tables

Supplementary table 1. Standardized mean differences of variables before and after inverse-probability-weighting adjustment

	Unadjusted	Adjusted
Male sex	5.2	5.1
Age, y	34.7	1.5
Left ventricular ejection fraction	24.6	2.1
Acute coronary syndrome	21.5	7.7
Current smoking	11.3	1.8
Hypertension	10.3	0.7
Diabetes mellitus	2.5	1.7
Dyslipidemia	16.3	0.5
Chronic kidney disease	9.8	5.2
History of percutaneous coronary intervention	27.5	3.9
History of myocardial infarction	24.0	1.0
History of stroke	9.4	1.5
History of peripheral artery disease	10.4	8.0
Family history of coronary artery disease	17.1	0.6
LM disease	7.4	11.8

LAD disease	11.4	9.1
LCX disease	15.8	2.2
RCA disease	26.5	3.0
Multivessel disease	17.9	0.1
In-stent restenosis	16.2	9.0
Blunt stump	12.4	2.4
Bridging collateral	10.8	1.5
Collateral vessel grade 3	3.4	3.9
Calcification	3.3	4.6
Aspirin	21.6	2.8
Clopidogrel	103.5	3.1
Other antiplatelet	10.5	6.7
Statin	15.7	13.2
Beta-blocker	2.3	2.4
Calcium channel blocker	16.7	7.2
Renin-angiotensin system blockade	2.1	10.4
Spironolactone	11.3	1.3

LM, left main coronary artery; LAD, left anterior descending artery; LCX, left circumflex artery; RCA, right coronary artery

## 2. Supplementary Figures

Subgroup	Event	ts no. / Total no.			Hazard ratio (95% CI)	P for interaction
	OMT group	PCI group	PCI better	OMT better		
Age				OM I better		
≥70 years	20/59	17/79	•		0.47 (0.23-0.97)	0.86
<70 years	15/92	17/187	•		0.50 (0.25-0.99)	
Sex						
Men	26/120	26/206	• •		0.55 (0.31-0.97)	0.41
Women	9/31	8/60	•		0.35 (0.13-0.93)	
Diabetes mellitus						
Present	17/61	15/113	•		0.50 (0.24-1.03)	0.38
Absent	18/90	19/153	• • •		0.48 (0.24-0.94)	
Acute coronary syndron	ne		1			
Yes	10/31	7/56	•		0.44 (0.16-1.24)	0.37
No	25/120	27/210	•		0.50 (0.29-0.88)	
LV ejection fraction			1			
≥50%	18/102	25/215	• • •		0.40 (0.18-0.90)	0.41
<50%	17/49	9/51	•		0.55 (0.29-1.05)	
Chronic kidney disease						
Present	5/13	4/20	•	<del></del>	0.71 (0.19-2.68)	0.95
Absent	30/138	30/246	•		0.46 (0.27-0.78)	
Lesion calcification						
Present	11/30	8/35	•	•	0.73 (0.29-1.86)	0.66
Absent	24/121	26/231	<del></del>		0.42 (0.23-0.75)	
Collateral vessel grade 3	3					
Yes	13/57	12/100	•		0.55 (0.25-1.24)	0.99
No	22/94	22/166	•—•		0.45 (0.24-0.84)	

**Supplementary Figure 1.** Subgroup analysis for primary outcome in LAD CTO population. Benefits of PCI for LAD CTO were generally observed throughout various subgroups of clinical factors. No significant interactions between the factors and the treatment methods were found in any of the pairs. CI, confidence interval; LV, left ventricular; OMT, optimal medical therapy; PCI, percutaneous coronary intervention.

Subgroup	Event	ts no. / Total no.			Hazard ratio (95% CI)	P for interaction
	OMT group	PCI group	PCI better	OMT better		
Age				OWI Detter		
≥70 years	41/152	20/88	•		0.76 (0.46-1.28)	0.79
<70 years	33/302	29/364	• <del>•</del>		0.64 (0.38-1.09)	
Sex						
Men	54/344	31/364	•••		0.53 (0.34-0.84)	0.02
Women	20/110	18/88	•	•	1.32 (0.69-2.53)	
Diabetes mellitus						
Present	37/211	29/205	•		0.80 (0.49-1.31)	0.41
Absent	37/243	20/247	• · · · · · · · · · · · · · · · · · · ·		0.60 (0.34-1.04)	
Acute coronary syndro	me					
Yes	14/62	18/117	•		0.65 (0.32-1.31)	0.74
No	60/392	31/335	•		0.72 (0.46-1.13)	
LV ejection fraction						
≥50%	47/343	34/380	•		0.66 (0.42-1.03)	0.52
<50%	27/111	15/72	•		0.81 (0.41-1.58)	
Chronic kidney disease	•					
Present	11/40	11/27	•		• 1.53 (0.65-3.61)	0.05
Absent	63/414	38/425	•—•		0.60 (0.39-0.90)	
Lesion calcification						
Present	12/67	12/74	•	•	0.95 (0.42-2.16)	0.38
Absent	62/387	37/378	•		0.65 (0.42-0.99)	
Collateral vessel grade	3					
Yes	28/164	13/273	•—•		0.48 (0.25-0.94)	0.23
No	46/290	36/179	•		0.84 (0.53-1.32)	

**Supplementary Figure 2.** Subgroup analysis for primary outcome in non-LAD CTO population. Men and those without chronic kidney disease showed significant benefit from PCI for non-LAD CTO. Significant interaction between sexes and the treatment methods were observed.

Abbreviations. CI, confidence interval; LV, left ventricular; OMT, optimal medical therapy; PCI, percutaneous coronary intervention.