

## **Supplementary Appendix**

### **The predictors of target lesion revascularization in second-generation drug-eluting stent era**

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- 1. Supplementary Tables**
- 2. Supplementary Figure**

**Supplementary Table 1. Baseline demographic and clinical characteristics of the current study population and total parent population.**

	<b>Current study population (n=394)</b>	<b>Total parent population (n=3365)</b>	<b>P value</b>
<b>Age (years old)</b>	65.5±10.4	65.5±10.4	1.000
<b>BMI (kg/m<sup>2</sup>)</b>	24.7±2.9	24.5±3.1	0.223
<b>Male sex, n (%)</b>	289 (73.4)	2383 (70.8)	0.668
<b>Previous PCI, n (%)</b>	48 (12.2)	612 (18.2)	0.011
<b>Diabetes mellitus, n (%)</b>	133 (33.8)	1322 (39.3)	0.150
<b>Hypertension, n (%)</b>	275 (69.8)	2217 (65.9)	0.488
<b>Dyslipidemia, n (%)</b>	248 (62.9)	2294 (68.2)	0.350
<b>CRF, n (%)</b>	162 (41.1)	1323 (39.3)	0.651
<b>Current Smoking, n (%)</b>	104 (26.4)	778 (23.1)	0.258
<b>FHx of CAD, n (%)</b>	52 (13.2)	398 (11.8)	0.484
<b>LV ejection fraction, (%)</b>	60.0±8.6	57.4±10.4	<0.001
<b>Clinical diagnosis</b>			0.002
<b>- Silent ischemia, n (%)</b>	21 (5.3)	169 (5.0)	
<b>- Stable angina, n (%)</b>	232 (58.9)	1630 (48.4)	
<b>- Unstable angina, n (%)</b>	78 (19.8)	809 (24.0)	
<b>- STEMI, n (%)</b>	24 (6.1)	362 (10.8)	

- NSTEMI, n (%)	39 (9.9)	391 (11.6)	0.363
<b>Vessel disease</b>			
- 1 Vessel disease, n (%)	108 (27.4)	1051 (31.2)	
- 2 Vessel disease, n (%)	149 (37.8)	1143 (34.0)	
- 3 Vessel disease, n (%)	137 (34.8)	1171 (34.8)	

BMI, body mass index; PCI, percutaneous coronary intervention; CRF, chronic renal failure; FHx, family history; CAD, coronary artery disease; LV, left ventricle; STEMI, ST-elevation myocardial infarction; NSTEMI, non ST-elevation myocardial infarction.

**Supplementary Table 2. Baseline patients and lesions characteristics**

<b>Patient character (N=394)</b>	<b>Value</b>
<b>Age (years old)</b>	65.5±10.4
<b>BMI (kg/m<sup>2</sup>)</b>	24.7±2.9
<b>Male sex, n (%)</b>	289 (73.4)
<b>Previous PCI, n (%)</b>	48 (12.2)
<b>Previous CABG, n (%)</b>	7 (1.8)
<b>Previous MI, n (%)</b>	29 (7.4)
<b>Previous CHF, n (%)</b>	3 (0.8)
<b>Diabetes mellitus, n (%)</b>	133 (33.8)
- No control, n (%)	16 (4.1)
- Dietary, n (%)	6 (1.5)
- Oral, n (%)	102 (25.9)
- Insulin, n (%)	20 (5.1)

<b>Hypertension, n (%)</b>	275 (69.8)
<b>CRF, n (%)</b>	162 (41.1)
<b>Dyslipidemia, n (%)</b>	248 (62.9)
<b>Smoking, (%)<sup>*</sup></b>	44.7 / 26.4 / 27.9
<b>FHx of CAD, n (%)</b>	52 (13.2)
<b>LV Ejection fraction, (%)</b>	60.0±8.6
<b>Clinical diagnosis, (%)<sup>†</sup></b>	5.3 / 58.9 / 19.8 / 6.1 / 9.9
<b>Number of Vessel disease, (%)<sup>‡</sup></b>	27.4 / 37.8 / 34.8
<b><i>Laboratory tests</i></b>	
<b>WBC (10<sup>9</sup>/L)</b>	6.9±2.3
<b>Hemoglobin (g/dl)</b>	13.5±1.8
<b>Creatinine(mg/dl)</b>	1.08±0.66
<b>GFR (ml/min)</b>	69.3±24.8
<b>CrCl (ml/min)</b>	67.6±23.1
<b>HbA1c (%)</b>	6.79±1.21
<b>Total cholesterol (mg/dl)</b>	158±39
<b>Triglyceride (mg/dl)</b>	138±84
<b>LDL (mg/dl)</b>	97±36
<b>HDL (mg/dl)</b>	42±11
<b>CRP(mg/dl)</b>	0.40±1.13
<b><i>Medication at discharge</i></b>	
<b>- Aspirin, n (%)</b>	393 (99.7)
<b>- Clopidogrel, n (%)</b>	393 (99.7)
<b>- DAPT, n (%)<sup>#</sup></b>	392 (99.5)
<b>- Beta blocker, n (%)</b>	279 (70.8)
<b>- Statin, n (%)</b>	376 (95.4)
<b>- CCB, n (%)</b>	86 (21.8)
<b>- ACEI, n (%)</b>	101 (25.6)

- ARB, n (%)	153 (38.8)
<b>Medication at first follow-up</b>	
- Aspirin, n (%)	391 (99.2)
- Clopidogrel, n (%)	385 (97.7)
- DAPT, n (%) <sup>#</sup>	382 (97.0)
- Beta blocker, n (%)	294 (74.6)
- Statin, n (%)	392 (99.5)
- CCB, n (%)	87 (22.1)
- ACEI, n (%)	44 (11.2)
- ARB, n (%)	158 (40.1)
<b>Medication at second follow-up</b>	
- Aspirin, n (%)	362 (91.9)
- Clopidogrel, n (%)	337 (85.5)
- DAPT, n (%) <sup>#</sup>	307 (77.9)
- Beta blocker, n (%)	281 (71.3)
- Statin, n (%)	388 (98.5)
- CCB, n (%)	77 (19.5)
- ACEI, n (%)	35 (8.9)
- ARB, n (%)	150 (38.1)
<b>Lesion character (N=944)</b>	
Stent/person (n)	2.4±1.6
Second generation DES (%)	100
<b>Stent type</b>	
- CoCr-EES (%)	25.8
- ZES (%)	32.8
- BES (%)	17.6
- PtCr-EES (%)	23.7
<b>Lesion type</b>	
- A (%)	10.6
- B1 (%)	23.5

- B2 (%)	6.3
- C (%)	56.5
<b>Type B2/C lesion (%)</b>	<b>62.7</b>
<b>Treated coronary location</b>	
- LM (%)	8.8
- LAD (%)	37.7
- Proximal LAD (%)	22.7
- Mid LAD (%)	8.7
- Distal LAD (%)	1.9
- Diagonal 1 (%)	3.7
- Diagonal 2 (%)	0.7
- LCX (%)	24.8
- Proximal LCX (%)	11.2
- Distal LCX (%)	8.6
- Ramus (%)	2.0
- OM1 (%)	2.6
- OM2 (%)	0.3
- RCA (%)	28.5
- Proximal RCA (%)	17.4
- Mid RCA (%)	5.0
- Distal RCA (%)	4.7
- PDA (%)	0.7
- PL branch (%)	0.7
- SVG (%)	0.2
<b>Bifurcation lesion (%)</b>	<b>35.3</b>
<b>Calcified lesion (moderate &amp; severe) (%)</b>	<b>32.1</b>
<b>Tortuous lesion (%)</b>	<b>6.9</b>
<b>Angulation lesion (%)</b>	<b>6.4</b>
<b>Thrombus in lesion (%)</b>	<b>3.1</b>
<b>Ostial lesion (%)</b>	<b>19.4</b>

<b>Ulceration (%)</b>	0.5
<b>Aneurysm (%)</b>	1.1
<b>Previously treated lesion (%)</b>	1.7
<b>Stent diameter (mm)</b>	3.03±0.44
<b>Stent length (mm)</b>	25.4±6.0
<b>Pre-procedure MLD (mm)</b>	0.73±0.50
<b>Pre-procedure DS (%)</b>	74.8±15.7
<b>Reference Vessel Diameter (mm)</b>	2.92±0.52
<b>Lesion length (mm)</b>	27.7±17.3
<b>Post-procedure MLD (in-stent) (mm)</b>	2.48±0.44
<b>Post-procedure MLD (in-segment) (mm)</b>	2.11±0.52
<b>Post-procedure DS (in-stent) (%)</b>	11.8±8.5
<b>Post-procedure DS (in-segment) (%)</b>	21.5±11.6
<b><i>Restenosis pattern at first angiographic follow-up</i></b>	
<b>- 0-No Restenosis (%)</b>	89.1
<b>- 1-Focal articulation or Gap (%)</b>	0.3
<b>- 2-Focal in stent (stent body) (%)</b>	3.1
<b>- 3-Focal in stent (stent proximal edge) (%)</b>	2.5
<b>- 4-Focal in stent (stent distal edge) (%)</b>	0.4
<b>- 5-Multiple focal in segment (&lt;5mm from edge) (%)</b>	0.8
<b>- 6-Diffuse in stent (%)</b>	1.3
<b>- 7-Diffuse proliferative (%)</b>	0.1
<b>- 8-Complete stent occlusion (%)</b>	0.8
<b><i>Restenosis pattern at second angiographic follow-up</i></b>	
<b>- 0-No Restenosis (%)</b>	83.2
<b>- 1-Focal articulation or Gap (%)</b>	0.0
<b>- 2-Focal in stent (stent body) (%)</b>	1.6
<b>- 3-Focal in stent (stent proximal edge) (%)</b>	2.0
<b>- 4-Focal in stent (stent distal edge) (%)</b>	1.3
<b>- 5-Multiple focal in segment (&lt;5mm from edge) (%)</b>	0.3

- 6-Diffuse in stent (%)	1.1
- 7-Diffuse proliferative (%)	0.2
- 8-Complete stent occlusion (%)	0.4

BMI, body mass index; kg, kilogram; PCI, percutaneous coronary intervention; CABG, coronary artery bypass graft surgery; MI, Myocardial infarction; CHF, Congestive heart failure; CRF, chronic renal failure; FHx, family history; CAD, coronary artery disease; LV, left ventricle; WBC, white blood cell; GFR, glomerular filtration rate; CrCl, creatinine clearance; HbA1c, hemoglobin A1c; LDL, low density lipoprotein cholesterol; HDL, high density lipoprotein cholesterol; CRP, C-reactive protein; DAPT, dual antiplatelet therapy; CCB, calcium channel blockers; ACEI, angiotensin converting enzyme inhibitors; ARB, angiotensin II receptor blockers; DES, drug eluting stent; CoCr-EES, cobalt chromium everolimus-eluting stent; ZES, zotarolimus-eluting stent; BES, Biolimus- eluting stent; PtCr-EES, platinum chromium everolimus-eluting stent; LM, left main; LAD, left anterior descending; LCX, left circumflex; OM, obtuse marginal; RCA, right coronary artery; PDA, posterior descending artery; PL, posterolateral; SVG, saphenous vein graft; MLD, minimal lumen diameter; DS, diameter stenosis.

\* Smoking: Never smoker / Current smoker / Ex-smoker

† Clinical diagnosis: Silent ischemia / Stable angina / Unstable angina / non ST-segment elevation myocardial infarction / ST-segment elevation myocardial infarction

‡ Vessel disease: 1 Vessel disease / 2 Vessel disease / 3 Vessel disease

#DAPT: Combination of aspirin and Clopidogrel.



**Supplementary Table 3. Laboratory findings at the follow-up periods**

	<b>Baseline</b>	<b>1st follow-up</b>	<b>2nd follow-up</b>
<b>WBC (10<sup>9</sup>/L)</b>	6.9±2.3	6.0±1.5	5.9±1.5
<b>Hemoglobin (g/dl)</b>	13.5±1.8	13.2±1.8	13.4±1.6
<b>Creatinine(mg/dl)</b>	1.08±0.66	1.02±0.70	1.07±0.97
<b>Total cholesterol (mg/dl)</b>	158±39	129±27	129±25
<b>Triglyceride (mg/dl)</b>	138±84	115±51	113±54
<b>LDL (mg/dl)</b>	97±36	66±22	65±20
<b>HDL (mg/dl)</b>	42±11	44±12	47±12
<b>CRP(mg/L)</b>	0.40±1.13	0.14±0.43	0.23±0.85

WBC, white blood cell; LDL, low density lipoprotein cholesterol; HDL, high density lipoprotein cholesterol; CRP, C-reactive protein

**Supplementary Table 4. Clinical events during the follow-up period**

	<b>First follow-up (N=394)</b>	<b>Second follow-up (N=394)</b>
<b>MACE, n (%)</b>	40 (10.2)	59 (15.0)
<b>- All death, n (%)</b>	0 (0)	1 (0.3)
<b>- All MI, n (%)</b>	2 (0.5)	3 (0.8)
<b>- TLR, n (%)</b>	40 (10.2)	59 (15.0)
<b>- Stent thrombosis, n (%)</b>	0 (0)	0 (0)

MACE, major adverse cardiac events; MI, myocardial infarction; TLR, target lesion revascularization.

**Supplementary Table 5. Ischemic driven and angiographic driven TLR**

	<b>Early TLR (+)</b> <b>(N=58)</b>	<b>Late TLR (+)</b> <b>(N=23)</b>
<b>Ischemic driven TLR, n (%)</b>	9 (15.5)	7 (30.4)
<b>Angiographic driven TLR, n (%)</b>	49 (84.5)	16 (69.6)

TLR, target lesion revascularization.

**Supplementary Table 6. TLR method**

	<b>Early TLR (+)</b> <b>(N=58)</b>	<b>Late TLR (+)</b> <b>(N=23)</b>
<b>POBA, n (%)</b>	30 (51.7)	10 (43.5)
<b>DEB, n (%)</b>	20 (34.5)	9 (39.1)
<b>DES, n (%)</b>	8 (13.8)	4 (17.4)
- Same type of DES, n (%)	2 (3.4)	2 (8.7)
- Different type of DES, n (%)	6 (10.3)	2 (8.7)

TLR, target lesion revascularization; POBA, plain Old Balloon Angioplasty; DEB, drug eluting balloon; DES, drug eluting stent.

**Supplementary Figure 1. Cumulative probability curve of MLD (post procedure, first angiographic follow-up, second angiographic follow-up)**

