

Supplementary Material 1 Equations for calculating eGFR

	Age	Sex		Equation
CKD-EPI eGFR _{cr}	≥18	Female	Scr ≤ 0.7 mg/dL	$143 \times (\text{Scr}/0.7)^{-0.241} \times (0.9938)^{\text{Age}}$
			Scr > 0.7 mg/dL	$143 \times (\text{Scr}/0.7)^{-1.200} \times (0.9938)^{\text{Age}}$
		Male	Scr ≤ 0.9 mg/dL	$142 \times (\text{Scr}/0.9)^{-0.302} \times (0.9938)^{\text{Age}}$
			Scr > 0.9 mg/dL	$142 \times (\text{Scr}/0.9)^{-1.200} \times (0.9938)^{\text{Age}}$

CKD-EPI eGFR_{cr}, estimated glomerular filtration rate calculated with the Chronic Kidney Disease Epidemiology Collaboration creatinine-based equation; Scr, serum creatinine;

STable1 Baseline characteristic of CAD patients with impaired kidney function divided by ApoB level

	Overall	Low ApoB	High ApoB	p
n	1640	837	803	
Male (%)	670 (40.9)	316 (37.8)	354 (44.1)	0.011
Age, y	69.40 [62.88, 75.90]	70.30 [63.90, 76.70]	68.60 [61.85, 74.70]	<0.001
BMI, kg/m2	25.70 [23.53, 27.73]	25.66 [23.46, 27.70]	25.71 [23.67, 27.74]	0.657
Clinical presentation				
ACS (%)	1116 (68.0)	567 (67.7)	549 (68.4)	0.827
DM (%)	1040 (63.4)	517 (61.8)	523 (65.1)	0.173
Dyslipidemia (%)	1283 (78.2)	645 (77.1)	638 (79.5)	0.266
HTN (%)	1341 (81.8)	683 (81.6)	658 (81.9)	0.908
Family History				
CAD (%)	160 (9.8)	72 (8.6)	88 (11.0)	0.127
Smoking (%)	858 (52.3)	449 (53.6)	409 (50.9)	0.294
Medications at discharge				
ARB/ACEI (%)	516 (31.5)	267 (31.9)	249 (31.0)	0.737
CCB (%)	859 (52.4)	435 (52.0)	424 (52.8)	0.774
NIT (%)	1572 (95.9)	805 (96.2)	767 (95.5)	0.585
beta (%)	1472 (89.8)	750 (89.6)	722 (89.9)	0.902
statin (%)	1613 (98.4)	827 (98.8)	786 (97.9)	0.203
Aspirin (%)	1624 (99.0)	831 (99.3)	793 (98.8)	0.402
Clopidogrel (%)	1619 (98.7)	825 (98.6)	794 (98.9)	0.731
Ticagrelor (%)	288 (17.6)	145 (17.3)	143 (17.8)	0.847
Laboratory data				
CR	1.36 [1.18, 1.52]	1.36 [1.21, 1.50]	1.37 [1.16, 1.55]	0.557
eGFR, mL/min/1.73 m ²	53.16 [46.58, 56.90]	53.37 [46.95, 56.94]	52.92 [46.31, 56.84]	0.327
HbA1C, %	6.50 [5.90, 7.50]	6.40 [5.90, 7.40]	6.50 [5.90, 7.60]	0.079
ApoA1, mmol/L	1.32 [1.14, 1.50]	1.27 [1.11, 1.46]	1.36 [1.18, 1.53]	<0.001
ApoB, mmol/L	0.76 [0.63, 0.92]	0.63 [0.55, 0.69]	0.93 [0.83, 1.06]	<0.001
ApoB/ApoA1	0.58 [0.47, 0.72]	0.48 [0.40, 0.56]	0.70 [0.60, 0.83]	<0.001
TC, mmol/L	3.96 [3.36, 4.74]	3.42 [3.03, 3.78]	4.70 [4.19, 5.35]	<0.001
TG, mmol/L	1.63 [1.21, 2.24]	1.42 [1.10, 1.89]	1.95 [1.42, 2.69]	<0.001
LDL, mmol/L	2.31 [1.82, 2.99]	1.87 [1.58, 2.19]	2.95 [2.54, 3.47]	<0.001
HDL, mmol/L	1.07 [0.89, 1.26]	1.04 [0.87, 1.25]	1.08 [0.91, 1.27]	0.005

UA, mmol/L	406.88 [345.70, 484.60]	401.20 [341.27, 477.84]	409.82 [348.94, 493.15]	0.04
HBG, g/dL	4.44 [4.03, 4.91]	4.38 [3.94, 4.84]	4.52 [4.10, 4.97]	<0.001
PLT, K/uL	222.00 [182.00, 266.00]	215.00 [176.00, 259.00]	229.00 [190.50, 274.00]	<0.001
WBC, K/uL	6.95 [5.86, 8.34]	6.86 [5.79, 8.32]	7.03 [5.94, 8.34]	0.203
Angiographic and PCI data				
Heavily calcified (%)	91 (5.5)	48 (5.7)	43 (5.4)	0.82
LM (%)	73 (4.5)	37 (4.4)	36 (4.5)	1
LAD (%)	643 (39.2)	350 (41.8)	293 (36.5)	0.031
LCX (%)	244 (14.9)	115 (13.7)	129 (16.1)	0.21
RCA (%)	642 (39.1)	319 (38.1)	323 (40.2)	0.409
Syntax	13.00 [7.00, 20.50]	13.00 [8.00, 20.50]	13.00 [7.00, 21.00]	0.957
MLD, mm	0.30 [0.04, 0.50]	0.30 [0.10, 0.50]	0.28 [0.04, 0.50]	0.184
TIMI (%)	0 336 (20.5)	166 (19.8)	170 (21.2)	0.928
	1 62 (3.8)	32 (3.8)	30 (3.7)	
	2 170 (10.4)	88 (10.5)	82 (10.2)	
	3 1072 (65.4)	551 (65.8)	521 (64.9)	
Lesion length, mm	25.00 [15.00, 39.00]	25.00 [15.00, 39.00]	25.00 [16.00, 40.00]	0.747
Concentric (%)	264 (16.1)	150 (17.9)	114 (14.2)	0.047
Stent length, mm	28.00 [18.00, 41.25]	28.00 [18.00, 43.00]	29.00 [18.00, 39.50]	0.791
Stent (%)	1457 (88.8)	745 (89.0)	712 (88.7)	0.888

BMI, body mass index; WBC, white blood cell; HBG, hemoglobin; PLT, platelet; eGFR, estimated glomerular filtration rate; ACS, acute coronary syndrome; DM, diabetes mellitus; HTN, hypertension; PCI, percutaneous coronary intervention; TG, triglycerides; TC, total cholesterol; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; MLD, minimal lumen diameter; TIMI, Thrombolysis In Myocardial Infarction; LM, left main coronary artery; RCA, right coronary artery; LAD, left anterior descending branch; LCX, left circumflex branch; SYNTAX, synergy between percutaneous coronary intervention with TAXUS and cardiac surgery; Apos, apolipoproteins; ApoA1, apolipoprotein A1; ApoB, apolipoprotein B.

STable2 Baseline characteristic of CAD patients with impaired kidney function divided by ApoA1 level

	Overall	Low ApoA1	High ApoA1	p
n	1640	834	806	
Male (%)	670 (40.9)	250 (30.0)	420 (52.1)	<0.001
Age, y	69.40 [62.88, 75.90]	68.70 [61.82, 75.50]	70.10 [63.90, 76.30]	0.002
BMI, kg/m2	25.70 [23.53, 27.73]	25.83 [23.73, 27.76]	25.46 [23.44, 27.68]	0.083
Clinical presentation				
ACS (%)	1116 (68.0)	581 (69.7)	535 (66.4)	0.169
DM (%)	1040 (63.4)	546 (65.5)	494 (61.3)	0.088
Dyslipidemia (%)	1283 (78.2)	639 (76.6)	644 (79.9)	0.121
HBP (%)	1341 (81.8)	677 (81.2)	664 (82.4)	0.569
Family History CAD (%)	160 (9.8)	77 (9.2)	83 (10.3)	0.52
Smoking (%)	858 (52.3)	510 (61.2)	348 (43.2)	<0.001
Medications at discharge				
ARB.ACEI (%)	516 (31.5)	267 (32.0)	249 (30.9)	0.663
CCB (%)	859 (52.4)	421 (50.5)	438 (54.3)	0.129
NIT (%)	1572 (95.9)	793 (95.1)	779 (96.7)	0.142
beta (%)	1472 (89.8)	768 (92.1)	704 (87.3)	0.002
statin (%)	1613 (98.4)	819 (98.2)	794 (98.5)	0.765
Aspirin (%)	1624 (99.0)	829 (99.4)	795 (98.6)	0.185
Clopidogrel (%)	1619 (98.7)	821 (98.4)	798 (99.0)	0.424
Ticagrelor (%)	288 (17.6)	172 (20.6)	116 (14.4)	0.001
Laboratory data				
CR	1.36 [1.18, 1.52]	1.41 [1.28, 1.57]	1.31 [1.10, 1.46]	<0.001
eGFR, mL/min/1.73 m ²	53.16 [46.58, 56.90]	52.49 [45.65, 56.59]	53.75 [47.56, 57.20]	0.001

HbA1C, %	6.50 [5.90, 7.50]	6.50 [5.90, 7.50]	6.40 [5.90, 7.50]	0.85
ApoA1, mmol/L	1.32 [1.14, 1.50]	1.15 [1.04, 1.24]	1.50 [1.41, 1.66]	<0.001
ApoB, mmol/L	0.76 [0.63, 0.92]	0.73 [0.59, 0.88]	0.80 [0.66, 0.96]	<0.001
ApoB/ApoA1	0.58 [0.47, 0.72]	0.64 [0.53, 0.80]	0.52 [0.42, 0.63]	<0.001
TC, mmol/L	3.96 [3.36, 4.74]	3.64 [3.11, 4.32]	4.27 [3.68, 5.06]	<0.001
TG, mmol/L	1.63 [1.21, 2.24]	1.62 [1.20, 2.22]	1.65 [1.22, 2.27]	0.822
LDL, mmol/L	2.31 [1.82, 2.99]	2.15 [1.70, 2.77]	2.51 [1.98, 3.16]	<0.001
HDL, mmol/L	1.07 [0.89, 1.26]	0.91 [0.80, 1.05]	1.23 [1.09, 1.43]	<0.001
UA, mmol/L	406.88 [345.70, 484.60]	421.37 [358.74, 501.00]	387.80 [329.84, 471.06]	<0.001
HBG, g/dL	4.44 [4.03, 4.91]	4.42 [3.95, 4.90]	4.47 [4.09, 4.93]	0.081
PLT, K/uL	222.00 [182.00, 266.00]	219.00 [179.00, 266.00]	224.00 [186.00, 265.00]	0.126
WBC, K/uL	6.95 [5.86, 8.34]	7.16 [6.03, 8.68]	6.74 [5.71, 8.06]	<0.001
Angiographic and PCI data				
Heavily calcified (%)	91 (5.5)	45 (5.4)	46 (5.7)	0.867
LM (%)	73 (4.5)	42 (5.0)	31 (3.8)	0.295
LAD (%)	643 (39.2)	326 (39.1)	317 (39.3)	0.961
LCX (%)	244 (14.9)	118 (14.1)	126 (15.6)	0.438
RCA (%)	642 (39.1)	323 (38.7)	319 (39.6)	0.763
Syntax	13.00 [7.00, 20.50]	13.50 [8.00, 21.00]	13.00 [7.00, 20.00]	0.272
MLD, mm	0.30 [0.04, 0.50]	0.28 [0.03, 0.50]	0.30 [0.15, 0.55]	<0.001
TIMI (%)	0 336 (20.5)	199 (23.9)	137 (17.0)	<0.001
	1 62 (3.8)	40 (4.8)	22 (2.7)	
	2 170 (10.4)	86 (10.3)	84 (10.4)	
	3 1072 (65.4)	509 (61.0)	563 (69.9)	
B2_C_lesion (%)	1218 (74.3)	628 (75.3)	590 (73.2)	0.36

Diffused Range (%)	949 (57.9)	483 (57.9)	466 (57.8)	1
Lesion length, mm	25.00 [15.00, 39.00]	25.00 [15.00, 40.00]	25.00 [15.00, 38.00]	0.737
Stent length, mm	28.00 [18.00, 41.25]	28.00 [18.00, 42.00]	28.00 [18.00, 40.00]	0.63
Stent (%)	1457 (88.8)	746 (89.4)	711 (88.2)	0.474
PCI Success (%)	1531 (93.4)	764 (91.6)	767 (95.2)	0.005

BMI, body mass index; WBC, white blood cell; HBG, hemoglobin; PLT, platelet; eGFR, estimated glomerular filtration rate; ACS, acute coronary syndrome; DM, diabetes mellitus; PCI, percutaneous coronary intervention; TG, triglycerides; TC, total cholesterol; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; MLD, minimal lumen diameter; TIMI, Thrombolysis In Myocardial Infarction; LM, left main coronary artery; RCA, right coronary artery; LAD, left anterior descending branch; LCX, left circumflex branch; SYNTAX, synergy between percutaneous coronary intervention with TAXUS and cardiac surgery;

STable3 Baseline characteristic of CAD patients with impaired kidney function divided by ApoB/ApoA1 level

	Overall	Low ApoB/ApoA1	High ApoB/ApoA1	p
n	1640	820	820	
Male (%)	670 (40.9)	347 (42.3)	323 (39.4)	0.248
Age, y	69.40 [62.88, 75.90]	70.60 [64.50, 76.73]	68.60 [61.68, 74.90]	<0.001
BMI, kg/m2	25.70 [23.53, 27.73]	25.68 [23.44, 27.70]	25.71 [23.83, 27.75]	0.444
Clinical presentation				
ACS (%)	1116 (68.0)	550 (67.1)	566 (69.0)	0.427
DM (%)	1040 (63.4)	493 (60.1)	547 (66.7)	0.007
Dyslipidemia (%)	1283 (78.2)	641 (78.2)	642 (78.3)	1
HBP (%)	1341 (81.8)	666 (81.2)	675 (82.3)	0.609
Family History				
CAD (%)	160 (9.8)	74 (9.0)	86 (10.5)	0.36
Smoking (%)	858 (52.3)	410 (50.0)	448 (54.6)	0.067
Medications at discharge				
ARB.ACEI (%)	516 (31.5)	261 (31.8)	255 (31.1)	0.79
CCB (%)	859 (52.4)	432 (52.7)	427 (52.1)	0.843
NIT (%)	1572 (95.9)	796 (97.1)	776 (94.6)	0.019
beta (%)	1472 (89.8)	734 (89.5)	738 (90.0)	0.807
statin (%)	1613 (98.4)	808 (98.5)	805 (98.2)	0.698
Aspirin (%)	1624 (99.0)	812 (99.0)	812 (99.0)	1
Clopidogrel (%)	1619 (98.7)	810 (98.8)	809 (98.7)	1
Ticagrelor (%)	288 (17.6)	132 (16.1)	156 (19.0)	0.136
Laboratory data				
CR	1.36 [1.18, 1.52]	1.34 [1.14, 1.47]	1.40 [1.23, 1.58]	<0.001
eGFR, mL/min/1.73 m ²	53.16 [46.58, 56.90]	53.57 [48.41, 57.12]	52.47 [44.23, 56.70]	<0.001
HbA1C, %	6.50 [5.90, 7.50]	6.40 [5.90, 7.40]	6.50 [5.90, 7.62]	0.006
Apoa1 , mmol/L	1.32 [1.14, 1.50]	1.41 [1.25, 1.62]	1.23 [1.08, 1.39]	<0.001
Apob , mmol/L	0.76 [0.63, 0.92]	0.64 [0.55, 0.74]	0.90 [0.78, 1.05]	<0.001
Apob/Apoa1	0.58 [0.47, 0.72]	0.47 [0.40, 0.52]	0.72 [0.64, 0.83]	<0.001
TC, mmol/L	3.96 [3.36, 4.74]	3.59 [3.15, 4.15]	4.42 [3.77, 5.18]	<0.001

TG, mmol/L	1.63 [1.21, 2.24]	1.44 [1.09, 1.94]	1.88 [1.41, 2.62]	<0.001
LDL, mmol/L	2.31 [1.82, 2.99]	1.98 [1.62, 2.40]	2.77 [2.22, 3.38]	<0.001
HDL, mmol/L	1.07 [0.89, 1.26]	1.16 [0.96, 1.38]	0.98 [0.84, 1.15]	<0.001
UA, mmol/L	406.88 [345.70, 484.60]	394.10 [334.38, 474.00]	419.00 [353.86, 500.08]	<0.001
HBG, g/dL	4.44 [4.03, 4.91]	4.40 [4.01, 4.89]	4.49 [4.04, 4.93]	0.146
PLT, K/uL	222.00 [182.00, 266.00]	217.50 [179.00, 261.00]	227.00 [186.00, 272.00]	0.001
WBC, K/uL	6.95 [5.86, 8.34]	6.78 [5.76, 8.16]	7.08 [5.97, 8.58]	0.003
Angiographic and PCI data				
Heavily calcified (%)	91 (5.5)	47 (5.7)	44 (5.4)	0.829
LM (%)	73 (4.5)	34 (4.1)	39 (4.8)	0.632
LAD (%)	643 (39.2)	340 (41.5)	303 (37.0)	0.069
LCX (%)	244 (14.9)	112 (13.7)	132 (16.1)	0.187
RCA (%)	642 (39.1)	313 (38.2)	329 (40.1)	0.448
Syntax	13.00 [7.00, 20.50]	13.00 [7.00, 20.00]	14.00 [8.00, 21.50]	0.154
MLD, mm	0.30 [0.04, 0.50]	0.30 [0.12, 0.50]	0.28 [0.03, 0.50]	0.009
TIMI (%)	0 336 (20.5)	157 (19.1)	179 (21.8)	0.321
	1 62 (3.8)	29 (3.5)	33 (4.0)	
	2 170 (10.4)	80 (9.8)	90 (11.0)	
	3 1072 (65.4)	554 (67.6)	518 (63.2)	
B2_C_lesion (%)	1218 (74.3)	606 (73.9)	612 (74.6)	0.778
Diffused Range (%)	949 (57.9)	477 (58.2)	472 (57.6)	0.841
Lesion length, mm	25.00 [15.00, 39.00]	25.00 [15.00, 39.00]	25.00 [15.00, 40.00]	0.981
Stent length, mm	28.00 [18.00, 41.25]	28.00 [18.00, 42.00]	28.00 [18.00, 41.00]	0.961
Stent (%)	1457 (88.8)	724 (88.3)	733 (89.4)	0.53
PCI Success (%)	1531 (93.4)	772 (94.1)	759 (92.6)	0.234

BMI, body mass index; WBC, white blood cell; HBG, hemoglobin; PLT, platelet; eGFR, estimated glomerular filtration rate; ACS, acute coronary syndrome; DM, diabetes mellitus; PCI, percutaneous coronary intervention; TG, triglycerides; TC, total cholesterol; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; MLD, minimal lumen diameter; TIMI, Thrombolysis In Myocardial Infarction; LM, left main

coronary artery; RCA, right coronary artery; LAD, left anterior descending branch; LCX, left circumflex branch; SYNTAX, synergy between percutaneous coronary intervention with TAXUS and cardiac surgery;

STable4 The relationship between ApoB and various clinical outcomes

Clinical Outcomes	adjusted HR (95%CI)	P
continue		
All-cause death	1.224(0.616-2.434)	0.564
CV-cause death	1.017(0.213-1.786)	0.374
Nonfatal MI	1.005(0.989-1.054)	0.186
Stroke	2.428(0.360-16.373)	0.362
Revascularization	1.824(0.922-3.607)	0.084
category		
All-cause death	1.013(0.738-1.393)	0.938
CV-cause death	1.042(0.588-1.610)	0.805
Nonfatal MI	1.244(0.720-2.148)	0.434
Stroke	1.797(0.654-4.937)	0.256
Revascularization	1.388(0.976-1.975)	0.068

Adjusted for sex, age, BMI, ACS, DM, HBP, family history CAD, smoking, Lesion length, MLD, stent, stent length, eGFR, TG, ARB/ACEI, CCB, aspirin, clopidogrel, statin. TG, triglycerides; BMI, body mass index; eGFR, estimated glomerular filtration rate; ACS, acute coronary syndrome; DM, diabetes mellitus; MLD, minimal lumen diameter; CAD, coronary artery disease; HBP, hypertension; CCB, calcium channel blockers; ARB/ACEI, angiotensin II receptor blockers/angiotensin converting enzyme inhibitors.

STable5 the relationship between ApoA1 and various clinical outcomes

Clinical Outcomes	adjusted HR (95%CI)	P
continue		
All-cause death	0.234(0.125-0.437)	0.001
CV-cause death	0.181(0.072-0.454)	0.001
Nonfatal MI	0.738(0.259-2.094)	0.568
Stroke	0.278(0.041-1.876)	0.189
Revascularization	0.919(0.589-1.435)	0.533
category		
All-cause death	0.467(0.331-0.659)	0.001
CV-cause death	0.390(0.230-0.660)	0.001
Nonfatal MI	0.742(0.428-1.284)	0.286
Stroke	0.653(0.250-1.704)	0.384
Revascularization	0.904(0.581-1.404)	0.653

Adjusted for sex, age, BMI, ACS, DM, HBP, family history CAD, smoking, Lesion length, MLD, stent, stent length, eGFR, TG, ARB/ACEI, CCB, aspirin, clopidogrel, statin. TG, triglycerides; BMI, body mass index; eGFR, estimated glomerular filtration rate; ACS, acute coronary syndrome; DM, diabetes mellitus; MLD, minimal lumen diameter; CAD, coronary artery disease; HBP, hypertension; CCB, calcium channel blockers; ARB/ACEI, angiotensin II receptor blockers/angiotensin converting enzyme inhibitors.

STable6 the relationship between ApoB/ApoA1 and various clinical outcomes

Clinical Outcomes	adjusted HR (95%CI)	P
continue		
All-cause death	2.839(1.516-5.318)	0.001
CV-cause death	2.143(0.841-5.465)	0.11
Nonfatal MI	1.023(0.991-1.056)	0.16
Stroke	5.655(1.056-17.327)	0.037
Revascularization	1.342(0.637-2.822)	0.439
category		
All-cause death	1.346(1.072-1.864)	0.007
CV-cause death	1.203(0.745-1.943)	0.449
Nonfatal MI	1.017(0.592-1.745)	0.952
Stroke	1.486(0.566-3.905)	0.421
Revascularization	1.232(0.871-1.743)	0.239

Adjusted for sex, age, BMI, ACS, DM, HBP, family history CAD, smoking, Lesion length, MLD, stent, stent length, eGFR, TG, ARB/ACEI, CCB, aspirin, clopidogrel, statin. TG, triglycerides; BMI, body mass index; eGFR, estimated glomerular filtration rate; ACS, acute coronary syndrome; DM, diabetes mellitus; MLD, minimal lumen diameter; CAD, coronary artery disease; HBP, hypertension; CCB, calcium channel blockers; ARB/ACEI, angiotensin II receptor blockers/angiotensin converting enzyme inhibitors.

STable7 The relationship between various Apos and MACE risks in the impaired kidney function patients exclude CKD stage 5 and dialysis patients

	robust HR (95%CI)	P	adjusted HR (95%CI)	P
continue				
ApoB	1.565(1.018-2.404)	0.031	1.584(1.086-2.543)	0.037
ApoA1	0.425(0.278-0.649)	0.001	0.496(0.319-0.771)	0.002
ApoB/ApoA1	2.564(1.659-3.961)	0.001	2.190(1.377-3.482)	0.001
category				
ApoB	1.197(1.002-1.492)	0.032	1.222(1.003-1.542)	0.046
ApoA1	0.698(0.559-0.874)	0.002	0.734(0.581-0.927)	0.009
ApoB/ApoA1	1.366(1.095-1.706)	0.006	1.318(1.045-1.663)	0.02

Adjusted for sex, age, BMI, ACS, DM, HBP, family history CAD, smoking, Lesion length, MLD, stent, stent length, eGFR, TG, ARB/ACEI, CCB, aspirin, clopidogrel, statin. TG, triglycerides; BMI, body mass index; eGFR, estimated glomerular filtration rate; ACS, acute coronary syndrome; DM, diabetes mellitus; MLD, minimal lumen diameter; CAD, coronary artery disease; HBP, hypertension; CCB, calcium channel blockers; ARB/ACEI, angiotensin II receptor blockers/angiotensin converting enzyme inhibitors.