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SUPPLEMENTARY DATA

Table 1 of the supplementary data. Correlation between apoB and clinical CV risk factors

Variables	Correlation coefficient	*P*
Age, y	−0.070	< .001
BMI, kg/m^2	0.064	< .001
SBP, mmHg	0.088	< .001
DBP, mmHg	0.099	< .001
LVEF, %	0.023	.035
Apo A1, g/L	0.115	< .001
TC, mmol/L	0.891	< .001
TG, mmol/L	0.290	< .001
LDL-C, mmol/L	0.901	< .001
HDL-C, mmol/L	0.030	.005
Non-HDL-C, mmol/L	0.917	< .001
hsCRP, mg/L	0.133	< .001
FPG, mmol/L	0.069	< .001
HbA1c, %	0.072	< .001
Serum creatinine, µmol/L	−0.001	.892
eGFR, mL/min/1.73 m^2	−0.028	.010
Lp(a), mg/dL	0.147	< .001

apoA1, apolipoprotein A1; apoB, apolipoprotein B; BMI, body mass index; CV, cardiovascular; DBP; diastolic blood pressure; eGFR, estimated glomerular filtration rate; FPG, fasting plasma glucose; HbA1c, hemoglobin A1c; HDL-C, high-density lipoprotein cholesterol; hsCRP, high sensitivity C-reactive protein;

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LDL-C, low-density lipoprotein cholesterol; Lp(a), lipoprotein(a); LVEF, left ventricular ejection fraction; SBP, systolic blood pressure; TC, total cholesterol; TG, triglycerides.

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Table 2 of the supplementary data. Rates of 3-year CV outcomes stratified by apoB quintiles

Endpoints	Q1	Q2	Q3	Q4	Q5	*P*
CV events[a]	64 (3.7)	51 (2.7)	30 (1.9)	35 (2.1)	52 (3.0)	.007
MACE[b]	55 (3.2)	48 (2.6)	24 (1.5)	25 (1.5)	45 (2.6)	.002
All-cause death	42 (2.4)	40 (2.1)	18 (1.1)	32 (1.9)	29 (1.7)	.065
CV death	30 (1.7)	28 (1.5)	10 (0.6)	13 (0.8)	24 (1.4)	.011

CV, cardiovascular; MACE, major adverse cardiovascular event; MI, myocardial infarction.

Values are presented as No. (%).

[a]CV events were defined as a composite of CV death, nonfatal MI, and nonfatal stroke.

[b]MACE was defined as a composite of CV death and nonfatal MI.

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Table 3 of the supplementary data. Variable assignments for Cox LASSO regression models and risk factors selected by Cox LASSO regression model

Variables	Risk factors	Assignment	Coefficients[a] for selected factors		
			CV events[b]	MACE[c]	CV death
X_1	Age	Continuous variable	0.0503	0.0536	0.0653
X_2	Male	Yes = 1, no = 0			
X_3	BMI	Continuous variable	-0.0052	-0.0047	-0.0561
X_4	Family history of CAD	Yes = 1, no = 0			
X_5	Previous MI	Yes = 1, no = 0	0.0391	0.0986	
X_6	Prior revascularization	Yes = 1, no = 0	0.1845	0.2351	
X_7	Hypertension	Yes = 1, no = 0			
X_8	SBP	Continuous variable			
X_9	DBP	Continuous variable			−0.0022
X_{10}	Diabetes	Yes = 1, no = 0			
X_{11}	Previous stroke	Yes = 1, no = 0			0.0841
X_{12}	Current smoker	Yes = 1, no = 0		−0.0980	
X_{13}	PAD	Yes = 1, no = 0	0.2850	0.4094	0.3617
X_{14}	LVEF	Continuous variable	−0.0235	−0.0258	−0.0385
X_{15}	apoB	Continuous variable			
X_{16}	apoA1	Continuous variable	−0.1742	−0.2637	−0.4836
X_{17}	Lp(a)	Continuous variable			
X_{18}	TG	Continuous variable	−0.0040	−0.0678	
X_{19}	HDL-C	Continuous variable			
X_{20}	hsCRP	Continuous variable		0.0024	
X_{21}	FPG	Continuous variable			
X_{22}	HbA1c	Continuous variable	0.0975	0.1265	
X_{23}	Creatinine	Continuous variable	0.0037	0.0036	0.0077
X_{24}	eGFR	Continuous variable			
X_{25}	SYNTAX score	Continuous variable			
X_{26}	Left main disease	Yes = 1, no = 0		0.0843	

X_{27}	Three-vessel disease	Yes = 1, no = 0			
X_{28}	Type B2/C lesion	Yes = 1, no = 0			
X_{29}	CTO lesion	Yes = 1, no = 0			0.2003
X_{30}	Ostial lesion	Yes = 1, no = 0			
X_{31}	Nitrates	Yes = 1, no = 0	0.0507	0.3407	
X_{32}	Beta-blocker	Yes = 1, no = 0			
X_{33}	ACEI/ARB	Yes = 1, no = 0			
X_{34}	Clopidogrel	Yes = 1, no = 0	0.1712	0.2125	0.5684
X_{35}	Aspirin	Yes = 1, no = 0			

ACEI, angiotensin-converting enzyme inhibitor; apoA1, apolipoprotein A1; apoB, apolipoprotein B; ARB, angiotensin II receptor blocker; BMI, body mass index; CAD, coronary artery disease; CV, cardiovascular; DBP; diastolic blood pressure; CTO, chronic total occlusion; eGFR, estimated glomerular filtration rate; FPG, fasting plasma glucose; HbA1c, hemoglobin A1c; HDL-C, high-density lipoprotein cholesterol; hsCRP, high sensitivity C-reactive protein; LASSO, least absolute shrinkage and selection operator; Lp(a), lipoprotein(a); LDL-C, low-density lipoprotein cholesterol; LVEF, left ventricular ejection fraction; MI, myocardial infarction; PAD, peripheral artery disease; SBP, systolic blood pressure; TC, total cholesterol; SYNTAX, synergy between PCI with taxus and cardiac surgery; TG, triglycerides.

[a] The “Coefficients” refers to the regression coefficients obtained from the Cox regression model. To facilitate interpretation, it is important to note that the hazard ratio (HR) can be derived from these coefficients by using the transformation exp (Coefficient) = HR. This means that a positive coefficient indicates an increased hazard (HR > 1), while a negative coefficient indicates a decreased hazard (HR < 1).

[b] CV events were defined as a composite of CV death, nonfatal MI, and nonfatal stroke.

[c] MACEs were defined as a composite of CV death, and nonfatal MI.

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Table 4 of the supplementary data. Multivariable Cox proportional adjusted variables selected from the LASSO regression

Endpoints[a]	Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5		***P* for trend**
	HR (95%CI)	*P*	HR (95%CI)	*P*	HR (95%CI)	*P*	HR (95%CI)	*P*	HR (95%CI)	*P*	
CV events[b]	1.77 (1.14-2.75)	.011	1.41 (0.90-2.22)	.135	Reference	NA	1.17 (0.72-1.90)	.534	1.84 (1.16-2.90)	.009	.700
MACEs[c]	1.84 (1.13-3.01)	.015	1.66 (1.01-2.71)	.045	Reference	NA	1.06 (0.61-1.87)	.828	2.05 (1.24-3.39)	.005	.608
CV death	2.21 (1.07-4.55)	.032	2.27 (1.10-4.69)	.026	Reference	NA	1.26 (0.55-2.88)	.585	2.51 (1.20-5.27)	.015	.602

apoB, apolipoprotein B; CV, cardiovascular; LASSO, least absolute shrinkage and selection operator; MACE, major adverse cardiac events.

[a]HRs with 95% CIs were estimated by Cox proportional hazard models

[b]CV events were defined as a composite of CV death, nonfatal MI, and nonfatal stroke.

[c]MACEs were defined as a composite of CV death, and nonfatal MI.

Table 5 of the supplementary data. Cox regression analysis for apoB residual[a] and clinical outcomes

Endpoints[b]	Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5	
	HR (95%CI)	*P*	HR (95%CI)	*P*	HR (95%CI)	*P*	HR (95%CI)	*P*	HR (95%CI)	*P*
CV events[c]										
Model 1[d]	1.73 (1.13-2.64)	.011	1.39 (0.90-2.17)	.142	Reference	NA	1.26 (0.80-2.00)	.323	1.70 (1.09-2.65)	.018
Model 2 [e]	1.71 (1.11-2.62)	.015	1.38 (0.88-2.15)	.159	Reference	NA	1.22 (0.77-1.93)	.408	1.77 (1.11-2.84)	.017
MACEs[f]										
Model 1	1.94 (1.22-3.10)	.005	1.54 (0.95-2.52)	.082	Reference	NA	1.45 (0.87-2.40)	.151	1.69 (1.02-2.78)	.040
Model 2	1.89 (1.17-3.04)	.009	1.52 (0.93-2.49)	.093	Reference	NA	1.40 (0.84-2.32)	.197	1.82 (1.07-3.09)	.027
CV death										
Model 1	1.35 (0.74-2.44)	.326	1.28 (0.70-2.35)	.423	Reference	NA	0.82 (0.41-1.65)	.577	1.34 (0.71-2.53)	.374
Model 2	1.23 (0.67-2.27)	.499	1.29 (0.70-2.37)	.419	Reference	NA	0.76 (0.38-1.53)	.440	1.32 (0.67-2.63)	.424

95%CI, 95% confidence interval; apoB, apolipoprotein B; ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin II receptor blocker; BMI, body mass index; CTO, chronic total occlusion; CV, cardiovascular; eGFR, estimated glomerular filtration rate; HDL-C, high-density lipoprotein cholesterol; HR, hazard ratio; hsCRP, high sensitivity C-reactive protein; LDL-C, low-density lipoprotein cholesterol; Lp(a), lipoprotein(a); LVEF, left ventricular ejection fraction; MACE, major adverse cardiac events; MI, myocardial infarction; PAD, peripheral artery disease; TG, triglycerides.

[a]The residual of apoB was constructed after regressing apoB on LDL-C.

[b]HRs with 95% CIs were estimated by Cox proportional hazard models

[c]CV events were defined as a composite of CV death, nonfatal MI, and nonfatal stroke.

[d]Model 1 adjusted for age and male sex.

[e]Model 2 adjusted for Model 1, BMI, previous MI, previous revascularization, hypertension, diabetes, previous stroke, current smoking, PAD, LVEF, TG, HDL-C, hsCRP, eGFR, Lp(a), 3-vessel disease, CTO lesions, aspirin use, clopidogrel use, and ACEI/ARB use.

[f]MACEs were defined as a composite of CV death, and nonfatal MI.

Table 6 of the supplementary data. Competing risk analysis considering risks of non-CV deaths

Endpoints[a]	Quintile 1		Quintile 2		Quintile 3		Quintile 4		Quintile 5	
	HR (95%CI)	*P*	HR (95%CI)	*P*	HR (95%CI)	*P*	HR (95%CI)	*P*	HR (95%CI)	*P*
CV events[b]										
Model 1[d]	2.00 (1.30-3.09)	.002	1.47 (0.94-2.31)	.093	Reference	-	1.11 (0.68-1.81)	.670	1.64 (1.04-2.56)	.032
Model 2[e]	1.86 (1.21-2.87)	.005	1.43 (0.91-2.24)	.120	Reference	-	1.13 (0.70-1.84)	.620	1.78 (1.14-2.79)	.012
Model 3[f]	1.89 (1.20-2.97)	.006	1.46 (0.93-2.30)	.100	Reference	-	1.16 (0.71-1.89)	.560	1.80 (1.14-2.84)	.012
MACEs[c]										
Model 1	2.14 (1.33-3.47)	.002	1.73 (1.06-2.83)	.028	Reference	-	0.99 (0.57-1.74)	.980	1.77 (1.08-2.90)	.024
Model 2	1.99 (1.23-3.21)	.005	1.68 (1.03-2.74)	.038	Reference	-	1.01 (0.58-1.77)	.970	1.93 (1.18-3.18)	.009
Model 3	1.95 (1.17-3.24)	.010	1.70 (1.03-2.78)	.037	Reference	-	1.05 (0.60-1.85)	.860	2.03 (1.23-3.36)	.006
CV death										
Model 1	2.80 (1.37-5.73)	.005	2.42 (1.18-4.99)	.016	Reference	-	1.24 (0.54-2.83)	.610	2.26 (1.08-4.74)	.030
Model 2	2.47 (1.22-5.02)	.012	2.30 (1.12-4.74)	.024	Reference	-	1.28 (0.56-2.91)	.560	2.59 (1.23-5.43)	.012
Model 3	2.45 (1.17-5.13)	.018	2.38 (1.15-4.93)	.019	Reference	-	1.25 (0.55-2.84)	.600	2.43 (1.16-5.09)	.019

95%CI, 95% confidence interval; apoB, apolipoprotein B; ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin II receptor blocker; BMI, body mass index; CTO, chronic total occlusion; CV, cardiovascular; eGFR, estimated glomerular filtration rate; HDL-C, high-density lipoprotein cholesterol; HR, hazard ratio; hsCRP = high sensitivity C-reactive protein; LDL-C, low-density lipoprotein cholesterol; Lp(a), lipoprotein(a); LVEF, left ventricular ejection fraction; MACE, major adverse cardiac events; MI, myocardial infarction; PAD, peripheral artery disease; TG, triglyceride.[a]HRs with 95% CIs were estimated by Cox proportional hazard models.

[b]CV events were defined as a composite of CV death, nonfatal MI, and nonfatal stroke.

[c]MACEs were defined as a composite of CV death, and nonfatal MI.

[d]Model 1 unadjusted.

[e]Model 2 adjusted for age and male sex.

[f]Model 3 adjusted for Model 2 + BMI, previous MI, previous revascularization, hypertension, diabetes, previous stroke, current smoking, PAD, LVEF, TG, HDL-C, hsCRP, eGFR, Lp(a), 3-vessel disease, CTO lesions, aspirin use, clopidogrel use, and ACEI/ARB use.

Table 7 of the supplementary data. Subgroup analysis for the association of apoB quintiles with CV events

	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5	*P* for interaction
	HR (95%CI)	HR (95%CI)	HR (95%CI)	HR (95%CI)	HR (95%CI)	
Age, y[a]						.394
<65	0.98 (0.52-1.85)	1.04 (0.56-1.91)	Reference	0.86 (0.44-1.68)	1.73 (0.96-3.11)	
≥65	3.37 (1.71-6.66)	2.23 (1.10-4.52)	Reference	1.69 (0.80-3.56)	1.93 (0.91-4.10)	
Sex[b]						.537
Male	1.76 (1.08-2.86)	1.32 (0.80-2.18)	Reference	1.05 (0.60-1.83)	1.74 (1.03-2.94)	
Female	2.13 (0.70-6.54)	2.01 (0.69-5.86)	Reference	1.55 (0.52-4.61)	2.15 (0.76-6.07)	
Hypertension[c]						.744
Absent	1.76 (0.71-4.35)	1.22 (0.49-3.03)	Reference	0.63 (0.20-1.95)	1.71 (0.66-4.42)	
Present	2.00 (1.19-3.35)	1.58 (0.93-2.67)	Reference	1.38 (0.79-2.39)	1.92 (1.13-3.27)	
Diabetes[d]						.425
Absent	2.32 (1.23-4.36)	1.45 (0.75-2.80)	Reference	1.06 (0.51-2.17)	1.87 (0.96-3.65)	
Present	1.53 (0.81-2.88)	1.42 (0.76-2.65)	Reference	1.26 (0.65-2.46)	1.68 (0.89-3.18)	
LDL-C levels[e,f]						.066
≤2.25 mmol/L	1.98 (1.05-3.73)	1.63 (0.87-3.05)	Reference	1.94 (0.72-5.18)	-	
>2.25 mmol/L	2.41 (0.55-10.52)	1.23 (0.51-2.97)	Reference	0.94 (0.52-1.73)	1.51 (0.85-2.69)	

95%CI, 95% confidence interval; apoB, apolipoprotein B; ACEI, angiotensin-converting enzyme inhibitor; ARB, angiotensin II receptor blocker; BMI, body mass index; CTO, chronic total occlusion; CV, cardiovascular; eGFR, estimated glomerular filtration rate; HDL-C, high-density lipoprotein cholesterol; HR, hazard ratio;

hsCRP = high sensitivity C-reactive protein; LDL-C, low-density lipoprotein cholesterol; Lp(a), lipoprotein(a); LVEF, left ventricular ejection fraction; MACE, major adverse cardiac events; MI, myocardial infarction; PAD, peripheral artery disease; TG, triglyceride.[a] Models adjusted for male sex, BMI, previous MI, previous revascularization, hypertension, diabetes, previous stroke, current smoking, PAD, LVEF, TG, HDL-C, hsCRP, eGFR, Lp(a), 3-vessel disease, CTO lesions, aspirin use, clopidogrel use, and ACEI/ARB use.

[b]Models adjusted for age, BMI, previous MI, previous revascularization, hypertension, diabetes, previous stroke, current smoking, PAD, LVEF, TG, HDL-C, hsCRP, eGFR, Lp(a), 3-vessel disease, CTO lesions, aspirin use, clopidogrel use, and ACEI/ARB use.

[c]Models adjusted for age, male sex, BMI, previous MI, previous revascularization, diabetes, previous stroke, current smoking, PAD, LVEF, TG, HDL-C, hsCRP, eGFR, Lp(a), 3-vessel disease, CTO lesions, aspirin use, clopidogrel use, and ACEI/ARB use.

[d]Models adjusted for age, male sex, BMI, previous MI, previous revascularization, hypertension, previous stroke, current smoking, PAD, LVEF, TG, HDL-C, hsCRP, eGFR, Lp(a), 3-vessel disease, CTO lesions, aspirin use, clopidogrel use, and ACEI/ARB use.

[e]Models adjusted for age, male sex, BMI, previous MI, previous revascularization, hypertension, diabetes, previous stroke, current smoking, PAD, LVEF, TG, HDL-C, hsCRP, eGFR, Lp(a), 3-vessel disease, CTO lesions, aspirin use, clopidogrel use, and ACEI/ARB use.

[f]We used the median value of LDL-C as the cut-off point.

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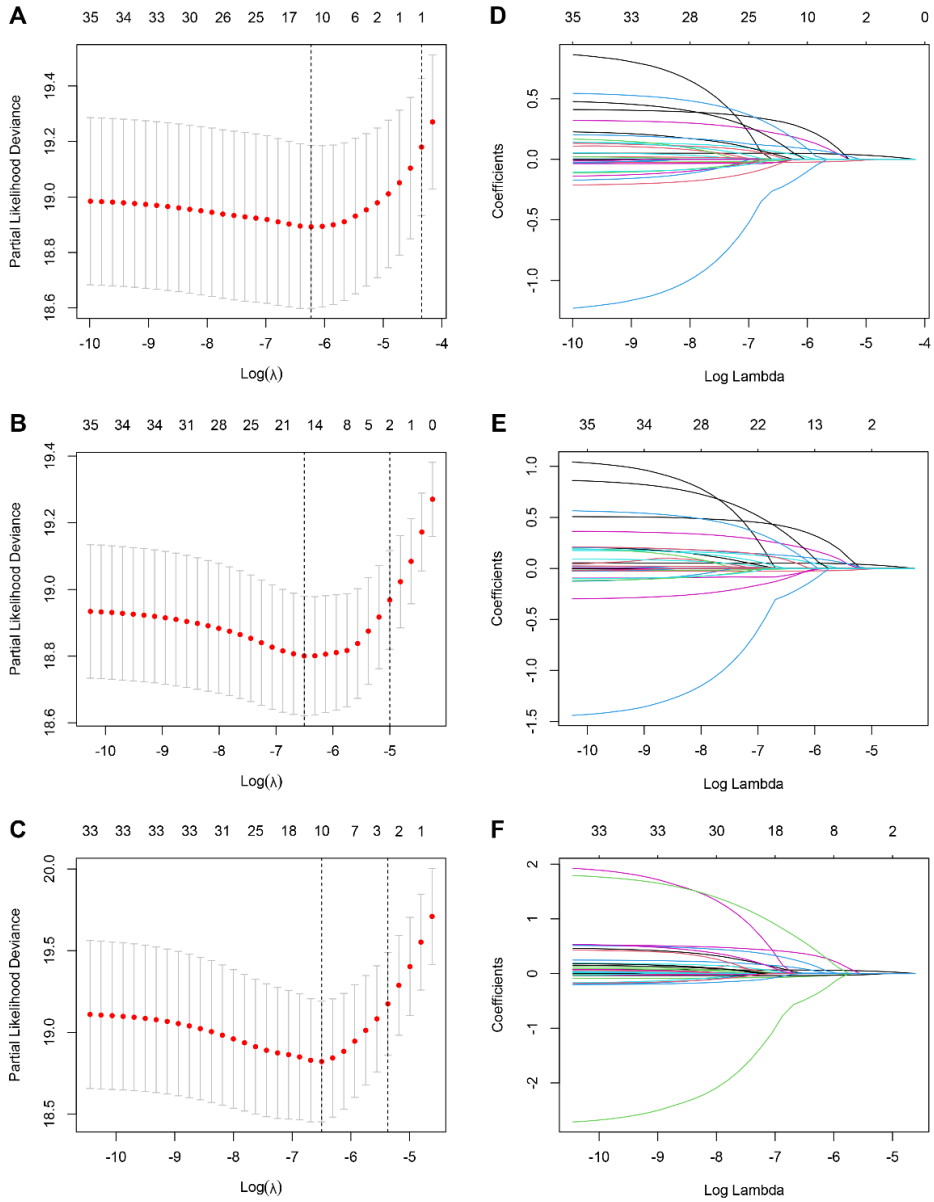
Figure 1 of the supplementary data. LASSO coefficient path and cross-validation plots for (A&D) CV events, (B&E) MACEs, and (C&F) CV death.



CV, cardiovascular; LASSO, least absolute shrinkage and selection operator; MACE, major adverse cardiac events.

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Correcciones a la figura

Cambiar “Log Lambda” a “Log lambda”

Cambiar guiónes a signos menos

Cambiar “Partial Likelihood Devidance” a “Partial likelihood deviance”

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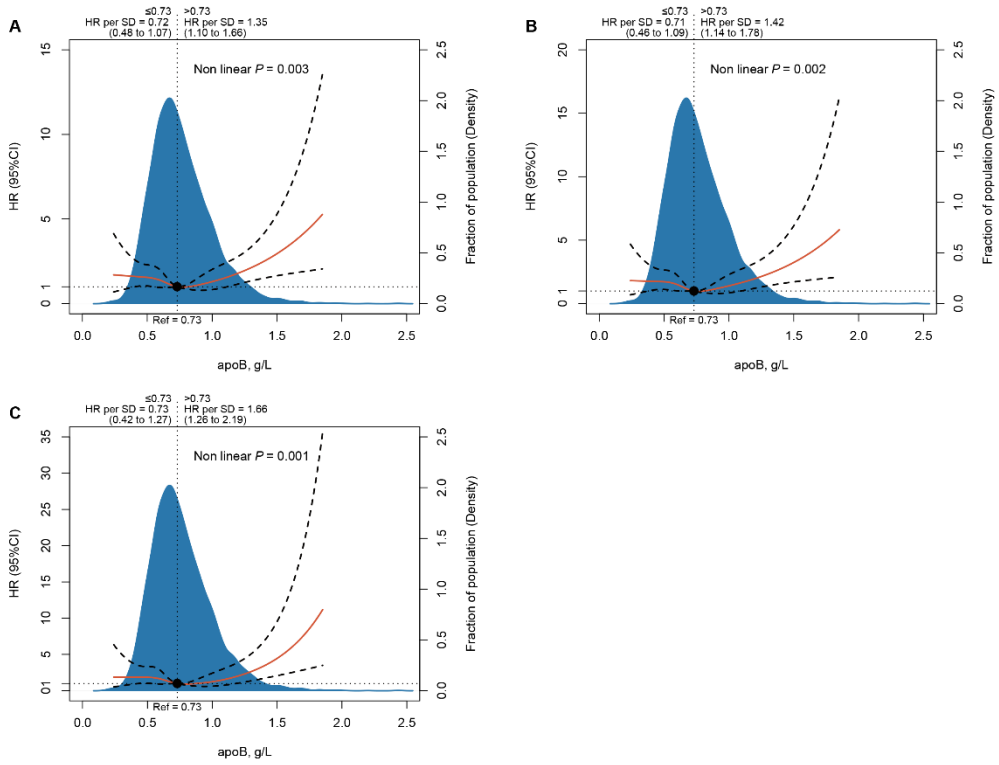
Figure 2 of the supplementary data. Restricted cubic spline analysis for apoB levels and (A) CV events, (B) MACE, and (C) CV death.



95%CI, 95% confidence interval; apoB, apolipoprotein B; ARB, angiotensin II receptor blocker; BMI, body mass index; CV, cardiovascular; MACE, major adverse cardiac events; MI, myocardial infarction.

CV events included CV death, nonfatal MI, and nonfatal stroke.

MACE included CV death and nonfatal MI.

All restricted cubic spline analyses were adjusted for variables selected from the LASSO regression (see table 3 of the supplementary data).

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Correcciones a la figura

Poner espacio a ambos lados de símbolos, p ej <

Indicar valores de p en formato REC

Cambiar "Non linear" a "Nonlinear"