

Table S1. Variance inflation factor between variables

Variables	VIF	Variables	VIF
Age	1.262495798	Types of surgery	1.279182569
Male	1.137518334	High-risk surgery	1.645434629
BMI	1.110517265	Intraoperative hypotension	1.022489569
Hypertension	1.426963909	Intraoperative bradycardia	1.073516949
Diabetes	1.215831502	Operation time	1.49440077
Atrial fibrillation	1.08363502	β -blocker	1.363271264
CHF	1.066767467	CCB	1.313812212
Elevated glucose level	1.091954387	Insulin	1.339941427
Hyperlipidemia	1.561253313	Anticoagulant	1.29616766
Carotid artery stenosis	1.030836388	Antiplatelet drug	1.678720755
Valvular heart disease	1.093683702	Statin	1.535788096
COPD	1.05155075	Anti-diabetic drug	1.298573733
Renal insufficiency	1.207420173	HbA1c	2.042002261
Hepatic insufficiency	1.012983409	Admission blood glucose	1.732248439
Prior stroke	1.014444553	Hemoglobin	1.290894613
Prior MI	1.118734489	Platelets	1.205055418
Cancer	1.118839216	WBC	1.248027912
ASA classification	1.543565121	Albumin	1.319521023
Emergency	1.136723285	Creatinine	1.44551196

ASA, American Society of Anesthesiologists; BMI, body mass index; CCB, calcium channel blocker; CHF, chronic heart failure; COPD, chronic obstructive pulmonary disease; HbA1c, glycated hemoglobin; ICU, intensive care unit; MI, myocardial infarction; SHR, stress hyperglycemia ratio; WBC, white blood cell.

Table S2. Baseline characteristics of the MACE and Non-MACE groups

Variables	Non-MACE(n=5544)	MACE(n=65)	χ^2/F	p-value
SHR	0.97 (0.84-1.13)	1.20 (0.95-1.70)	29.027	<0.001
Demographics				
Age (yr), median (IQR)	65.00 (55.00-70.00)	70.00 (50.00-75.00)	5.468	0.019
Male, n (%)	2641 (47.64%)	39 (60.00%)	3.936	0.047
BMI (kg/m2), median (IQR)	24.09 (21.67-26.49)	23.12 (20.96-24.90)	6.798	0.009
Comorbidities, n (%)				
Diabetes	145 (2.62%)	1 (1.54%)	0.294	0.588
Elevated glucose level	36 (0.65%)	0 (0.00%)	0.425	0.515
Hypertension	168 (3.03%)	1 (1.54%)	0.489	0.484
Hyperlipidemia	176 (3.17%)	2 (3.08%)	0.002	0.964
Carotid artery stenosis	12 (0.22%)	0 (0.00%)	0.141	0.707
Valvular heart disease	18 (0.32%)	1 (1.54%)	2.804	0.094
Atrial fibrillation	27 (0.49%)	1 (1.54%)	1.430	0.232
COPD	11 (0.20%)	1 (1.54%)	5.404	0.020
Renal insufficiency	91 (1.64%)	1 (1.54%)	0.004	0.948
Hepatic Insufficiency	1 (0.02%)	0 (0.00%)	0.012	0.914
Prior stroke	1 (0.02%)	0 (0.00%)	0.012	0.914
Prior MI	52 (0.94%)	0 (0.00%)	0.615	0.433
Cancer	296 (5.34%)	1 (1.54%)	1.851	0.174
Surgical conditions				
Types of surgery, n (%)			50.026	<0.001

Gastrointestinal surgery	1206 (21.75%)	36 (55.38%)		
Orthopedic Surgery	2995 (54.02%)	12 (18.46%)		
Neurosurgery	379 (6.84%)	5 (7.69%)		
Obstetric and gynecological surgery	184 (3.32%)	1 (1.54%)		
Otolaryngology Surgery	133(2.40%)	1 (1.54%)		
Thoracic surgery	537 (9.69%)	8 (12.31%)		
Urology surgery	110 (1.98%)	2 (3.08%)		
Types of Anesthesia, n (%)				
General anesthesia	4185 (75.49%)	60 (92.31%)	9.877	0.002
Neuraxial anesthesia	1359 (24.51%)	5 (7.69%)		
ASA classification, n (%)			126.918	<0.001
<3	4596 (82.90%)	19 (29.23%)		
≥3	948 (17.10%)	46 (70.77%)		
High-risk surgery ^a , n (%)	1743 (31.44%)	44 (67.69%)	38.895	<0.001
Operation time (min), median (IQR)	110.00 (70.00-210.00)	210.00 (100.00-320.00)	20.442	<0.001
Intraoperative hypotension, n (%)	876 (15.80%)	4 (6.15%)	4.520	0.033
intraoperative bradycardia, n (%)	852 (15.37%)	20 (30.77%)	11.607	<0.001
Medication history, n (%)				
β-blocker	610 (11.00%)	11 (16.92%)	2.287	0.130
Statin	986 (17.78%)	8 (12.31%)	1.322	0.250
CCB	1031 (18.60%)	19 (29.23%)	4.775	0.029
Insulin	501 (9.04%)	24 (36.92%)	58.890	<0.001
Anti-diabetic drug	566 (10.21%)	6 (9.23%)	0.067	0.796
Anticoagulant	445 (8.03%)	12 (18.46%)	9.348	0.002
Antiplatelet drug	454 (8.19%)	9 (13.85%)	2.715	0.099
Laboratory tests, median (IQR)				

HbA1c (%)	5.80 (5.40-6.50)	6.30 (5.50-7.40)	6.306	0.012
Admission blood glucose (mmol/l)	6.39 (5.33-8.11)	9.06 (6.67-14.83)	39.903	<0.001
Hemoglobin (g/dl)	12.70 (11.50-14.10)	11.30 (9.70-13.02)	7.236	<0.001
Albumin (g/dl)	4.10 (3.80-4.30)	3.00 (2.50-3.70)	101.264	<0.001
WBC (10 ⁹ /l)	6.34 (5.14-7.84)	8.31 (7.00-12.18)	32.178	<0.001
Platelets (10 ⁹ /l)	231.00 (198.00-271.00)	176.00 (90.00-243.53)	21.183	<0.001
Creatinine (mg/dl)	0.81 (0.66-0.99)	1.16 (0.78-1.64)	26.101	<0.001
ICU admission, n (%)	1053 (18.99%)	48 (73.85%)	122.531	<0.001
Length of hospital stay (day), median (IQR)	10.00 (6.00-14.00)	11.00 (3.00-15.00)	1.497	0.221

ASA, American Society of Anesthesiologists; BMI, body mass index; CCB, calcium channel blocker; COPD, chronic obstructive pulmonary disease; HbA1c, glycated hemoglobin; ICU, intensive care unit; IQR, interquartile range; MACE, major adverse cardiac event; MI, myocardial infarction; SHR, stress hyperglycemia ratio; WBC, white blood cell.

^aHigh-risk surgeries included intraperitoneal, intrathoracic, and suprainguinal vascular surgeries.

Table S3. Hyperparameter of the ten model

Model	Hyperparameter	Tuning scope	Optimal hyperparameter
Logistic	C	(0.01, 100)	0.099
	penalty	['l1', 'l2']	l1
	solver	['liblinear', 'saga']	liblinear
RF	n_estimators	(100, 1000)	500
	max_features	['sqrt', 'log2']	sqrt
	mtry	(2,6)	4
	splitrule	['gini', 'extratrees']	gini
	min.node.size	(1,9)	3
	min_samples_leaf	(1, 10)	3
XGBoost	n_estimators	(100, 1000)	100
	max_depth	(3, 10)	9
	learning_rate	(0.01, 0.3)	0.1
	subsample	(0.5, 1)	0.7
	colsample_bytree	(0.5, 1)	0.5
LightGBM	n_estimators	(100, 1000)	300
	max_depth	(3, 10)	3
	learning_rate	(0.01, 0.3)	0.1
	subsample	(0.5, 1)	0.5
	colsample_bytree	(0.5, 1)	0.5
	min_child_weight	(0.001, 0.1)	0.1
	num_leaves	(31, 127)	31
CatBoost	iterations	(100, 300)	300

	depth	(3, 6)	3
	learning_rate	(0.01, 0.1)	0.1
	l2_leaf_reg	(1, 3)	1
	border_count	(32, 50)	50
GBM	n.trees	(100, 500)	300
	interaction.depth	(1, 5)	3
	shrinkage	(0.01, 0.2)	0.1
	n.minobsinnode	(10, 20)	10
KNN	n_neighbors	(3, 15)	11
SVM	C	(0.01, 0.1, 1, 10, 100)	1
	sigma	(0.001, 0.01, 0.1, 1)	0.1
DT	mtry	(2, 4, 6, 8, 10)	6
	splitrule	(gini, extratrees)	extratrees
	min.node.size	(1, 5, 10)	1
MLP	size	(50, 100)	50
	decay	(0.0001, 0.01, 0.1)	0.1

RF, Random Forest; XGBoost, Extreme Gradient Boosting; LightGBM, Light Gradient Boosting Machine; CatBoost, Categorical Boosting; GBM, Gradient Boosting Machine; KNN, K-Nearest Neighbors; SVM, Support Vector Machine; DT, Decision Tree; MLP, Multilayer Perceptron.

Table S4. Multivariate Cox regression analysis of the association between SHR and perioperative MACE in patients with complete data

Variables	Model 1			Model 2			Model 3		
	HR (95% CI)	P value	P for trend	HR (95% CI)	P value	P for trend	HR (95% CI)	P value	P for trend
MACE									
Continuous variable per SD increase	2.03(1.78,2.32)	<0.001		2.00(1.74,2.30)	<0.001		1.58(1.38,1.81)	<0.001	
Tertile									
Tertile 1 (n = 1870)	Ref		<0.001	Ref		<0.001	Ref		0.001
Tertile 2 (n = 1870)	0.81 (0.29,2.23)	0.680		0.81 (0.29, 2.23)	0.683		0.99(0.36, 2.74)	0.987	
Tertile 3 (n = 1869)	4.10 (1.90,8.88)	<0.001		3.97 (1.83, 8.60)	<0.001		3.23 (1.49, 7.02)	0.003	

Model 1: unadjusted.

Model 2: adjusted for age, sex, and BMI.

Model 3: adjusted for age, sex, BMI, ASA classification, emergency status, type of surgery, type of anesthesia, diabetes status, hypertension status, hyperlipidemia status, carotid artery stenosis status, valvular heart disease status, atrial fibrillation status, chronic obstructive pulmonary disease (COPD) status, renal insufficiency status, hepatic insufficiency status, prior MI status, IOH status, β -blocker status, insulin status and antidiabetic drug status.

CI, confidence interval; HR, hazard ratio; MACE, major adverse cardiac event; SD, standard deviation; SHR stress hyperglycemia ratio.

Table S5. Comparison of baseline characteristics before and after propensity score matching

Variables	Overall population					p value	SMD	Propensity score matched population					p value	SMD
	Tertile (n = 1870)	1 (n = 1870)	Tertile (n = 1869)	2 (n = 1869)	3 (n = 1869)			Tertile (n = 394)	1 (n = 394)	Tertile (n = 394)	2 (n = 394)	3 (n = 394)		
SHR, median (IQR)	0.80 (0.73-0.84)	0.97 (0.93-1.01)	1.25 (1.14-1.45)	<0.001	2.625	0.86 (0.82-0.87)	0.92 (0.90-0.95)	1.10 (1.08-1.14)	<0.001	2.612				
Demographics									0.205					
Age (yr), median (IQR)	65.00 (55.00-70.00)	60.00 (50.00-70.00)	65.00 (55.00-75.00)	<0.001	0.079	63.00 (50.00-70.00)	60.00 (50.00-70.00)	60.00 (50.00-70.00)	0.573	0.090				
Male, n (%)	869 (46.47)	834 (44.60)	977 (52.27)	<0.001	0.038	181 (45.94)	187 (47.46)		0.722	0.030				
BMI (kg/m²), median (IQR)	24.20 (21.72-26.56)	24.03 (21.58-26.37)	24.09 (21.71-26.56)	0.566	0.029	24.22 (22.65-27.62)	24.34 (22.73-26.98)	24.31 (22.71-26.75)	0.573	0.040				
Comorbidities, n (%)														
Diabetes	56 (2.99)	32 (1.71)	58 (3.10)	0.012	0.085	7 (1.78)	5 (1.27)	8 (2.14)	0.771	0.041				
Elevated glucose level	11 (0.59)	15 (0.80)	10 (0.54)	0.557	0.026	3 (0.76)	3 (0.76)	4 (1.07)	1.000	<0.001				
Hypertension	58 (3.10)	51 (2.73)	60 (3.21)	0.663	0.022	11 (2.79)	9 (2.29)	13 (3.48)	0.821	0.032				
Hyperlipidemia	67 (3.58)	52 (2.78)	59 (3.16)	0.375				2 (0.54)						
Carotid artery stenosis	1866 (99.79)	1864 (99.68)	1867 (99.89)	0.367	0.021	1 (0.25)	0 (0.00)	2 (0.54)	1.000	0.071				
Valvular heart disease	5 (0.27)	6 (0.32)	8 (0.43)	0.69	0.01	1 (0.25)	0 (0.00)	2 (0.54)	1.000	0.071				
Atrial fibrillation	8 (0.43)	9 (0.48)	11 (0.59)	0.777	0.008	1 (0.25)	2 (0.51)	1 (0.27)	1.000	0.041				
COPD	2 (0.11)	3 (0.16)	7 (0.37)	0.173	0.015	0 (0.00)	0 (0.00)	9 (2.41)	1.000	<0.001				
Renal insufficiency	38 (2.03)	30 (1.60)	24 (1.28)	0.196	0.032	11 (2.79)	8 (2.03)	0 (0.00)	0.642	0.049				
Hepatic insufficiency	0 (0.00)	1 (0.05)	0 (0.00)	0.368	0.033	0 (0.00)	0 (0.00)	0 (0.00)	1.000	<0.001				
Prior stroke	1 (0.05)	0 (0.00)	0 (0.00)	0.368	0.033	0 (0.00)	0 (0.00)	5 (1.34)	1.000	<0.001				
Prior MI	16 (0.86)	17 (0.91)	19 (1.02)	0.872	0.006	4 (1.02)	4 (1.02)	28 (7.51)	1.000	<0.001				

Cancer	115 (6.15)	84 (4.49)	98 (5.24)	0.077	0.074	21 (5.33)	25 (6.33)	40 (10.73)		0.043
Surgical conditions										
Emergency	176 (9.41)	157 (8.40)	186 (9.95)	0.249	0.036	41 (10.41)	39 (9.90)	95 (25.45)	0.906	0.017
Types of surgery, n (%)				<0.001	0.345			210 (56.23)	0.959	0.101
Gastrointestinal	507 (27.11)	350 (18.72)	385 (20.60)			100 (25.38)	100 (25.38)	28 (7.51)		
Orthopedic	867 (46.36)	1172 (62.67)	968 (51.79)			206 (52.28)	220 (55.81)	12 (3.22)		
Neurosurgery	142 (7.59)	89 (4.76)	153 (8.19)			30 (7.61)	25 (6.34)	9 (2.41)		
Obstetric and gynecological	85 (4.55)	64 (3.42)	36 (1.93)			15 (3.80)	13 (3.30)	27 (7.23)		
Otolaryngology	38 (2.03)	43 (2.30)	53 (2.84)			8 (2.03)	7 (1.77)	9 (2.41)		
Thoracic	191 (10.21)	121 (6.47)	233 (12.47)			31 (7.87)	25 (6.34)	42 (11.26)		
Urology	40 (2.14)	31 (1.66)	41 (2.19)			8 (2.03)	8 (2.03)	105 (28.12)		
High-risk surgery ^a , n (%)	698 (37.33)	471 (25.19)	618 (33.07)	<0.001	0.264	41 (10.41)	39 (9.90)	268 (71.88)	0.704	0.032
Type of anesthesia, n (%)				<0.001	0.183				0.871	0.017
General anesthesia	1479 (79.09)	1332 (71.23)	1434 (76.73)			100 (25.38)	103 (26.11)	345 (92.56)		
Neuraxial anesthesia	391 (20.91)	538 (28.77)	435 (23.27)			298 (75.63)	295 (74.89)	28 (7.51)		
ASA classification, n (%)								105.00 (60.00-210.00)	1.000	<0.001
<3	1539 (82.30)	1628 (87.06)	1448 (77.47)	<0.001	0.132	344 (87.34)	344 (87.34)	60 (16.08)		
≥3	331 (17.70)	242 (12.94)	421 (22.53)			54 (13.72)	54 (13.72)	62 (16.64)		
Operation time (min), median (IQR)	120.00 (70.00-225.00)	100.00 (65.00-190.00)	110.00 (70.00-220.00)	<0.001	0.179	115.00 (65.00-216.00)	110.00 (65.00-220.00)	40 (10.73)	0.585	0.039
Intraoperative hypotension, n (%)	276 (14.76)	299 (15.99)	305 (16.32)	0.385	0.034	63 (15.98)	64 (16.24)	58 (15.56)	1.000	0.007

Intraoperative bradycardia, n (%)	274 (14.65)	292 (15.61)	306 (16.37)	0.347	0.027	60 (15.23)	54 (13.70)	59 (15.82)	0.613	0.043
Medication history, n (%)								16 (4.29)		
β-blocker	214 (11.44)	152 (8.13)	255 (13.64)	<0.001	0.112	37 (9.39)	39 (9.89)	14 (3.75)	0.904	0.017
Statin	368 (19.68)	250 (13.37)	376 (20.12)	<0.001	0.171	57 (14.43)	59 (14.95)	5 (1.34)	0.92	0.014
CCB	330 (17.65)	301 (16.10)	419 (22.42)	<0.001	0.041	61 (15.44)	57 (14.43)	3 (0.80)	0.765	0.028
Insulin	158 (8.45)	101 (5.40)	266 (14.23)	<0.001	0.12	18 (4.57)	15 (3.80)	12 (3.22)	0.722	0.038
Sulfonylureas	95 (5.08)	69 (3.70)	143 (7.65)	<0.001	0.068	11 (2.79)	13 (3.30)	32 (8.58)	0.836	0.029
Biguanides	49 (2.62)	33 (1.76)	53 (2.84)	0.078	0.058	5 (1.27)	5 (1.27)	28 (7.51)	1.000	<0.001
Thiazolidinediones	11 (0.59)	9 (0.48)	27 (1.44)	0.002	0.015	2 (0.51)	3 (0.76)	3 (0.76)	1.000	0.032
DPP-4 Inhibitors	114 (6.10)	91 (4.87)	195 (10.43)	<0.001	0.054	10 (2.53)	14 (3.55)	14 (3.55)	0.534	0.059
Anticoagulant	177 (9.47)	125 (6.68)	155 (8.29)	0.008	0.102	31 (7.88)	26 (6.59)	26 (6.59)	0.582	0.049
Antiplatelet drug	171 (9.14)	115 (6.15)	177 (9.47)	<0.001	0.113	27 (6.86)	25 (6.33)	25 (6.33)	0.886	0.020
Laboratory tests, median (IQR)										
HbA1c (%)	5.90 (5.60-6.70)	5.50 (5.20-6.00)	5.90 (5.30-6.90)	<0.001	0.505	6.20 (5.70-6.50)	6.34 (6.07-6.62)	6.18 (5.59-6.58)	0.864	0.012
Admission blood glucose (mmol/l)	5.33 (4.67-6.11)	6.11 (5.56-7.00)	9.06 (7.33-11.33)	<0.001	0.681	5.72 (5.50-5.94)	5.83 (5.56-6.11)	7.00 (6.11-7.67)	0.914	0.008
Hemoglobin (g/dl)	9.97 (9.23-11.48)	12.01 (11.37-13.22)	14.02 (13.01-15.38)	<0.001	0.059	12.05 (11.69-13.04)	12.47 (11.52-13.57)	12.95 (12.14-14.17)	0.990	0.001
Albumin (g/dl)	4.10 (3.80-4.30)	4.10 (3.90-4.40)	4.00 (3.70-4.26)	<0.001	0.125	4.10 (4.00-4.30)	4.13 (4.08-4.36)	4.07 (4.00-4.25)	1.00	<0.001
WBC (10 ⁹ /l)	6.62 (5.52-7.84)	6.26 (5.14-7.84)	6.62 (5.52-8.31)	<0.001	0.042	6.38 (5.42-8.26)	6.27 (5.21-7.88)	6.30 (5.37-8.15)	0.476	0.051

Platelets (10 ⁹ /l)	231.00 (198.00- 271.00)	231.00 (198.00- 271.00)	229.20 (188.00- 271.00)	<0.001	0.059	231.00 (195.00- 271.00)	231.00 (188.00- 271.00)	229.00 (198.00- 271.00)	0.990	0.001
Creatinine (mg/dl)	0.81 (0.66- 0.99)	0.78 (0.66- 0.98)	0.85 (0.69- 1.06)	<0.001	0.031	0.81 (0.68- 0.98)	0.79 (0.67- 0.99)	0.80 (0.67- 0.96)	0.937	0.006

ASA, American Society of Anesthesiologists; BMI, body mass index; CCB, calcium channel blocker; COPD, chronic obstructive pulmonary disease; HbA1c, glycated hemoglobin; ICU, intensive care unit; IQR, interquartile range; MACE, major adverse cardiac event; MI, myocardial infarction; SHR, stress hyperglycemia ratio; SMD, Standardized Mean Difference; WBC, white blood cell.

^aHigh-risk surgeries included intraperitoneal, intrathoracic, and suprainguinal vascular surgeries.

Table S6. Multivariate Cox regression analysis of the association between SHR and perioperative MACE in patients after propensity score matching

Variables	Model 1			Model 2			Model 3		
	HR (95% CI)	P value	P for trend	HR (95% CI)	P value	P for trend	HR (95% CI)	P value	P for trend
MACE									
Continuous variable	1.95 (1.70,2.21)	<0.001		1.92 (1.67,2.18)	<0.001		1.39 (1.20,1.61)	<0.001	
Tertile									
Tertile 1 (n = 394)	Ref	Ref		Ref	Ref	<0.001	Ref	Ref	<0.001
Tertile 2 (n = 394)	1.02 (0.47,2.14)	0.954	<0.001	1.04 (0.48,2.22)	0.945		1.05 (0.48,2.28)	0.934	
Tertile 3 (n = 394)	2.88 (1.55,5.42)	0.002		2.80 (1.50,5.31)	0.002		2.91 (1.55,5.46)	0.001	
Cardiac death									
Continuous variable	2.12 (1.82,2.43)	<0.001		2.13 (1.85,2.26)	<0.001		1.55 (1.33,1.80)	<0.001	
Tertile									
Tertile 1 (n = 394)	Ref	Ref	<0.001	Ref	Ref	<0.001	Ref	Ref	<0.001
Tertile 2 (n = 394)	1.03 (0.38,2.68)	0.99		1.02 (0.38,2.66)	0.996		1.26 (0.47,3.38)	0.66	
Tertile 3 (n = 394)	3.92 (1.80,8.55)	<0.001		3.88 (1.80,8.60)	<0.001		3.18 (1.45,7.03)	0.004	

Model 1: unadjusted.

Model 2: adjusted for age, sex, and BMI.

Model 3: adjusted for age, sex, BMI, ASA classification, emergency status, type of surgery, type of anesthesia, diabetes status, hypertension status, hyperlipidemia status, carotid artery stenosis status, valvular heart disease status, atrial fibrillation status, chronic obstructive pulmonary disease (COPD) status, renal insufficiency status, hepatic insufficiency status, prior MI status, IOH status, β -blocker status, insulin status and antidiabetic drug status.

CI, confidence interval; HR, hazard ratio; MACE, major adverse cardiac event; SD, standard deviation; SHR stress hyperglycemia ratio.

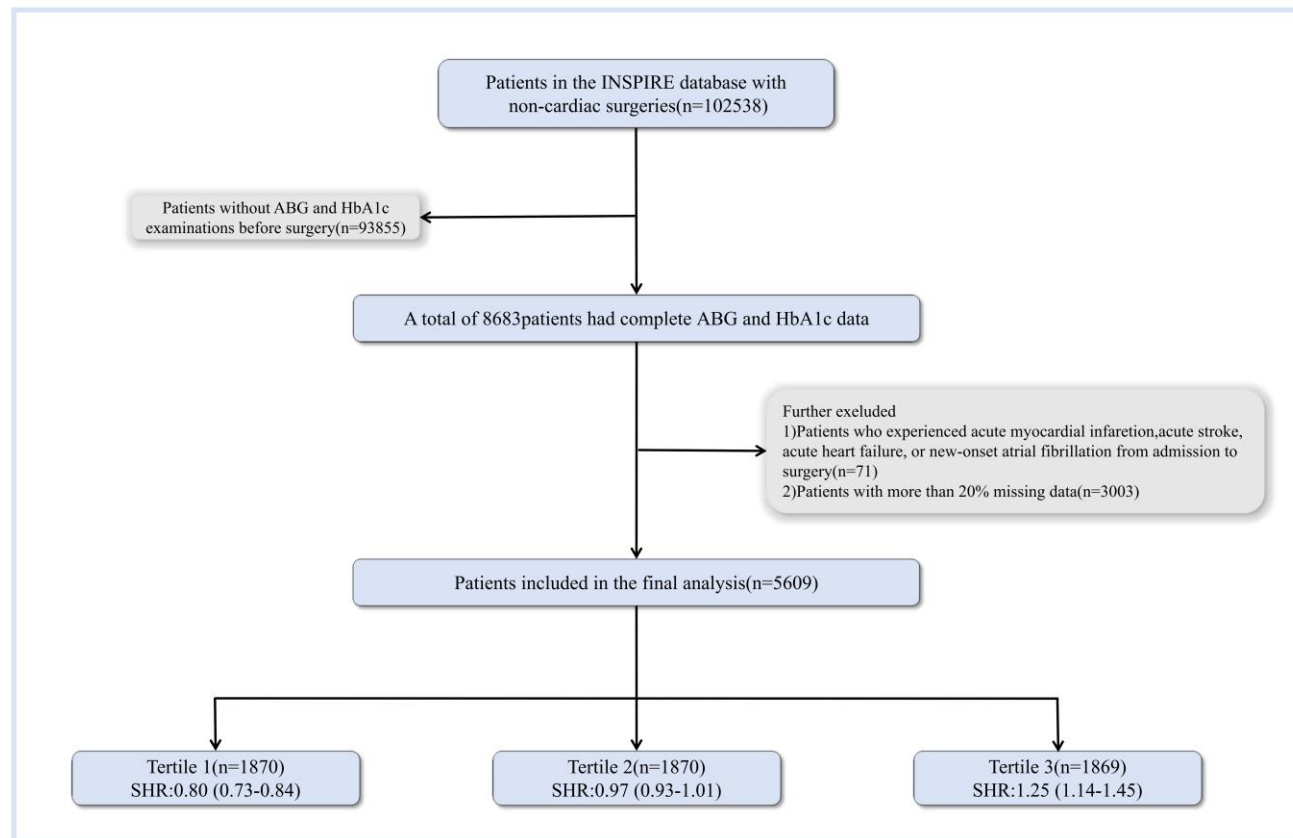


Figure S1. Flow diagram of this study

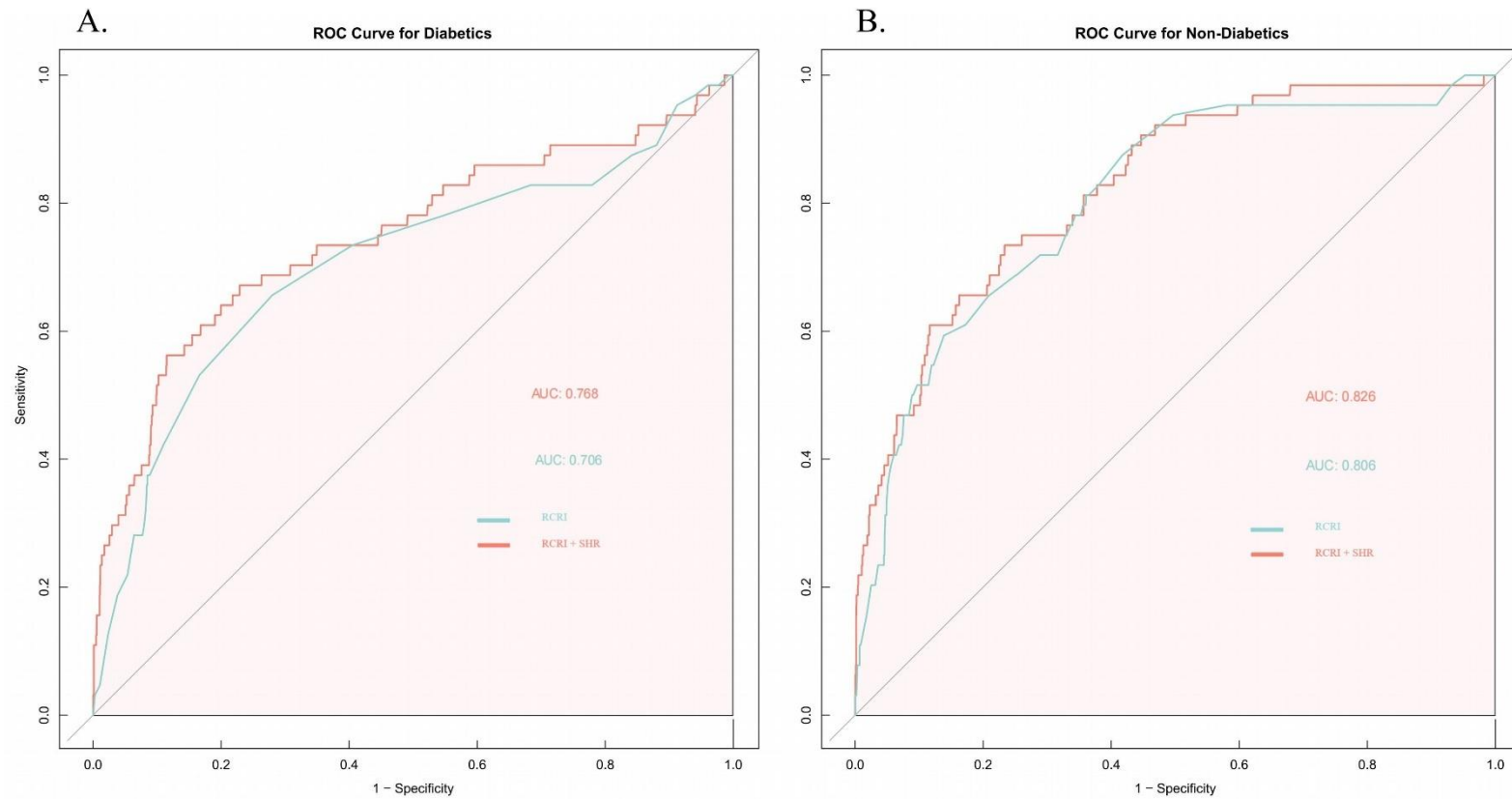


Figure S2. AUC ROC curves for predicting postoperative 30-day MACEs in diabetic and non-diabetic patients. A. ROC curve comparison between the RCRI model and RCRI model + SHR for predicting postoperative 30-day MACEs in diabetic patients. B. ROC curve comparison between the RCRI model and RCRI model + SHR for predicting postoperative 30-day MACEs in non-diabetic patients.

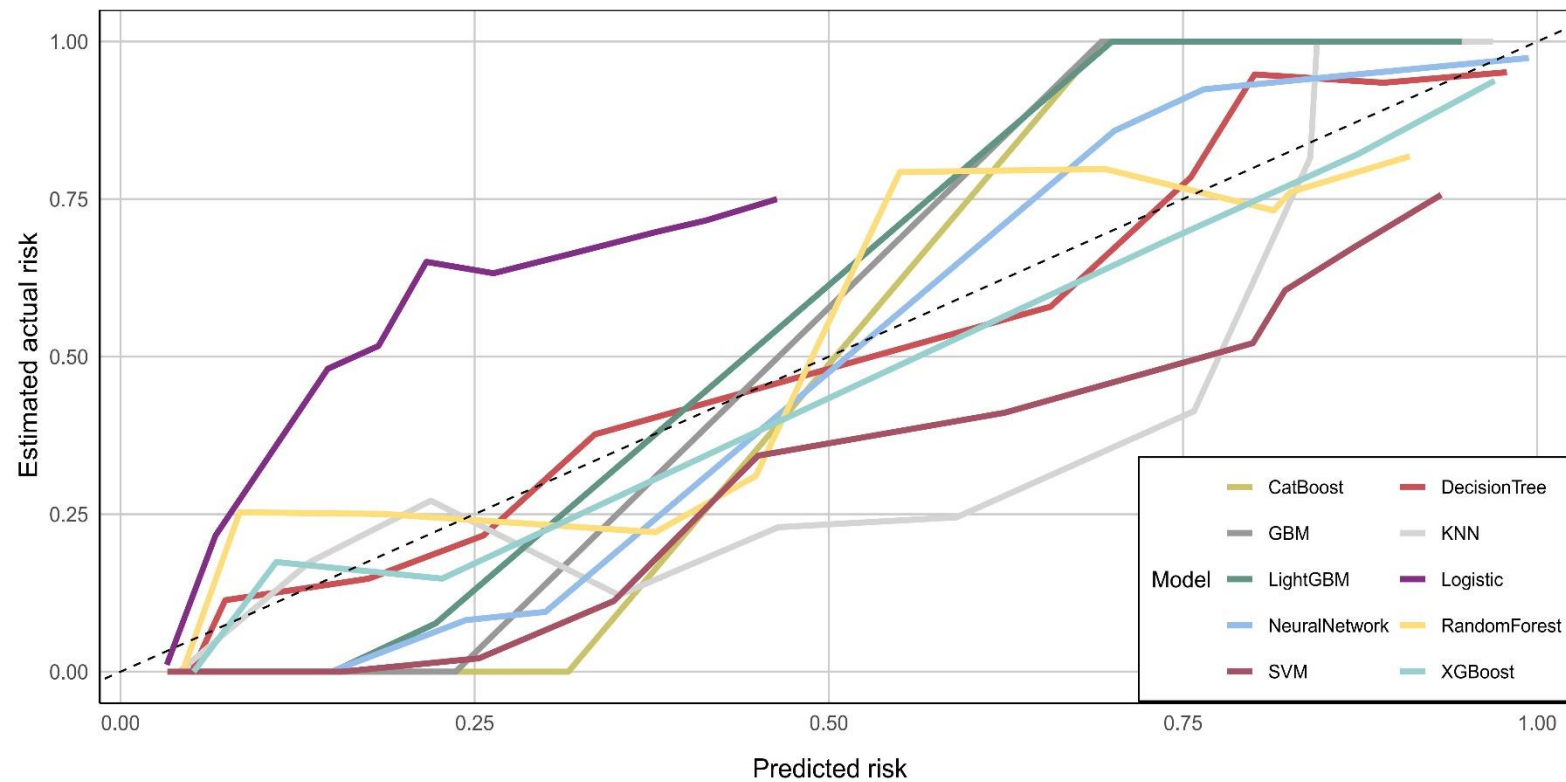


Figure S3. Calibration curve of the machine learning algorithms.

RF, Random Forest; XGBoost, Extreme Gradient Boosting; LightGBM, Light Gradient Boosting Machine; CatBoost, Categorical Boosting; GBM, Gradient Boosting Machine; KNN, K-Nearest Neighbors; SVM, Support Vector Machine; DT, Decision Tree; MLP, Multilayer Perceptron.

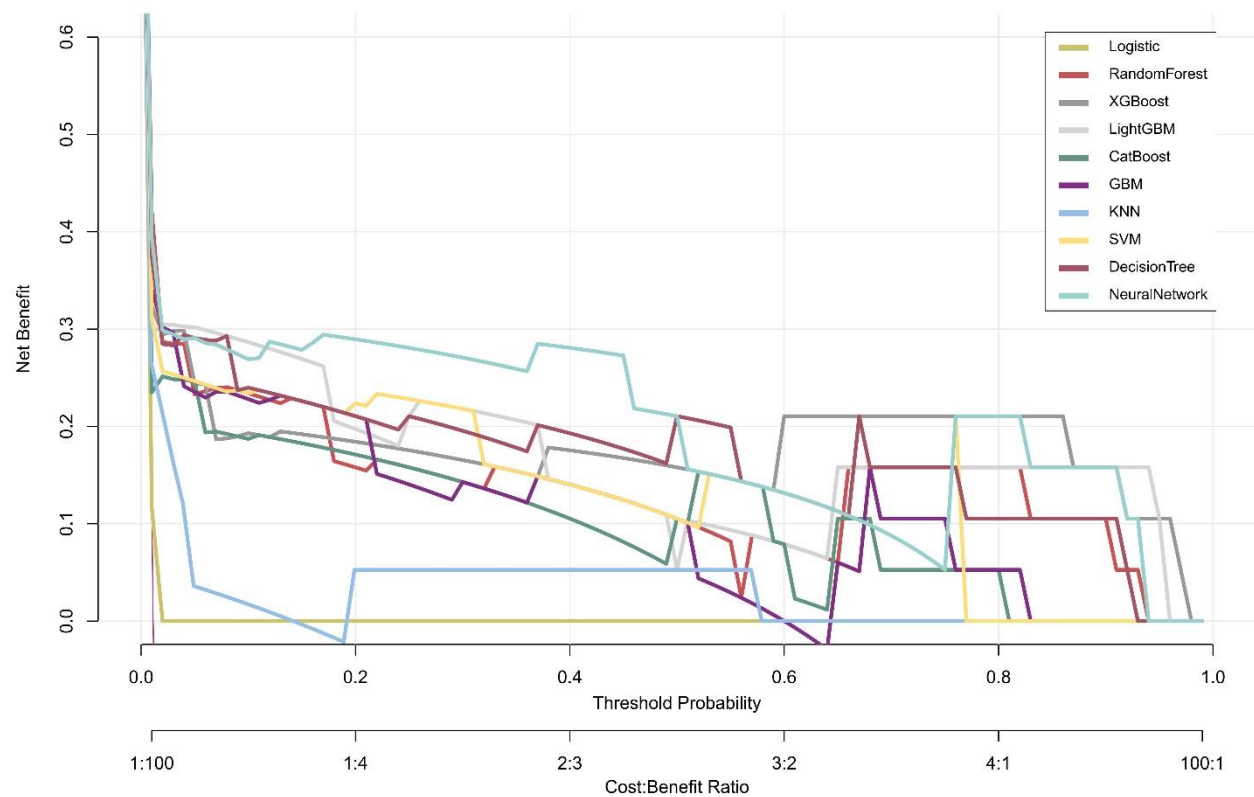


Figure S4. Decision curve analysis of the machine learning algorithms

RF, Random Forest; XGBoost, Extreme Gradient Boosting; LightGBM, Light Gradient Boosting Machine; CatBoost, Categorical Boosting; GBM, Gradient Boosting Machine; KNN, K-Nearest Neighbors; SVM, Support Vector Machine; DT, Decision Tree; MLP, Multilayer Perceptron.

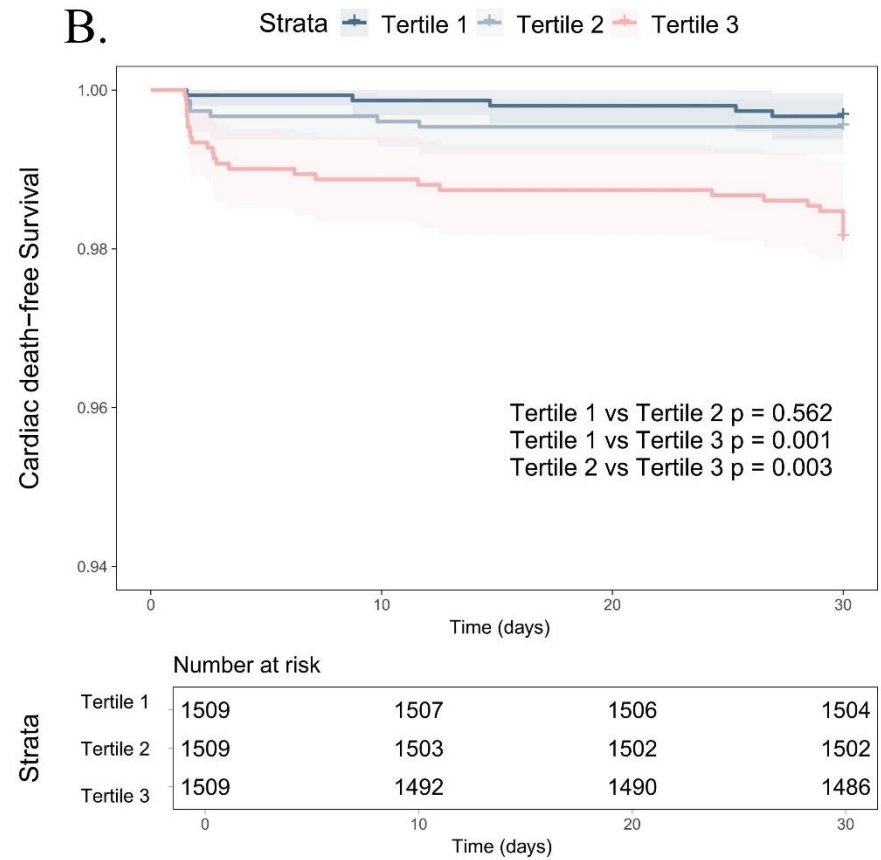
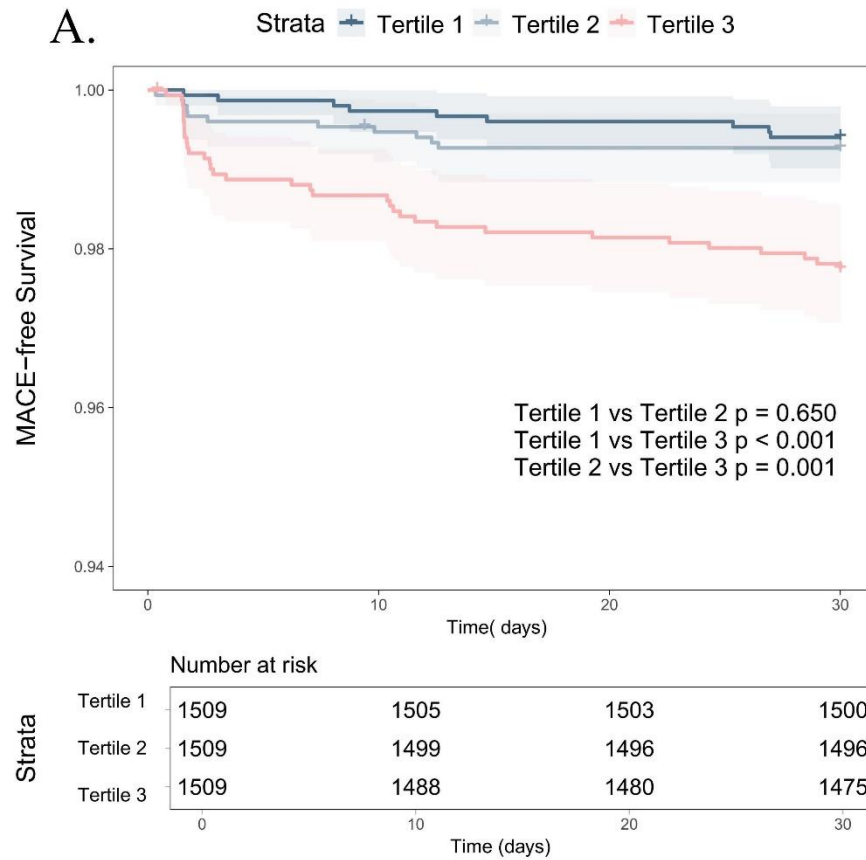


Figure S5. Kaplan–Meier estimated event rates of MACEs in patients with complete data events according to tertiles of the SHR. MACE, major adverse cardiovascular event.