

Supplementary Files

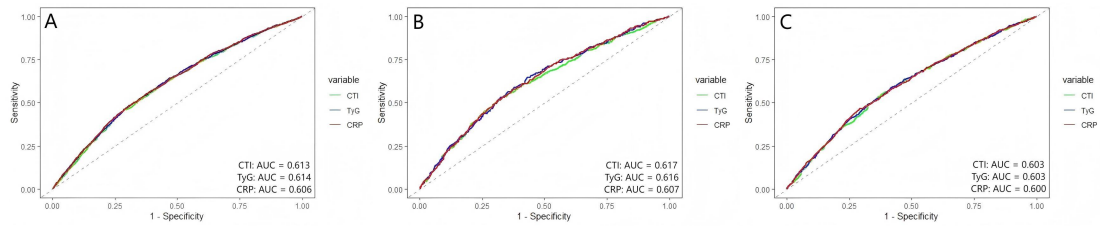


Figure S1 Receiver operating characteristic curves for the prediction of incident hypertension stratified by baseline BP status. (A) Overall population. (B) Normal BP group. (C) Elevated BP group. BP, blood pressure; CTI, C-reactive protein-triglyceride glucose index; TyG, triglyceride-glucose; CRP, C-reactive protein.

Table S1 Missing variables and imputation methods

Covariates	N (%)	impute
BMI	63 (1.15)	pmm
HbA1c	46 (0.84)	pmm
Dyslipidemia	84 (1.53)	logreg
Diabetes	37 (0.67)	logreg
Liver disease	29 (0.53)	logreg
Kidney disease	28 (0.51)	logreg
Heart disease	21 (0.38)	logreg
Stroke	11 (0.20)	logreg
Smoking status	20 (0.36)	polyreg
Drinking status	5 (0.09)	polyreg

Abbreviation: BMI, body mass index; HbA1c, glycosylated hemoglobin A1c.

Table S2 The characteristics of participants that developed hypertension

Characteristics	Overall	Non-hypertension	Hypertension	P value
N	5494	3722	1772	
Gender, n (%)				
Male	2608 (47.5)	1774 (46.9)	864 (48.8)	0.197
Female	2886 (52.5)	1978 (53.1)	908 (51.2)	
Age, years	57.62 ± 8.81	56.78 ± 8.57	59.36 ± 9.07	<0.001
Marital status, n (%)				0.058
Married	4711 (85.7)	3215 (86.4)	1496 (84.4)	
Other	783 (14.3)	507 (13.6)	276 (15.6)	
Education level, n (%)				0.004
Elementary school or below	3758 (68.4)	2493 (67.0)	1265 (71.4)	
Middle school	1582 (28.8)	1122 (30.1)	460 (26.0)	
College or above	154 (2.8)	107 (2.9)	47 (2.7)	
Residence, n (%)				0.574
Rural	4624 (84.2)	3125 (84.0)	1499 (84.6)	
Urban	870 (15.8)	597 (16.0)	273 (15.4)	
Smoking status, n (%)				0.538
Never	3322 (60.5)	2259 (60.7)	1063 (60)	
Former	436 (7.9)	285 (7.7)	151 (8.5)	
Current	1736 (31.6)	1178 (31.6)	558 (31.5)	
Drinking status, n (%)				0.020
Never	3370 (61.3)	2321 (62.4)	1049 (59.2)	
Former	391 (7.1)	244 (6.6)	147 (8.3)	
Current	1733 (31.5)	1157 (31.1)	576 (32.5)	
Stroke, n (%)	73 (1.3)	39 (1.0)	34 (1.9)	0.012
Heart disease, n (%)	456 (8.3)	295 (7.9)	161 (9.1)	0.160
Diabetes, n (%)	216 (3.9)	125 (3.4)	91 (5.1)	0.002
Dyslipidemia, n (%)	325 (5.9)	204 (5.5)	121 (6.8)	0.055
Kidney disease, n (%)	313 (5.7)	219 (5.9)	94 (5.3)	0.422
Liver disease, n (%)	188 (3.4)	129 (3.5)	59 (3.3)	0.857
SBP, mmHg	117.58 ± 11.68	115.20 ± 11.29	122.56 ± 10.90	<0.001
DBP, mmHg	70.02 ± 8.87	68.87 ± 8.74	72.43 ± 8.67	<0.001
BMI, kg/m2	22.48 (20.39, 24.82)	22.29 (20.26, 24.53)	22.99 (20.70, 25.59)	<0.001
FBG, mg/dl	100.98 (93.42, 110.34)	100.08 (92.70, 109.40)	102.69 (94.68, 113.45)	<0.001
HbA1c, %	5.10 (4.90, 5.40)	5.10 (4.90, 5.40)	5.20 (4.90, 5.50)	<0.001
TG, mg/dl	98.24 (71.68, 141.60)	96.46 (70.80, 136.95)	101.78 (75.00, 149.57)	<0.001
TC, mg/dl	190.60 ± 37.29	189.30 ± 36.36	193.34 ± 39.04	<0.001
HDL-c, mg/dl	52.53 ± 15.30	52.77 ± 15.01	52.02 ± 15.89	0.093
LDL-c, mg/dl	115.42 ± 33.55	114.63 ± 32.66	117.08 ± 35.30	0.011
CRP, mg/dl	0.90 (0.50, 1.88)	0.86 (0.49, 1.80)	0.98 (0.54, 2.08)	<0.001

TyG	8.58 ± 0.60	8.55 ± 0.59	8.66 ± 0.62	<0.001
CTI	8.61 ± 0.77	8.56 ± 0.75	8.71 ± 0.79	<0.001

Abbreviation: SBP, systolic blood pressure; DBP, diastolic blood pressure; BMI, body mass index; FBG, fasting blood glucose; HbA1c, glycosylated hemoglobin A1c; TG, triglyceride; TC, total cholesterol; HDL-c, high-density lipoprotein cholesterol; LDL-c, low-density lipoprotein cholesterol; CRP, C-reactive protein; TyG, triglyceride-glucose; CTI, C-reactive protein-triglyceride glucose index.

Table S3 Association between the CTI and incident hypertension after excluding participants with missing data

		Event,n	Model1		Model 2		Model 3	
			OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
Normal BP								
CTI (per 1 unit)	408		1.27 (1.14, 1.41)	<0.001	1.25 (1.13, 1.40)	<0.001	1.20 (1.07, 1.35)	0.002
Q1	95		Ref		Ref		Ref	
Q2	103		1.27 (0.94, 1.73)	0.124	1.21 (0.89, 1.65)	0.235	1.20 (0.88, 1.64)	0.249
Q3	101		1.48 (1.08, 2.01)	0.014	1.42 (1.04, 1.94)	0.029	1.39 (1.01, 1.90)	0.043
Q4	109		1.81 (1.33, 2.47)	<0.001	1.75 (1.28, 2.39)	<0.001	1.57 (1.13, 2.17)	0.007
Elevated BP								
CTI (per 1 unit)	1295		1.13 (1.05, 1.21)	<0.001	1.13 (1.05, 1.21)	0.001	1.10 (1.02, 1.19)	0.019
Q1	259		Ref		Ref		Ref	
Q2	291		1.05 (0.85, 1.30)	0.645	1.04 (0.84, 1.29)	0.748	1.01 (0.81, 1.25)	0.929
Q3	349		1.21 (0.99, 1.49)	0.069	1.15 (0.93, 1.42)	0.187	1.11 (0.90, 1.37)	0.326
Q4	396		1.42 (1.16, 1.75)	<0.001	1.40 (1.13, 1.72)	0.002	1.31 (1.06, 1.64)	0.014

Model 1: Unadjusted model

Model 2: Adjusted for age, gender, marital status, education level, residence, smoking status and drinking status;

Model 3: Model 2+ diabetes, dyslipidemia, heart disease, stroke, kidney disease, liver disease, BMI, TC, LDL-c.

Abbreviation: CTI, C-reactive protein-triglyceride glucose index; BP, blood pressure; OR, odds ratio; CI, confidence interval; BMI, body mass index; TC, total cholesterol; LDL-c, low-density lipoprotein cholesterol.

Table S4 Association between the CTI and incident hypertension after exclusion of non-fasting individuals

		Event,n	Model1		Model 2		Model 3	
			OR (95%CI)	P	OR (95%CI)	P	OR (95%CI)	P
Normal BP								
CTI (per 1 unit)	392		1.27 (1.13, 1.42)	<0.001	1.25 (1.12, 1.40)	<0.001	1.19 (1.06, 1.35)	0.004
Q1	93		Ref		Ref		Ref	
Q2	100		1.27 (0.93, 1.74)	0.127	1.21 (0.88, 1.66)	0.235	1.22 (0.89, 1.67)	0.223
Q3	98		1.48 (1.08, 2.02)	0.015	1.44 (1.05, 1.98)	0.025	1.42 (1.03, 1.96)	0.032
Q4	101		1.80 (1.32, 2.48)	<0.001	1.73 (1.26, 2.39)	<0.001	1.55 (1.11, 2.16)	0.010
Elevated BP								
CTI (per 1 unit)	1215		1.12 (1.04, 1.20)	0.002	1.12 (1.04, 1.21)	0.002	1.09 (1.01, 1.18)	0.037
Q1	254		Ref		Ref		Ref	
Q2	282		1.05 (0.84, 1.30)	0.676	1.03 (0.83, 1.28)	0.776	0.99 (0.80, 1.24)	0.964
Q3	318		1.19 (0.96, 1.47)	0.114	1.14 (0.92, 1.42)	0.217	1.10 (0.88, 1.36)	0.411
Q4	361		1.40 (1.14, 1.73)	0.001	1.41 (1.14, 1.74)	0.002	1.31 (1.04, 1.64)	0.021

Model 1: Unadjusted model

Model 2: Adjusted for age, gender, marital status, education level, residence, smoking status and drinking status;

Model 3: Model 2+ diabetes, dyslipidemia, heart disease, stroke, kidney disease, liver disease, BMI, TC, LDL-c.

Abbreviation: CTI, C-reactive protein-triglyceride glucose index; BP, blood pressure; OR, odds ratio; CI, confidence interval; BMI, body mass index; TC, total cholesterol; LDL-c, low-density lipoprotein cholesterol.

Table S5 Association between the CTI and incident hypertension after excluding participants with less than 2 years of follow-up

		Event,n	Model1		Model 2		Model 3	
			HR (95%CI)	P	HR (95%CI)	P	HR (95%CI)	P
Normal BP								
CTI (per 1 unit)	1	418	1.29 (1.16, 1.44)	<0.001	1.28 (1.14, 1.43)	<0.001	1.23 (1.09, 1.38)	<0.001
Q1		99	Ref		Ref		Ref	
Q2		105	1.22 (0.90, 1.65)	0.197	1.16 (0.86, 1.58)	0.334	1.16 (0.85, 1.58)	0.343
Q3		102	1.46 (1.08, 1.99)	0.016	1.42 (1.04, 1.94)	0.028	1.39 (1.02, 1.91)	0.039
Q4		112	1.87 (1.38, 2.54)	<0.001	1.81 (1.33, 2.47)	<0.001	1.64 (1.19, 2.26)	0.003
Elevated BP								
CTI (per 1 unit)	1	1315	1.16 (1.08, 1.25)	<0.001	1.16 (1.08, 1.25)	<0.001	1.14 (1.05, 1.23)	0.002
Q1		262	Ref		Ref		Ref	
Q2		294	1.02 (0.83, 1.26)	0.839	1.01 (0.81, 1.25)	0.929	0.99 (0.79, 1.22)	0.880
Q3		353	1.22 (0.99, 1.50)	0.063	1.16 (0.94, 1.43)	0.171	1.12 (0.91, 1.39)	0.291
Q4		406	1.49 (1.22, 1.83)	<0.001	1.47 (1.19, 1.82)	<0.001	1.39 (1.12, 1.74)	0.003

Model 1: Unadjusted model

Model 2: Adjusted for age, gender, marital status, education level, residence, smoking status and drinking status;

Model 3: Model 2+ diabetes, dyslipidemia, heart disease, stroke, kidney disease, liver disease, BMI, TC, LDL-c.

Abbreviation: CTI, C-reactive protein-triglyceride glucose index; BP, blood pressure; OR, odds ratio; CI, confidence interval; BMI, body mass index; TC, total cholesterol; LDL-c, low-density lipoprotein cholesterol.