

- Supplement materials –

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Table S1. Baseline Characteristics of the Study Cohort

Variables	Total N=98554	HF (-) N=97336	HF (+) N=1218	P value
Age, y	53.63±12.34	53.49±12.29	64.76±11.11	<0.01
Male sex, n (%)	77688 (78.83)	76648 (78.75)	1040 (85.39)	<0.01
Comorbidities				
Hypertension, n (%)	15490 (15.72)	15088 (15.50)	402 (33.00)	<0.01
Diabetes mellitus, n (%)	4388 (4.45)	4243 (4.36)	145 (11.90)	<0.01
Dyslipidemia, n (%)	4648 (4.72)	4573 (4.70)	75 (6.16)	0.02
CKD, eGFR <60 mL/min, n (%)	8359 (8.48)	8120 (8.34)	239 (19.62)	<0.01
Medications				
Antihypertensive agents, n (%)	14392 (14.60)	14012 (14.40)	380 (31.20)	<0.01
Hypoglycemic agents, n (%)	3805 (3.86)	3671 (3.77)	134 (11.00)	<0.01
Lipid-lowers agents, n (%)	969 (0.98)	940 (0.97)	29 (2.38)	<0.01
Lifestyle				
Current smoker, n (%)	33595 (34.09)	33259 (34.17)	336 (27.59)	<0.01
Current alcohol use, n (%)	34799 (35.31)	34499 (35.44)	300 (24.63)	<0.01
Regular exercise, n (%)	69113 (70.13)	68217 (70.08)	896 (73.56)	<0.01
Low-income level, n (%)	51514 (52.27)	50852 (52.24)	662 (54.35)	0.14
Health examination				
Body weight, kg	71.13±11.28	71.11±11.28	72.50±11.81	<0.01
BMI, kg/m ²	25.08±3.40	25.07±3.39	25.78±3.74	<0.01
RHR, bpm	73.64±10.49	73.60±10.46	76.75±12.56	<0.01
SBP, mmHg	132.01±20.13	131.86±20.05	143.91±22.44	<0.01
DBP, mmHg	84.71±11.16	84.68±11.15	87.30±12.21	<0.01
FPG, mmol/L	5.69±1.85	5.68±1.84	6.36±2.39	<0.01
TC, mmol/L	5.01±1.38	5.01±1.38	5.20±1.18	<0.01
*TG, mmol/L	1.29 (0.92, 1.92)	1.29 (0.92, 1.91)	1.31 (0.96, 1.97)	0.04
LDL-C, mmol/L	2.62±1.07	2.62±1.07	2.79±0.94	<0.01
HDL-C, mmol/L	1.54±0.53	1.54±0.52	1.54±1.23	0.91
eGFR, mL/min	88.79±20.75	88.92±20.70	77.78±21.80	<0.01
*Hs-CRP	1.20 (0.54, 2.77)	1.18 (0.53, 2.74)	1.92 (0.90, 4.26)	<0.01
The number of FBP measurements				<0.01

2	41965 (42.58)	41372 (42.50)	593 (48.69)	
3	56589 (57.42)	55964 (57.50)	625 (51.31)	
FBP Variability				
*SD	0.43 (0.24, 0.71)	0.42 (0.23, 0.71)	0.57 (0.31, 0.97)	<0.01
*ARV	0.54 (0.30, 0.94)	0.54 (0.30, 0.93)	0.72 (0.39, 1.26)	<0.01
*CV	8.14 (4.56,13.20)	8.12 (4.55, 13.16)	10.07 (5.77, 16.16)	<0.01
*VIM	0.43 (0.24, 0.71)	0.42 (0.23, 0.71)	0.57 (0.31, 0.97)	<0.01

Low-income level: income \geq 800 Renminbi/month.

Continuous variables are presented as mean \pm SD, and categorical variables are presented as percentage.

Abbreviations: CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; BMI, body mass index; DBP, diastolic blood pressure; SBP, systolic blood pressure; FBG, fasting blood glucose; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; RHR, resting heart rate; TC, total cholesterol; TG, triglyceride; Hs-CRP, High-sensitivity C-reactive protein; CV, coefficient of variance; SD, the standard deviation; VIM, variability independent of mean; ARV, average real variability.

*Triglyceride levels, Hs-CRP levels are presented as median (interquartile range).

Table S2. Baseline Characteristics Grouped by the Variability Independent of the Mean of Fasting Plasma Glucose Levels

Variables	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	P
	N=98554	N=24809	N=24763	N=27334	N=21648	value
Age, y	53.63±12.34	51.97±12.45	52.52±12.41	53.94±12.37	56.38±11.55	<0.01
Male sex, n (%)	77688 (78.83)	19130 (77.11)	19026 (76.83)	21762 (79.62)	17770 (82.09)	<0.01
Comorbidities						
Hypertension, n (%)	15490 (15.72)	3204 (12.91)	3444 (13.91)	4313 (15.78)	4529 (20.92)	<0.01
Diabetes mellitus, n (%)	4388 (4.45)	329 (1.33)	330 (1.33)	641 (2.35)	3088 (14.26)	<0.01
Dyslipidemia, n (%)	4648(4.72)	933(3.76)	1031(4.16)	1335(4.88)	1349(6.23)	<0.01
CKD, eGFR <60 mL/min, n (%)	8359 (8.48)	1977 (7.97)	1898 (7.66)	2221 (8.13)	2263 (10.45)	<0.01
Medications						
Antihypertensive agents, n (%)	14392 (14.60)	2908 (11.72)	3180 (12.84)	4030 (14.74)	4274 (19.74)	<0.01
Hypoglycemic agents, n (%)	3805 (3.86)	275 (1.11)	269 (1.09)	552 (2.02)	2709 (12.51)	<0.01
Lipid-lowers agents, n (%)	969 (0.98)	153 (0.62)	199 (0.80)	263 (0.96)	354 (1.64)	<0.01
Lifestyle						
Current smoker, n (%)	33595 (34.09)	8316 (33.52)	8162 (32.96)	9624 (35.21)	7493 (34.61)	<0.01
Current alcohol use, n (%)	34799 (35.31)	8849 (35.67)	8577 (34.64)	9894 (36.20)	7479 (34.55)	<0.01
Regular exercise, n (%)	69113 (70.13)	17695 (71.32)	17348 (70.06)	18946 (69.31)	15124 (69.86)	<0.01
Low-income level, n (%)	51514 (52.27)	13455 (54.23)	12771 (51.57)	13837 (50.62)	11451 (52.90)	<0.01

Health examination						
Body weight, kg	71.13±11.28	70.51±11.29	70.78±11.32	71.09±11.19	72.29±11.27	<0.01
BMI, kg/m ²	25.08±3.40	24.84±3.36	24.96±3.35	25.06±3.37	25.54±3.48	<0.01
RHR, bpm	73.64±10.49	72.97±10.00	72.91±10.05	73.47±10.44	75.44±11.36	<0.01
SBP, mmHg	132.01±20.13	129.76±20.02	130.09±19.56	132.34±19.94	136.35±20.41	<0.01
DBP, mmHg	84.71±11.16	83.93±11.14	83.99±11.05	84.92±11.15	86.16±11.18	<0.01
FPG, mmol/L	5.69±1.85	5.22±0.74	5.27±0.76	5.47±0.98	6.99±3.31	<0.01
TC, mmol/L	5.01±1.38	4.93±1.12	4.96±1.37	5.02±1.53	5.13±1.43	<0.01
*TG, mmol/L	1.29 (0.92,1.92)	1.23 (0.87,1.81)	1.24 (0.89,1.83)	1.30 (0.93,1.90)	1.41 (1.01,2.16)	<0.01
LDL-C, mmol/L	2.62±1.07	2.61±0.91	2.62±1.07	2.62±1.17	2.64±1.12	0.01
HDL-C, mmol/L	1.54±0.53	1.53±0.52	1.54±0.50	1.55±0.52	1.54±0.58	<0.01
Cr, μmol/L	82.56±28.18	82.03±23.85	81.85±27.42	82.34±26.51	84.26±34.82	<0.01
eGFR, mL/min	88.79±20.75	89.83±21.29	89.68±19.81	88.78±19.99	86.57±21.91	<0.01
*Hs-CRP, mg/L	1.20 (0.54,2.77)	1.13 (0.53,2.62)	1.10 (0.50,2.60)	1.15 (0.55,2.70)	1.30 (0.60,3.16)	<0.01
The number of FBP measurements						<0.01
2	41965 (42.58)	13557 (54.65)	9026 (36.45)	9845 (36.02)	9537 (44.05)	
3	56589 (57.42)	11252 (45.35)	15737 (63.55)	17489 (63.98)	12111 (55.95)	
FBP Variability						
*SD	0.43 (0.24,0.71)	0.14 (0.08,0.19)	0.33 (0.28,0.38)	0.57 (0.49,0.65)	1.11 (0.90,1.66)	<0.01
*ARV	0.54 (0.30,0.94)	0.18 (0.10,0.25)	0.42 (0.35,0.52)	0.73 (0.61,0.89)	1.49 (1.17,2.20)	<0.01

*CV	8.14 (4.56,13.20)	2.69(1.50, 3.70)	6.39(5.48, 7.40)	10.71(9.30, 12.44)	19.25(16.04, 25.25)	<0.01
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Note: Q1, the variability independent of the mean of FPG < 0.24; Q2, $0.24 \leq$ the variability independent of the mean of FPG < 0.43; Q3, $0.43 \leq$ the variability independent of the mean of FPG < 0.77; Q4, the variability independent of the mean of FPG ≥ 0.77 .

Low-income level: income ≥ 800 Renminbi/month.

Continuous variables are presented as mean \pm SD, and categorical variables are presented as percentage.

Abbreviations: CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; Scr, serum creatinine levels; BMI, body mass index; DBP, diastolic blood pressure; SBP, systolic blood pressure; FBG, fasting blood glucose; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; RHR, resting heart rate; TC, total cholesterol; TG, triglyceride; Hs-CRP, High-sensitivity C-reactive protein; CV, coefficient of variance; SD, the standard deviation; ARV, average real variability.

*Triglyceride levels, Hs-CRP levels, the SD of fasting plasma glucose levels, the variability independent of the mean and the coefficient of variability are presented as median (interquartile range).

Table S3. Baseline Characteristics Grouped by the Coefficient of Variability of Fasting Plasma Glucose Levels

Variables	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	P
	N=98554	N=24635	N=24634	N=24656	N=24629	value
Age, y	53.63±12.34	52.25±12.35	52.66±12.31	53.81±12.42	55.79±11.97	<0.01
Male sex, n (%)	77688 (78.83)	19190 (77.90)	19053 (77.34)	19553 (79.30)	19892 (80.77)	<0.01
Comorbidities						
Hypertension, n (%)	15490 (15.72)	3311 (13.44)	3561 (14.46)	3894 (15.79)	4724 (19.18)	<0.01
Diabetes mellitus, n (%)	4388 (4.45)	465 (1.89)	551 (2.24)	799 (3.24)	2573 (10.45)	<0.01
Dyslipidemia, n (%)	4648(4.72)	953 (3.87)	1090 (4.42)	1228 (4.98)	1377 (5.59)	<0.01
CKD, eGFR <60 mL/min, n (%)	8359 (8.48)	1987 (8.07)	1842 (7.48)	2067 (8.38)	2463 (10.00)	<0.01
Medications						
Antihypertensive agents, n (%)	14392 (14.60)	3013 (12.23)	3292 (13.36)	3625 (14.70)	4462 (18.12)	<0.01
Hypoglycemic agents, n (%)	3805 (3.86)	399 (1.62)	463 (1.88)	689 (2.79)	2254 (9.15)	<0.01
Lipid-lowers agents, n (%)	969 (0.98)	162 (0.66)	199 (0.81)	254 (1.03)	354 (1.44)	<0.01
Lifestyle						
Current smoker, n (%)	33595 (34.09)	8270 (33.57)	8229 (33.41)	8565 (34.74)	8531 (34.64)	<0.01
Current alcohol use, n (%)	34799 (35.31)	8877 (36.03)	8643 (35.09)	8819 (35.77)	8460 (34.35)	<0.01
Regular exercise, n (%)	69113 (70.13)	17576 (71.35)	17255 (70.05)	17180 (69.68)	17102 (69.44)	<0.01
Low-income level, n (%)	51514 (52.27)	13337 (54.14)	12655 (51.37)	12610 (51.14)	12912 (52.43)	<0.01

Health examination						
Body weight, kg	71.13±11.28	70.78±11.26	70.94±11.33	71.07±11.23	71.74±11.30	<0.01
BMI, kg/m ²	25.08±3.40	24.92±3.36	25.00±3.35	25.05±3.39	25.36±3.47	<0.01
RHR, bpm	73.64±10.49	73.13±10.07	73.16±10.12	73.48±10.42	74.77±11.22	<0.01
SBP, mmHg	132.01±20.13	130.39±20.13	130.62±19.72	132.16±19.99	134.86±20.35	<0.01
DBP, mmHg	84.71±11.16	84.18±11.14	84.26±11.10	84.79±11.21	85.62±11.15	<0.01
FPG, mmol/L	5.69±1.85	5.34±0.97	5.39±1.03	5.55±1.27	6.48±3.05	<0.01
TC, mmol/L	5.01±1.38	4.95±1.19	4.98±1.25	5.02±1.64	5.08±1.38	<0.01
*TG, mmol/L	1.29 (0.92,1.92)	1.25 (0.88,1.84)	1.25 (0.90,1.86)	1.29 (0.92,1.90)	1.37 (0.99,2.06)	<0.01
LDL-C, mmol/L	2.62±1.07	2.62±0.91	2.64±1.17	2.62±1.10	2.59±1.09	<0.01
HDL-C, mmol/L	1.54±0.53	1.53±0.51	1.54±0.51	1.55±0.52	1.55±0.58	<0.01
Cr, μmol/L	82.56±28.18	82.14±23.77	81.81±26.80	82.54±27.74	83.76±33.50	<0.01
eGFR, mL/min	88.79±20.75	89.68±21.24	89.70±19.70	88.70±20.39	87.06±21.50	<0.01
*Hs-CRP, mg/L	1.20 (0.54,2.77)	1.18 (0.55,2.68)	1.10 (0.50,2.60)	1.16 (0.56,2.70)	1.30 (0.59,3.10)	<0.01
The number of FBP measurements						<0.01
2	41965 (42.58)	13609 (55.24)	8968 (36.40)	8858 (35.93)	10530 (42.75)	
3	56589 (57.42)	11026 (44.76)	15666 (63.60)	15798 (64.07)	14099 (57.25)	
FBP Variability						
*SD	0.43 (0.24,0.71)	0.14 (0.08,0.19)	0.33 (0.28,0.38)	0.54 (0.47,0.62)	1.01 (0.81,1.52)	<0.01
*ARV	0.54 (0.30,0.94)	0.18 (0.10,0.25)	0.42 (0.35,0.52)	0.70 (0.57,0.86)	1.35 (1.04,2.00)	<0.01

*VIM	0.43 (0.24,0.71)	0.14 (0.08,0.19)	0.33 (0.28,0.38)	0.54 (0.47,0.62)	1.01 (0.81,1.52)	<0.01
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Note: Q1, the coefficient of variability of FPG < 4.56 mmol/L; Q2, 4.56 mmol/L ≤ the coefficient of variability of FPG < 8.14 mmol/L; Q3, 8.14 mmol/L ≤ the coefficient of variability of FPG < 13.20 mmol/L; Q4, the coefficient of variability of FPG ≥ 13.20 mmol/L.

Low-income level: income ≥ 800 Renminbi/month.

Continuous variables are presented as mean ± SD, and categorical variables are presented as percentage.

Abbreviations: CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; Scr, serum creatinine levels; BMI, body mass index; DBP, diastolic blood pressure; SBP, systolic blood pressure; FBG, fasting blood glucose; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; RHR, resting heart rate; TC, total cholesterol; TG, triglyceride; Hs-CRP, High-sensitivity C-reactive protein; VIM, variability independent of mean; SD, the standard deviation; ARV, average real variability.

*Triglyceride levels, Hs-CRP levels, the SD of fasting plasma glucose levels, the variability independent of the mean and the average real variability the coefficient of variability are presented as median (interquartile range).

Table S4. Baseline Characteristics Grouped by Standard Deviation of Fasting Plasma Glucose Levels

Variables	Total	Quartile 1	Quartile 2	Quartile 3	Quartile 4	P
	N=98554	N=24801	N=24768	N=24362	N=24623	value
Age, y	53.63±12.34	51.97±12.45	52.52±12.41	53.85±12.38	56.18±11.65	<0.01
Male sex, n (%)	77688 (78.83)	19122 (77.10)	19031 (76.84)	19387 (79.58)	20148 (81.83)	<0.01
Comorbidities						
Hypertension, n (%)	15490 (15.72)	3204 (12.92)	3441 (13.89)	3819 (15.68)	5026 (20.41)	<0.01
Diabetes mellitus, n (%)	4388 (4.45)	327 (1.32)	331 (1.34)	533 (2.19)	3197 (12.98)	<0.01
Dyslipidemia, n (%)	4648(4.72)	933(3.76)	1031(4.16)	1183(4.86)	1501(6.01)	<0.01
CKD, eGFR <60 mL/min, n (%)	8359 (8.48)	1977 (7.97)	1899 (7.67)	1973 (8.10)	2510 (10.19)	<0.01
Medications						
Antihypertensive agents, n (%)	14392 (14.60)	2908 (11.73)	3177 (12.83)	3561 (14.62)	4746 (19.27)	<0.01
Hypoglycemic agents, n (%)	3805 (3.86)	273 (1.10)	270 (1.09)	459 (1.88)	2803 (11.38)	<0.01
Lipid-lowers agents, n (%)	969 (0.98)	153 (0.62)	199 (0.80)	235 (0.96)	382 (1.55)	<0.01
Lifestyle						
Current smoker, n (%)	33595 (34.09)	8313 (33.52)	8163 (32.96)	8551 (35.10)	8568 (34.80)	<0.01
Current alcohol use, n (%)	34799 (35.31)	8848 (35.68)	8577 (34.63)	8838 (36.28)	8536 (34.67)	<0.01
Regular exercise, n (%)	69113 (70.13)	17689 (71.32)	17353 (70.06)	16942 (69.54)	17129 (69.57)	<0.01
Low-income level, n (%)	51514 (52.27)	13452 (54.24)	12773 (51.57)	12432 (51.03)	12857 (52.22)	<0.01

Health examination						
Body weight, kg	71.13±11.28	70.51±11.29	70.78±11.32	71.06±11.18	72.18±11.27	<0.01
BMI, kg/m ²	25.08±3.40	24.84±3.36	24.96±3.35	25.04±3.37	25.49±3.47	<0.01
RHR, bpm	73.64±10.49	72.97±9.99	72.92±10.06	73.44±10.40	75.23±11.30	<0.01
SBP, mmHg	132.01±20.13	129.76±20.02	130.09±19.56	132.25±19.93	135.96±20.39	<0.01
DBP, mmHg	84.71±11.16	83.93±11.14	83.99±11.05	84.87±11.16	86.06±11.17	<0.01
FPG, mmol/L	5.69±1.85	5.22±0.74	5.27±0.77	5.45±0.93	6.83±3.16	<0.01
TC, mmol/L	5.01±1.38	4.93±1.12	4.96±1.37	5.02±1.58	5.12±1.39	<0.01
*TG, mmol/L	1.29 (0.92, 1.92)	1.23 (0.87, 1.81)	1.24 (0.89, 1.83)	1.30 (0.92, 1.89)	1.40 (1.01, 2.13)	<0.01
LDL-C, mmol/L	2.62±1.07	2.61±0.91	2.62±1.07	2.62±1.20	2.63±1.09	0.07
HDL-C, mmol/L	1.54±0.53	1.53±0.52	1.54±0.50	1.55±0.51	1.54±0.58	<0.01
Cr, µmol/L	82.56±28.18	82.03±23.85	81.85±27.42	82.41±26.47	83.96±33.97	<0.01
eGFR, mL/min	88.79±20.75	89.83±21.29	89.68±19.81	88.75±19.98	86.87±21.70	<0.01
*Hs-CRP	1.20 (0.54, 2.77)	1.13 (0.53, 2.62)	1.10 (0.50, 2.60)	1.14 (0.54, 2.70)	1.30 (0.60, 3.10)	<0.01
The number of FBP measurements						<0.01
2	41965 (42.58)	13554 (54.65)	9029 (36.45)	8825 (36.22)	10557 (42.87)	
3	56589 (57.42)	11247 (45.35)	15739 (63.55)	15537 (63.78)	14066 (57.13)	
FBP Variability						
*CV	8.14 (4.56, 13.20)	2.69(1.50, 3.70)	6.39(5.48, 7.40)	10.44(9.16,11.92)	18.25(15.13,24.05)	<0.01
*VIM	0.43 (0.24, 0.71)	0.14 (0.08, 0.19)	0.33 (0.28, 0.38)	0.55 (0.49, 0.62)	1.04 (0.84, 1.53)	<0.01

*ARV	0.54 (0.30, 0.94)	0.18 (0.10, 0.25)	0.42 (0.35, 0.52)	0.71 (0.59, 0.85)	1.39 (1.09, 2.02)	<0.01
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Note: Q1, standard deviation of FBG < 0.24; Q2, 0.24 ≤ standard deviation of FBG < 0.43; Q3, 0.43 ≤ standard deviation of FBG < 0.77; Q4, standard deviation of FBG ≥ 0.77.

Low-income level: income ≥ 800 Renminbi/month.

Continuous variables are presented as mean ± SD, and categorical variables are presented as percentage.

Abbreviations: CKD, chronic kidney disease; eGFR, estimated glomerular filtration rate; Scr, serum creatinine levels; BMI, body mass index; DBP, diastolic blood pressure; SBP, systolic blood pressure; FBG, fasting blood glucose; HDL-C, high-density lipoprotein cholesterol; LDL-C, low-density lipoprotein cholesterol; RHR, resting heart rate; TC, total cholesterol; TG, triglyceride; Hs-CRP, High-sensitivity C-reactive protein; CV, coefficient of variance; VIM, variability independent of mean; ARV, average real variability.

*Triglyceride levels, Hs-CRP levels, the standard deviation of fasting plasma glucose levels, the variability independent of the mean and the average real variability the coefficient of variability are presented as median (interquartile range).

Table S5. Subgroup Analyses (Impact of the Average Real Variability of Fasting Plasma Glucose Levels)

Variables	Group	Patients, n	Events, case, n (%)	IR*	Model 1 HR (95%CI)	P value	Model 2 HR (95%CI)	P value	Model 3 HR (95%CI)	P value
Age						0.0390†		0.0453†		0.0471†
<65 y	Q1	21460	118 (0.55)	0.87	1(reference)		1(reference)		1(reference)	
	Q2	20715	115 (0.56)	0.89	0.991(0.767-1.282)	0.9470	0.971(0.751-1.255)	0.8206	0.974(0.753-1.259)	0.8408
	Q3	21587	143 (0.66)	1.11	1.150(0.901-1.468)	0.2609	1.086(0.851-1.387)	0.5073	1.067(0.836-1.363)	0.6018
	Q4	19351	240 (1.24)	0.95	1.868(1.497-2.330)	<0.0001	1.411(1.118-1.780)	0.0038	1.356(1.074-1.712)	0.0104
≥65 y	Q1	3347	102 (3.05)	2.89	1(reference)		1(reference)		1(reference)	
	Q2	3574	119 (3.33)	5.47	1.125(0.864-1.466)	0.3819	1.122(0.861-1.462)	0.3924	1.118(0.858-1.458)	0.4075
	Q3	4381	159 (3.63)	5.92	1.241(0.968-1.592)	0.0885	1.217(0.948-1.561)	0.1229	1.209(0.942-1.551)	0.1363
	Q4	5139	222 (4.32)	6.91	1.466(1.159-1.853)	0.0014	1.297(1.015-1.658)	0.0376	1.276(0.998-1.633)	0.0521
Sex						0.3353†		0.4998†		0.5844†
Male	Q1	19037	188 (0.99)	1.56	1(reference)		1(reference)		1(reference)	
	Q2	18766	200 (1.07)	1.71	1.061(0.869-1.294)	0.5615	1.048(0.859-1.279)	0.6428	1.050(0.860-1.281)	0.6330
	Q3	19858	264 (1.33)	2.12	1.233(1.023-1.487)	0.0280	1.187(0.984-1.431)	0.0735	1.175(0.974-1.418)	0.0912
	Q4	20027	388 (1.94)	3.04	1.629(1.368-1.939)	<0.0001	1.359(1.133-1.630)	0.0010	1.325(1.104-1.590)	0.0025
Female	Q1	5770	32 (0.55)	0.90	1(reference)		1(reference)		1(reference)	
	Q2	5523	34 (0.62)	1.01	1.063(0.656-1.722)	0.8051	1.077(0.664-1.748)	0.7628	1.063(0.655-1.726)	0.8034

	Q3	5110	38 (0.74)	1.21	1.092(0.682-1.749)	0.7127	1.040(0.649-1.667)	0.8711	1.005(0.627-1.613)	0.9821
	Q4	4463	74 (1.66)	2.67	2.023(1.335-3.067)	0.0009	1.401(0.898-2.187)	0.1376	1.314(0.840-2.056)	0.2317
Hypertension						0.3615†		0.2669†		0.2186†
Yes	Q1	3218	56 (1.74)	2.78	1(reference)		1(reference)		1(reference)	
	Q2	3406	75 (2.20)	3.58	1.271(0.899-1.796)	0.1752	1.281(0.906-1.812)	0.1615	1.299(0.919-1.838)	0.1388
	Q3	3923	104 (2.56)	4.30	1.483(1.072-2.053)	0.0174	1.465(1.058-2.030)	0.0215	1.469(1.061-2.036)	0.0206
	Q4	4943	167 (3.38)	5.39	1.781(1.316-2.411)	0.0002	1.510(1.095-2.082)	0.0119	1.497(1.085-2.065)	0.0141
No	Q1	21589	164 (0.76)	1.21	1(reference)		1(reference)		1(reference)	
	Q2	20883	159 (0.76)	1.23	0.977(0.786-1.215)	0.8355	0.980(0.788-1.219)	0.8586	0.968(0.778-1.205)	0.7724
	Q3	21045	198 (0.94)	1.50	1.090(0.886-1.340)	0.4163	1.071(0.870-1.318)	0.5177	1.048(0.851-1.289)	0.6604
	Q4	19547	295 (1.51)	2.37	1.554(1.284-1.882)	<0.0001	1.332(1.092-1.624)	0.0047	1.277(1.047-1.558)	0.0160
Diabetes mellitus						0.5875†		0.6273†		0.5647†
Yes	Q1	315	5 (1.59)	2.53	1(reference)		1(reference)		1(reference)	
	Q2	355	11 (3.10)	5.01	2.038(0.708-5.867)	0.1868	1.963(0.681-6.654)	0.2116	2.008(0.696-5.789)	0.1971
	Q3	590	16 (2.71)	4.48	1.721(0.630-4.698)	0.2893	1.635(0.598-4.467)	0.3377	1.670(0.611-4.569)	0.3176
	Q4	3128	113 (3.61)	5.92	2.350(0.959-5.756)	0.0617	2.044(0.829-5.042)	0.1206	2.022(0.819-4.991)	0.1268
No	Q1	24492	215 (0.88)	1.39	1(reference)		1(reference)		1(reference)	
	Q2	23934	223 (0.93)	1.50	1.036(0.859-1.249)	0.7126	1.026(0.850-1.237)	0.7908	1.020(0.845-1.230)	0.8378
	Q3	24378	286 (1.17)	1.88	1.191(0.998-1.421)	0.0532	1.153(0.966-1.377)	0.1143	1.134(0.950-1.354)	0.1616

	Q4	21362	349 (1.63)	2.56	1.498(1.264-1.776)	<0.0001	1.343(1.129-1.598)	0.0009	1.294(1.087-1.540)	0.0038
CKD						0.8165†		0.8317†		0.8413†
Yes	Q1	1869	39 (2.09)	3.21	1(reference)		1(reference)		1(reference)	
	Q2	1898	44 (2.32)	3.65	1.120(0.728-1.724)	0.6060	1.091(0.708-1.680)	0.6934	1.083(0.703-1.668)	0.7717
	Q3	2030	61 (3.00)	4.70	1.425(0.953-2.130)	0.0841	1.360(0.909-2.035)	0.1343	1.346(0.899-2.014)	0.1489
	Q4	2562	95 (3.71)	5.71	1.735(1.195-2.520)	0.0038	1.450(0.975-2.156)	0.0665	1.432(0.962-2.132)	0.0773
No	Q1	22938	181 (0.79)	1.26	1(reference)		1(reference)		1(reference)	
	Q2	22391	190 (0.85)	1.37	1.046(0.853-1.282)	0.6646	1.036(0.845-1.270)	0.7315	1.034(0.843-1.267)	0.7487
	Q3	22938	241 (1.05)	1.69	1.172(0.966-1.421)	0.1068	1.128(0.930-1.368)	0.2214	1.111(0.916-1.348)	0.2851
	Q4	21928	367 (1.67)	2.64	1.660(1.389-1.985)	<0.0001	1.352(1.122-1.629)	0.0015	1.309(1.086-1.577)	0.0048
BMI						0.3063†		0.2339†		0.2108†
<25 kg/m ²	Q1	13505	97 (0.72)	1.14	1(reference)		1(reference)		1(reference)	
	Q2	12744	104 (0.82)	1.31	1.129(0.856-1.488)	0.3915	1.114(0.845-1.469)	0.4442	1.126(0.853-1.485)	0.4023
	Q3	12871	131 (1.02)	1.62	1.260(0.969-1.638)	0.0849	1.230(0.946-1.599)	0.1230	1.230(0.946-1.600)	0.1227
	Q4	11580	203 (1.75)	2.75	1.924(1.510-2.452)	<0.0001	1.537(1.192-1.982)	0.0009	1.536(1.191-1.981)	0.0009
≥25 kg/m ²	Q1	11302	123 (1.09)	1.74	1(reference)		1(reference)		1(reference)	
	Q2	11545	130 (1.13)	1.82	0.991(0.775-1.269)	0.9454	0.987(0.771-1.263)	0.9150	0.769(0.769-1.259)	0.8985
	Q3	12097	171 (1.41)	2.27	1.156(0.917-1.457)	0.2213	1.108(0.878-1.397)	0.3875	1.867(0.867-1.380)	0.4477
	Q4	12910	259 (2.01)	3.18	1.456(1.174-1.805)	0.0006	1.215(0.970-1.522)	0.0894	1.938(0.938-1.472)	0.1601

*IR (incidence rate) presented as per 1000 person-years

†P for interaction

Model 1, adjusted for age and sex

Model 2, Model 1 + RHR, LDL-C, HDL-C, baseline FPG, hypotensive drugs, hypoglycemic drugs, hypertension and diabetes mellitus

Model 3, Model 2 + SBP, DBP, BMI, Hs-CRP, smoking status, drinking status, and physical exercise

Abbreviations: CI, confidence interval; HR, hazard ratio; RHR, resting heart rate; DBP, diastolic blood pressure; SBP, systolic blood pressure; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; BMI, body mass index; Hs-CRP, High-sensitivity C-reactive protein; FPG, fasting plasma glucose.

Table S6. Subgroup Analyses (Impact of the Variability Independent of the Mean of Fasting Plasma Glucose Levels Q4)

Variables	Group	Patients, n	Events, case, n (%)	IR*	Model 1 HR (95%CI)	P value	Model 2 HR (95%CI)	P value	Model 3 HR (95%CI)	P value
Age						0.0899†		0.1007†		0.1037†
<65 y	Q1	21466	120(0.55)	0.88	1(reference)		1(reference)		1(reference)	
	Q2	21094	124(0.56)	0.94	1.047(0.814-1.346)	0.7211	1.033(0.803-1.327)	0.8018	1.036(0.806-1.332)	0.7838
	Q3	22556	157(0.66)	1.11	1.149(0.905-1.457)	0.2539	1.089(0.858-1.382)	0.4833	1.073(0.846-1.363)	0.5605
	Q4	16997	215(1.24)	2.00	1.854(1.482-2.320)	<.0001	1.354(1.067-1.719)	0.0126	1.298(1.023-1.648)	0.0321
≥65 y	Q1	3343	104(3.05)	4.95	1(reference)		1(reference)		1(reference)	
	Q2	3669	115(3.33)	5.11	1.036(0.795-1.351)	0.7931	1.032(0.791-1.345)	0.8168	1.030(0.790-1.343)	0.8266
	Q3	4778	181(3.63)	6.20	1.266(0.995-1.612)	0.0552	1.248(0.980-1.590)	0.072	1.241(0.974-1.581)	0.0805
	Q4	4651	202(4.32)	6.99	1.458(1.151-1.848)	0.0018	1.276(0.993-1.638)	0.0564	1.251(0.973-1.607)	0.0807
Sex						0.0624†		0.1252†		0.1904†
Male	Q1	19130	192(0.99)	1.57	1(reference)		1(reference)		1(reference)	
	Q2	19026	204(1.07)	1.71	1.054(0.865-1.283)	0.6034	1.042(0.856-1.269)	0.6801	1.043(0.856-1.270)	0.6777
	Q3	21762	298(1.33)	2.19	1.266(1.056-1.518)	0.0108	1.225(1.022-1.469)	0.0284	1.212(1.011-1.454)	0.0379
	Q4	17770	346(1.94)	3.07	1.603(1.343-1.913)	<.0001	1.308(1.087-1.576)	0.0046	1.272(1.056-1.533)	0.0113
Female	Q1	5679	32(0.55)	0.91	1(reference)		1(reference)		1(reference)	
	Q2	5737	35(0.62)	1.00	1.015(0.629-1.640)	0.951	1.027(0.635-1.661)	0.9121	1.024(0.633-1.656)	0.924

	Q3	5572	40(0.74)	1.18	0.982(0.616-1.564)	0.9378	0.930(0.583-1.484)	0.7608	0.912(0.571-1.455)	0.6979
	Q4	3878	71(1.66)	2.96	2.132(1.403-3.241)	0.0004	1.456(0.926-2.287)	0.1036	1.342(0.851-2.117)	0.2058
Hypertension						0.1657†		0.1213†		0.1350†
Yes	Q1	3204	62(1.74)	3.06	1(reference)		1(reference)		1(reference)	
	Q2	3444	65(2.20)	3.06	0.956(0.675-1.353)	0.7979	0.968(0.683-1.371)	0.8534	0.975(0.688-1.381)	0.8851
	Q3	4313	123(2.65)	4.63	1.428(1.052-1.938)	0.0223	1.421(1.046-1.932)	0.0248	1.416(1.042-1.925)	0.0263
	Q4	4529	152(3.38)	5.38	1.587(1.181-2.133)	0.0022	1.329(0.967-1.825)	0.0793	1.317(0.958-1.810)	0.0904
No	Q1	21605	162(0.76)	1.18	1(reference)		1(reference)		1(reference)	
	Q2	21319	174(0.76)	1.31	1.075(0.868-1.332)	0.5077	1.085(0.876-1.344)	0.4543	1.075(0.868-1.332)	0.5054
	Q3	23021	215(0.94)	1.50	1.109(0.904-1.360)	0.3198	1.105(0.901-1.355)	0.3393	1.083(0.883-1.329)	0.4448
	Q4	17119	265(1.51)	2.44	1.603(1.318-1.949)	<0.0001	1.356(1.105-1.664)	0.0036	1.289(1.050-1.583)	0.0152
Diabetes mellitus						0.4489†		0.4114†		0.4018†
Yes	Q1	329	5(1.59)	2.40	1(reference)		1(reference)		1(reference)	
	Q2	330	12(3.10)	5.85	2.343(0.826-6.650)	0.1097	2.312(0.814-6.566)	0.1154	2.380(0.837-6.763)	0.1037
	Q3	641	22(2.71)	5.64	2.228(0.844-5.884)	0.106	2.149(0.813-5.681)	0.1228	2.126(0.804-5.624)	0.1285
	Q4	3088	106(3.61)	5.63	2.295(0.936-5.628)	0.0696	2.004(0.811-4.948)	0.1319	1.982(0.802-4.901)	0.1384
No	Q1	24480	219(0.88)	1.41	1(reference)		1(reference)		1(reference)	
	Q2	24433	227(0.93)	1.49	1.021(0.848-1.229)	0.8295	1.010(0.839-1.217)	0.9137	1.007(0.837-1.213)	0.9391
	Q3	26693	316(1.17)	1.90	1.190(1.001-1.413)	0.0484	1.158(0.975-1.377)	0.0951	1.142(0.961-1.357)	0.1321

	Q4	18560	311(1.63)	2.64	1.496(1.258-1.779)	<.0001	1.321(1.106-1.578)	0.0021	1.267(1.060-1.515)	0.0092
CKD						0.7092†		0.7087†		0.6783†
Yes	Q1	1977	39(2.09)	3.00	1(reference)		1(reference)		1(reference)	
	Q2	1898	49(2.32)	4.05	1.301(0.854-1.981)	0.2204	1.297(0.851-1.975)	0.226	1.292(0.848-1.968)	0.2328
	Q3	2221	61(3.00)	4.30	1.377(0.921-2.059)	0.1185	1.334(0.892-1.996)	0.161	1.318(0.880-1.973)	0.1801
	Q4	2263	90(3.71)	6.18	1.969(1.352-2.867)	0.0004	1.678(1.120-2.513)	0.012	1.641(1.094-2.460)	0.0165
No	Q1	22832	185(0.79)	1.28	1(reference)		1(reference)		1(reference)	
	Q2	22865	190(0.85)	1.34	1.000(0.817-1.224)	0.9984	0.990(0.809-1.213)	0.9244	0.986(0.805-1.208)	0.893
	Q3	25113	277(1.05)	1.77	1.203(0.998-1.449)	0.0523	1.158(0.961-1.395)	0.1238	1.143(0.948-1.377)	0.1609
	Q4	19385	327(1.67)	2.68	1.608(1.342-1.926)	<0.0001	1.271(1.051-1.538)	0.0136	1.223(1.011-1.481)	0.0386
BMI						0.4249†		0.3302†		0.3172†
<25 kg/m ²	Q1	13529	100(0.72)	1.61	1(reference)		1(reference)		1(reference)	
	Q2	13088	108(0.82)	1.32	1.115(0.849-1.464)	0.4331	1.097(0.835-1.440)	0.5063	1.101(0.838-1.445)	0.4905
	Q3	14067	148(1.02)	1.69	1.287(0.998-1.659)	0.0515	1.254(0.972-1.616)	0.0812	1.259(0.976-1.623)	0.0762
	Q4	10016	179(1.75)	2.81	1.889(1.479-2.414)	<0.0001	1.471(1.135-1.907)	0.0036	1.467(1.131-1.902)	0.0039
≥25 kg/m ²	Q1	11280	124(1.09)	1.74	1(reference)		1(reference)		1(reference)	
	Q2	11675	131(1.13)	1.81	0.981(0.768-1.255)	0.8813	0.982(0.768-1.256)	0.8871	0.987(0.772-1.262)	0.9153
	Q3	13267	190(1.41)	2.30	1.155(0.921-1.448)	0.2137	1.114(0.888-1.398)	0.3491	1.103(0.879-1.384)	0.3963
	Q4	11632	238(2.01)	3.26	1.458(1.173-1.812)	0.0007	1.198(0.953-1.506)	0.1225	1.159(0.921-1.458)	0.2086

*IR (incidence rate) presented as per 1000 person-years

†P for interaction

Model 1, adjusted for age and sex

Model 2, Model 1 + RHR, LDL-C, HDL-C, baseline FPG, hypotensive drugs, hypoglycemic drugs, hypertension and diabetes mellitus

Model 3, Model 2 + SBP, DBP, BMI, Hs-CRP, smoking status, drinking status, and physical exercise

Abbreviations: CI, confidence interval; HR, hazard ratio; RHR, resting heart rate; DBP, diastolic blood pressure; SBP, systolic blood pressure; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; BMI, body mass index; Hs-CRP, High-sensitivity C-reactive protein; FPG, fasting plasma glucose.

Table S7. Subgroup Analyses (Impact of the Coefficient of Variability of Fasting Plasma Glucose Levels Q4)

Variables	Group	Patients, n	Events, case, n (%)	IR*	Model 1 HR (95%CI)	P value	Model 2 HR (95%CI)	P value	Model 3 HR (95%CI)	P value
Age						0.3232†		0.3292†		0.3600†
<65 y	Q1	21260	119(0.55)	0.88	1(reference)		1(reference)		1(reference)	
	Q2	20987	143(0.56)	1.09	1.221(0.958-1.558)	0.1069	1.196(0.937-1.525)	0.1504	1.201(0.942-1.533)	0.1399
	Q3	20383	147(0.66)	1.15	1.220(0.958-1.554)	0.1067	1.155(0.907-1.472)	0.2433	1.144(0.898-1.458)	0.2773
	Q4	19483	207(1.24)	1.68	1.632(1.302-2.046)	<0.0001	1.291(1.023-1.630)	0.0315	1.256(0.995-1.586)	0.0556
≥65 y	Q1	3375	110(3.05)	5.19	1(reference)		1(reference)		1(reference)	
	Q2	3647	112(3.33)	5.02	0.965(0.742-1.255)	0.7903	0.957(0.735-1.245)	0.7415	0.960(0.738-1.249)	0.7600
	Q3	4273	164(3.63)	6.29	1.216(0.955-1.549)	0.1126	1.201(0.942-1.529)	0.1388	1.196(0.939-1.524)	0.1471
	Q4	5146	216(4.32)	6.76	1.334(1.060-1.678)	0.014	1.223(0.966-1.549)	0.0944	1.210(0.955-1.533)	0.1142
Sex						0.2122†		0.2764†		0.3270†
Male	Q1	19190	196(0.99)	1.60	1(reference)		1(reference)		1(reference)	
	Q2	19053	215(1.07)	1.80	1.095(0.903-1.329)	0.3566	1.080(0.890-1.311)	0.4360	1.086(0.895-1.318)	0.4035
	Q3	19553	275(1.33)	2.25	1.286(1.070-1.544)	0.0072	1.246(1.037-1.497)	0.0188	1.238(1.031-1.488)	0.0224
	Q4	19892	354(1.94)	2.81	1.464(1.230-1.744)	<0.0001	1.270(1.062-1.519)	0.0089	1.250(1.045-1.496)	0.0147
Female	Q1	5445	33(0.55)	0.98	1(reference)		1(reference)		1(reference)	
	Q2	5581	40(0.62)	1.18	1.129(0.712-1.790)	0.6057	1.116(0.703-1.771)	0.6407	1.118(0.704-1.776)	0.6360

	Q3	5103	36(0.74)	1.16	0.948(0.591-1.522)	0.8262	0.908(0.565-1.460)	0.6897	0.886(0.551-1.426)	0.6179
	Q4	4737	69(1.66)	2.35	1.725(1.138-2.613)	0.0101	1.272(0.823-1.967)	0.2783	1.193(0.770-1.849)	0.4295
Hypertension						0.6257†		0.5918†		0.6036†
Yes	Q1	3311	65(1.74)	3.11	1(reference)		1(reference)		1(reference)	
	Q2	3561	76(2.20)	3.47	1.071(0.769-1.491)	0.6865	1.078(0.774-1.503)	0.6564	1.095(0.786-1.526)	0.592
	Q3	3894	109(2.65)	4.55	1.388(1.021-1.887)	0.0365	1.369(1.006-1.863)	0.0459	1.365(1.003-1.858)	0.0481
	Q4	4742	152(3.38)	5.15	1.499(1.121-2.005)	0.0063	1.323(0.978-1.789)	0.0692	1.313(0.970-1.777)	0.0779
No	Q1	21324	164(0.76)	1.21	1(reference)		1(reference)		1(reference)	
	Q2	21073	179(0.76)	1.36	1.100(0.890-1.359)	0.3799	1.110(0.898-1.372)	0.3366	1.102(0.892-1.363)	0.368
	Q3	20762	202(0.94)	1.56	1.147(0.934-1.410)	0.1911	1.143(0.929-1.404)	0.2060	1.126(0.916-1.385)	0.2594
	Q4	19905	271(1.51)	2.15	1.425(1.173-1.731)	0.0004	1.275(1.045-1.555)	0.0165	1.237(1.014-1.509)	0.0358
Diabetes mellitus						0.6364†		0.6647†		0.6574†
Yes	Q1	465	10(1.59)	3.39	1(reference)		1(reference)		1(reference)	
	Q2	551	20(3.10)	5.93	1.675(0.784-3.579)	0.1831	1.616(0.756-3.455)	0.2155	1.667(0.779-3.569)	0.1881
	Q3	799	27(2.71)	5.55	1.551(0.750-3.205)	0.2361	1.461(0.706-3.024)	0.3072	1.455(0.702-3.016)	0.3126
	Q4	2573	88(3.61)	5.62	1.575(0.818-3.031)	0.1739	1.440(0.746-2.780)	0.2778	1.427(0.738-2.759)	0.2906
No	Q1	24170	219(0.88)	1.43	1(reference)		1(reference)		1(reference)	
	Q2	24083	235(0.93)	1.57	1.068(0.888-1.284)	0.484	1.059(0.881-1.273)	0.5448	1.060(0.882-1.274)	0.5361
	Q3	23857	284(1.17)	1.91	1.203(1.008-1.435)	0.0401	1.179(0.988-1.407)	0.0673	1.168(0.979-1.393)	0.0852

	Q4	22056	335(1.63)	2.40	1.378(1.162-1.634)	0.0002	1.271(1.070-1.511)	0.0065	1.237(1.041-1.471)	0.0159
CKD						0.5380†		0.5827†		0.5637†
Yes	Q1	1987	44(2.09)	3.38	1(reference)		1(reference)		1(reference)	
	Q2	1842	43(2.32)	3.66	1.061(0.697-1.616)	0.7818	1.050(0.689-1.600)	0.8196	1.049(0.689-1.599)	0.8222
	Q3	2067	57(3.00)	4.31	1.203(0.812-1.783)	0.3572	1.157(0.779-1.716)	0.4701	1.148(0.773-1.704)	0.4937
	Q4	2463	95(3.71)	6.01	1.732(1.212-2.476)	0.0026	1.548(1.068-2.243)	0.0209	1.518(1.047-2.201)	0.0277
No	Q1	22648	185(0.79)	1.29	1(reference)		1(reference)		1(reference)	
	Q2	22792	212(0.85)	1.50	1.113(0.914-1.355)	0.2883	1.095(0.899-1.334)	0.3681	1.096(0.900-1.335)	0.3619
	Q3	22589	254(1.05)	1.81	1.249(1.033-1.509)	0.0217	1.204(0.996-1.455)	0.0554	1.193(0.987-1.443)	0.0684
	Q4	22166	328(1.67)	2.34	1.442(1.203-1.727)	<0.0001	1.218(1.012-1.467)	0.0369	1.190(0.989-1.433)	0.0660
BMI						0.5458†		0.4064†		0.3640†
<25 kg/m ²	Q1	13175	100(0.72)	1.91	1(reference)		1(reference)		1(reference)	
	Q2	12869	111(0.82)	1.38	1.142(0.871-1.496)	0.3363	1.121(0.855-1.469)	0.4091	1.128(0.861-1.479)	0.3820
	Q3	12757	138(1.02)	1.73	1.314(1.016-1.700)	0.0378	1.287(0.995-1.666)	0.0547	1.293(0.999-1.673)	0.0511
	Q4	11908	186(1.75)	2.46	1.670(1.310-2.131)	<0.0001	1.410(1.098-1.810)	0.0071	1.412(1.099-1.813)	0.0069
≥25 kg/m ²	Q1	11460	129(1.09)	1.78	1(reference)		1(reference)		1(reference)	
	Q2	11774	144(1.13)	1.98	1.056(0.833-1.340)	0.6517	1.047(0.825-1.328)	0.7064	1.052(0.830-1.335)	0.6736
	Q3	11899	173(1.41)	2.34	1.164(0.926-1.462)	0.1925	1.121(0.892-1.408)	0.3288	1.113(0.885-1.398)	0.3605
	Q4	12721	237(2.01)	2.96	1.338(1.079-1.659)	0.0079	1.155(0.926-1.441)	0.1999	1.127(0.903-1.407)	0.2887

*IR (incidence rate) presented as per 1000 person-years

†P for interaction

Model 1, adjusted for age and sex

Model 2, Model 1 + RHR, LDL-C, HDL-C, baseline FPG, hypotensive drugs, hypoglycemic drugs, hypertension and diabetes mellitus

Model 3, Model 2 + SBP, DBP, BMI, Hs-CRP, smoking status, drinking status, and physical exercise

Abbreviations: CI, confidence interval; HR, hazard ratio; RHR, resting heart rate; DBP, diastolic blood pressure; SBP, systolic blood pressure; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; BMI, body mass index; Hs-CRP, High-sensitivity C-reactive protein; FPG, fasting plasma glucose.

Table S8. Subgroup Analyses (Impact of Standard Deviation of Fasting Plasma Glucose Levels Q4)

Variables	Group	Patients, n	Events, case, n (%)	IR*	Model 1 HR (95%CI)	P value	Model 2 HR (95%CI)	P value	Model 3 HR (95%CI)	P value
Age						0.1045†		0.1266†		0.1184†
<65 y	Q1	21459	120(0.55)	0.88	1(reference)		1(reference)		1(reference)	
	Q2	21098	124(0.56)	0.94	1.046(0.814-1.344)	0.7257	1.143(0.875-1.494)	0.3267	1.139(0.872-1.489)	0.3401
	Q3	20139	132(0.66)	1.05	1.086(0.848-1.391)	0.5119	1.242(0.968-1.593)	0.0879	1.219(0.950-1.563)	0.1200
	Q4	19417	240(1.24)	1.95	1.828(1.467-2.278)	<0.0001	1.466(1.159-1.854)	0.0014	1.300(1.017-1.661)	0.0362
≥65 y	Q1	3342	104(3.05)	4.95	1(reference)		1(reference)		1(reference)	
	Q2	3670	115(3.33)	5.11	1.036(0.794-1.350)	0.7955	1.031(0.791-1.345)	0.8196	1.030(0.790-1.343)	0.8290
	Q3	4223	155(3.63)	6.00	1.225(0.956-1.571)	0.1093	1.207(0.941-1.548)	0.1392	1.202(0.937-1.543)	0.1472
	Q4	5206	228(4.32)	7.07	1.471(1.166-1.855)	0.0011	1.312(1.028-1.673)	0.0289	1.286(1.007-1.642)	0.0439
Sex						0.2211†		0.3774†		0.4823†
Male	Q1	19122	192(0.99)	1.57	1(reference)		1(reference)		1(reference)	
	Q2	19031	204(1.07)	1.71	1.053(0.865-1.282)	0.6078	1.042(0.855-1.269)	0.6855	1.042(0.855-1.269)	0.6832
	Q3	19387	252(1.33)	2.07	1.205(0.999-1.454)	0.0517	1.165(0.966-1.407)	0.1106	1.155(0.957-1.394)	0.1342
	Q4	20148	392(1.94)	3.07	1.618(1.361-1.924)	<0.0001	1.354(1.130-1.622)	0.0010	1.318(1.100-1.580)	0.0028
Female	Q1	5678	32(0.55)	0.91	1(reference)		1(reference)		1(reference)	
	Q2	5737	35(0.62)	1.00	1.015(0.629-1.640)	0.9508	1.028(0.636-1.662)	0.9112	1.024(0.633-1.656)	0.9239

	Q3	4975	35(0.74)	1.15	0.976(0.604-1.578)	0.9223	0.934(0.577-1.512)	0.7821	0.917(0.566-1.484)	0.7232
	Q4	4475	76(1.66)	2.75	1.991(1.315-3.013)	0.0011	1.380(0.885-2.151)	0.1554	1.279(0.818-2.001)	0.2808
Hypertension						0.2594†		0.2226†		0.2159†
Yes	Q1	3204	62(1.74)	3.06	1(reference)		1(reference)		1(reference)	
	Q2	3441	65(2.20)	3.06	0.956(0.675-1.354)	0.8016	0.969(0.684-1.372)	0.8575	0.976(0.688-1.382)	0.8895
	Q3	3819	104(2.65)	4.42	1.360(0.993-1.863)	0.0553	1.358(0.991-1.863)	0.0573	1.356(0.988-1.860)	0.0590
	Q4	5026	171(3.38)	5.46	1.620(1.212-2.167)	0.0011	1.395(1.023-1.901)	0.0352	1.382(1.013-1.886)	0.0412
No	Q1	21597	162(0.76)	1.18	1(reference)		1(reference)		1(reference)	
	Q2	21327	174(0.76)	1.31	1.074(0.867-1.330)	0.5131	1.084(0.875-1.342)	0.4624	1.074(0.867-1.330)	0.5138
	Q3	20543	183(0.94)	1.43	1.064(0.861-1.315)	0.5658	1.061(0.858-1.311)	0.5849	1.039(0.841-1.285)	0.7216
	Q4	19597	297(1.51)	2.40	1.585(1.309-1.921)	<0.0001	1.366(1.119-1.667)	0.0021	1.305(1.069-1.593)	0.0090
Diabetes mellitus						0.5170†		0.4708†		0.4362†
Yes	Q1	327	5(1.59)	2.42	1(reference)		1(reference)		1(reference)	
	Q2	331	12(3.10)	5.82	2.320(0.818-6.586)	0.1138	2.287(0.806-6.493)	0.1202	2.348(0.826-6.671)	0.1092
	Q3	533	16(2.71)	4.93	1.944(0.712-5.307)	0.1945	1.858(0.680-5.076)	0.2272	1.838(0.672-5.027)	0.2357
	Q4	3197	112(3.61)	5.75	2.325(0.949-5.696)	0.0650	2.050(0.831-5.057)	0.1190	2.028(0.821-5.009)	0.1251
No	Q1	24474	219(0.88)	1.41	1(reference)		1(reference)		1(reference)	
	Q2	24437	227(0.93)	1.49	1.020(0.847-1.228)	0.8323	1.010(0.839-1.216)	0.9167	1.007(0.836-1.212)	0.9419
	Q3	23829	271(1.17)	1.82	1.147(0.960-1.371)	0.1315	1.117(0.934-1.335)	0.2254	1.103(0.923-1.319)	0.2796

	Q4	21426	356(1.63)	2.62	1.500(1.267-1.775)	<0.0001	1.343(1.130-1.595)	0.0008	1.289(1.085-1.533)	0.004
CKD						0.7320†		0.7316†		0.7186†
Yes	Q1	1977	39(2.09)	3.00	1(reference)		1(reference)		1(reference)	
	Q2	1899	49(2.32)	4.05	1.301(0.854-1.981)	0.2206	1.297(0.851-1.975)	0.2262	1.292(0.848-1.968)	0.2330
	Q3	1973	53(3.00)	4.21	1.343(0.888-2.032)	0.1618	1.298(0.857-1.964)	0.2183	1.283(0.847-1.944)	0.2391
	Q4	2510	98(3.71)	6.07	1.939(1.338-2.811)	0.0005	1.675(1.128-2.488)	0.0106	1.638(1.102-2.436)	0.0147
No	Q1	22824	185(0.79)	1.28	1(reference)		1(reference)		1(reference)	
	Q2	22869	190(0.85)	1.33	0.999(0.816-1.224)	0.9941	0.989(0.808-1.212)	0.9182	0.985(0.805-1.207)	0.8874
	Q3	22389	234(1.05)	1.68	1.145(0.944-1.389)	0.1683	1.104(0.910-1.339)	0.3149	1.092(0.900-1.325)	0.3723
	Q4	22113	370(1.67)	2.66	1.610(1.349-1.922)	<.0001	1.307(1.086-1.573)	0.0046	1.260(1.047-1.517)	0.0146
BMI						0.3439†		0.2514†		0.2419†
<25 kg/m ²	Q1	13524	100(0.72)	1.61	1(reference)		1(reference)		1(reference)	
	Q2	13093	108(0.82)	1.32	1.114(0.849-1.462)	0.4374	1.095(0.834-1.438)	0.5129	1.099(0.837-1.443)	0.4970
	Q3	12573	124(1.02)	1.58	1.210(0.929-1.574)	0.1571	1.177(0.904-1.532)	0.2256	1.182(0.908-1.539)	0.2145
	Q4	11510	203(1.75)	2.78	1.891(1.488-2.404)	<.0001	1.522(1.183-1.958)	0.0011	1.519(1.180-1.955)	0.0012
≥25 kg/m ²	Q1	11277	124(1.09)	1.74	1(reference)		1(reference)		1(reference)	
	Q2	11675	131(1.13)	1.81	0.981(0.768-1.255)	0.8807	0.982(0.768-1.256)	0.8869	0.987(0.772-1.261)	0.9149
	Q3	11789	163(1.41)	2.22	1.121(0.887-1.416)	0.3385	1.084(0.858-1.370)	0.4997	1.074(0.850-1.358)	0.5485
	Q4	13113	265(2.01)	3.22	1.452(1.172-1.798)	0.0006	1.214(0.971-1.519)	0.0887	1.177(0.940-1.473)	0.1546

*IR (incidence rate) presented as per 1000 person-years

†P for interaction

Model 1, adjusted for age and sex

Model 2, Model 1 + RHR, LDL-C, HDL-C, baseline FPG, hypotensive drugs, hypoglycemic drugs, hypertension and diabetes mellitus

Model 3, Model 2 + SBP, DBP, BMI, Hs-CRP, smoking status, drinking status, and physical exercise

Abbreviations: CI, confidence interval; HR, hazard ratio; RHR, resting heart rate; DBP, diastolic blood pressure; SBP, systolic blood pressure; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein cholesterol; BMI, body mass index; Hs-CRP, High-sensitivity C-reactive protein; FPG, fasting plasma glucose.