**Online-only Additional Material**

**Figure S1**

**Flow chart of subject selection for the present study.**



**Figure S2**

**TG levels and the time to onset for T2DM**



**Table S1**

**Baseline characteristics of subjects in CHARLS.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Characteristics | Normal（＜1.7） | Borderline（1.7-2.25） | High（≥2.26） | *P*-value |
| Male（%） | 3713/7102 (52.3%) | 763/1272 (60 %) | 710/1216 (58.4%) | 0.000 |
| Age（years） | 59.04±9.63 | 58.30±9.15 | 57.63±8.91 | 0.000 |
| BMI (kg/m²) | 22.94±3.46 | 24.60±3.47 | 25.21±3.60 | 0.000 |
| Hypertension (%)  | 1149 (20.4) | 374 (29.4) | 390 (32.1) | 0.000 |
| TG (mmol/L) | 1.03±0.33 | 2.53±2.19 | 3.15±0.81 | 0.000 |
| TC (mmol/L) | 4.90±0.93 | 5.34±1.10 | 5.41±1.09 | 0.000 |
| Hyperuricemia | 542/7102 (7.6%) | 135/1272 (9.6%) | 196/1216 (16.1%) | 0.000 |

Date are expressed as mean ± SD, *n* (%). Abbreviations: BMI, body mass index; Hypertension; TG, plasma triglyceride level; TC, total cholesterol;

†Grouped based on TG level: normal ＜150mg/dL; borderline high 150 mg/dL-199mg/dL; high 200mg/dL-499mg/dL;

\**P* < 0.05 was considered statistically significant

**Table S2**

**Baseline characteristics of subjects in Tianjin General Hospital Cohort from 2014-2018.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Characteristics** | **Normal****(＜1.7)** | **Borderline****(1.7-2.25)** | **High****(≥2.26)** | ***P*-value** |
| Male(%) | 3220（71.7%） | 763（75.8%） | 715（81.3%） | ＜0.001 |
| Age(years) | 66.53±15.20 | 64.16±13.98 | 59.93±14.17 | ＜0.001 |
| BMI(kg/m²) | 24.47±3.14 | 25.88±3.01 | 26.33±3.04 | 0.017 |
| Hypertension | 462（10.3%） | 128（12.7%） | 148（16.8%） | ＜0.001 |
| FPG(mmol/L) | 5.35±0.57 | 5.43±0.56 | 5.49±0.55 | ＜0.001 |
| TG(mmol/L) | 1.08±0.31 | 1.93±0.15 | 5.49±0.55 | ＜0.001 |
| TC(mmol/L) | 3.27±1.99 | 3.83±1.85 | 4.63±1.68 | ＜0.001 |
| Hyperuricemia | 597（13.3%） | 253（25.1%） | 326（37.1%） | ＜0.001 |
| SUA(μmol/L) | 325.36±76.18 | 362.85±78.90 | 389.24±83.56 | ＜0.001 |
| ALT(IU/L) | 18.10±12.17 | 23.56±16.23 | 27.65±18.07 | ＜0.001 |
| eGFR-ml/min/1.73² | 89.89±18.92 | 89.32±18.79 | 92.04±19.77 | 0.003 |
| HDL-C(mmol/L) | 1.42±0.38 | 1.16±0.26 | 1.06±0.24 | ＜0.001 |
| LDL-(mmol/L) | 2.25±1.00 | 2.40±1.10 | 2.52±1.05 | ＜0.001 |
| HbAlc | 5.71±0.49 | 5.75±0.49 | 5.74±0.48 | 0.010 |

6,375 participants (male 4698, 73.7%; female 1677, 26.3%); mean age 65.25±15.05;

Abbreviations: BMI, body mass index; Hypertension; FPG, fasting plasma glucose; TG, plasma triglyceride level; TC, total cholesterol; eGFR, estimated glomerular filtration rate; hyperuricemia, SUA, serum uric acid; ALT, alanine aminotransferase; HDL-C, High density lipoprotein cholesterol; LDL-C, low density lipoprotein cholesterol; HbAlc, glycated hemoglobin

Date are expressed as mean ± SD, n (%).

†Grouped based on TG level：normal ＜150mg/dL; borderline high 150 mg/dL-199mg/dL; high 200mg/dL-499mg/dL;

\**P*< 0.05 was considered statistically significant.

**Table S3**

**Hazard ratios of TG levels for T2DM in the Tianjin General Hospital Cohort.**

|  |  |  |
| --- | --- | --- |
|  | ***HR*（95%*CI*）** | ***P-*value** |
| logTG | 1.53（1.04-2.25） | 0.033 |
| Female | 0.69（0.54-0.87） | 0.002 |
| Age (ears) | 1.00（0.99-1.00） | 0.943 |
| BMI (kg/ m²) | 1.04（1.00-1.07） | 0.009 |
| Hypertension | 1.40（1.09-1.79） | 0.008 |
| HbAlc | 3.49（3.21-3.80） | 0.000 |

Abbreviations: TG, plasma triglyceride level; BMI, body mass index; HbAlc, glycated hemoglobin

†Each time the value of hazard ratios changes by one unit, the risk doubles.

\**P*< 0.05 was considered statistically significant.