**Table S1.** Baseline characteristics of the study participants according to sarcopenia status in cross-sectional analyses (N=9375).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Characteristics | No sarcopenia | Possible sarcopenia | Sarcopenia | *P* value |
| No. of subjects | 5897 | 2160 | 1318 |  |
| Age, years | 56.49±8.02 | 61.70±8.95 | 67.67±9.55 | <0.001 |
| Sex, n (%) |  |  |  | <0.001 |
| Male | 2986(50.64) | 922(41.23) | 471(35.74) |  |
| Female | 2911(49.36) | 1238(57.21) | 847(64.24) |  |
| Living place, n (%) |  |  |  | <0.001 |
| Urban | 2295(38.92) | 662(30.65) | 332(25.19) |  |
| Rural | 3602(61.08) | 1498(69.35) | 986(74.81) |  |
| Education level, n (%) |  |  |  | <0.001 |
| Illiteracy | 1295(21.96) | 775(35.88) | 682(51.75) |  |
| Primary school | 2432(41.24) | 916(42.41) | 511(38.77) |  |
| Middle school | 1436(24.35) | 322(14.91) | 95(7.21) |  |
| High school or above | 734(12.45) | 147(6.81) | 30(2.28) |  |
| Medical history |  |  |  |  |
| Hypertension, n (%) | 1330(22.55) | 460(21.30) | 275(20.86) | 0.264 |
| Dyslipidemia, n (%) | 699(11.85) | 151(6.99) | 57(4.32) | <0.001 |
| Diabetes mellitus, n (%) | 429(7.27) | 122(5.65) | 54(4.10) | <0.001 |
| **Physical activity, n (%)** | 962(16.31) | 334(15.46) | 168(12.75) | 0.002 |
| Smoking, n (%) | 2403(40.75) | 829(38.38) | 459(34.83) | <0.001 |
| Drinking, n (%) | 2456(41.65) | 763(35.32) | 431(32.70) | <0.001 |
| BMI, kg/m2 | 24.50(22.66-26.82) | 20.95(19.275-23.35) | 19.78(18.43-21.08) | <0.001 |
| TG, mg/dL | 112.40(78.77-166.38) | 100.01(71.69-141.60) | 92.04(69.03-127.44) | <0.001 |
| TC, mg/dL | 190.98(168.17-216.50) | 190.98(167.78-215.34) | 188.47(163.14-213.02) | 0.001 |
| LDL-C, mg/dL | 115.21(94.33-138.79) | 114.43(93.58-137.24) | 110.95(90.08-131.83) | <0.001 |
| HDL-C, mg/dL | 47.17(39.05-57.22) | 52.19(42.91-63.02) | 55.28(45.23-66.11) | <0.001 |
| FBG, mg/dL | 103.14(95.04-114.84) | 102.06(93.78-112.68) | 100.80(92.88-110.88) | 0.014 |
| SBP, mmHg | 130.48±21.02 | 129.42±22.57 | 131.58±22.95 | 0.501 |
| DBP, mmHg | 76.95±11.48 | 74.14±11.91 | 72.67±11.76 | <0.001 |

BMI: body mass index; TG: triacylglycerol; TC: total cholesterol; LDL-C: low-density lipoprotein-cholesterol; HDL-C: high-density lipoprotein-cholesterol; FBG: fasting blood glucose; SBP: systolic blood pressure; DBP: diastolic blood pressure;

Continuous variables are expressed as mean± standard deviation, or as median (interquartile range). Categorical variables are expressed as frequency (percent).

**Table S2.** Association between sarcopenia status and CKD in cross-sectional analyses.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcome | No sarcopenia | Possible sarcopenia | Sarcopenia | *P* trend |
| **CKD** | | | | |
| Case, n (%) | 404 (6.85) | 181 (8.38) | 116 (8.80) |  |
| Model 1 | 1.00 (Reference) | 1.24 (1.04-1.49) | 1.31 (1.06-1.63) | 0.003 |
| Model 2 | 1.00 (Reference) | 1.32 (1.08-1.62) | 1.44 (1.11-1.85) | 0.002 |

Model 1 was adjusted for eGFR at baseline.

Model 2 was further adjusted for age, sex, place of residence, education level, smoking, drinking, systolic blood pressure, chronic diseases (dyslipidemia, diabetes mellitus, chronic lung disease and stroke) and medications (anti-hypertensive, anti-dyslipidemic, and anti-diabetic).

**Table S3.** Sensitivity analysis oftheassociation between sarcopenia status and CKD outcomes in longitudinal analysis.

|  |  |  |  |
| --- | --- | --- | --- |
| Outcome | Case, n (%) | Model 1 | Model 2 |
| **Primary outcome (rapid decline in kidney function or progression to CKD)** | | | |
| No Sarcopenia | 236 (6.18) | 1.00 (Reference) | 1.00 (Reference) |
| Sarcopenia# | 154 (7.54) | 1.36 (1.06-1.74) | 1.37 (1.07-1.76) |
| **Second outcome: rapid decline in kidney function** | | | |
| No Sarcopenia | 223 (5.84) | 1.00 (Reference) | 1.00 (Reference) |
| Sarcopenia# | 136 (6.66) | 1.43 (1.11-1.85) | 1.47 (1.13-1.90) |
| **Progression to CKD** | | | |
| No Sarcopenia | 72 (1.88) | 1.00 (Reference) | 1.00 (Reference) |
| Sarcopenia# | 54 (2.64) | 1.04 (0.72-1.49) | 1.15 (0.74-1.77) |

#Individuals with possible sarcopenia were divided into the sarcopenia group.

Model 1 was adjusted for eGFR at baseline.

Model 2 was further adjusted for age, sex, place of residence, education level, smoking, drinking, systolic blood pressure, chronic diseases (dyslipidemia, diabetes mellitus, chronic lung disease and stroke) and medications (anti-hypertensive, anti-dyslipidemic, and anti-diabetic).

**Table S4.** Sensitivity analysis\* of thelongitudinal association between sarcopenia status and CKD outcomes in longitudinal analyses.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Outcome | No sarcopenia | Possible sarcopenia | Sarcopenia | *P* trend |
| **Primary outcome (rapid decline in kidney function or progression to CKD)** | | | | |
| Case, n (%) | 236 (6.18) | 97 (7.34) | 57 (7.91) |  |
| Model 1 | 1.00 (Reference) | 1.31 (1.00-1.71) | 1.50 (1.06-2.11) | 0.011 |
| Model 2 | 1.00 (Reference) | 1.31 (1.01-1.77) | 1.45 (1.03-2.02) | 0.019 |
| **Second outcome: rapid decline in kidney function** | | | | |
| Case, n (%) | 223 (5.84) | 87 (6.58) | 49 (6.80) |  |
| Model 1 | 1.00 (Reference) | 1.36 (1.04-1.81) | 1.61 (1.12-2.33) | 0.004 |
| Model 2 | 1.00 (Reference) | 1.43 (1.08-1.90) | 1.69 (1.16-2.46) | 0.002 |
| **Progression to CKD** | | | | |
| Case, n (%) | 72 (1.88) | 32 (2.42) | 22 (3.05) |  |
| Model 1 | 1.00 (Reference) | 1.01 (0.65-1.55) | 1.17 (1.02-1.78) | 0.045 |
| Model 2 | 1.00 (Reference) | 1.10 (0.68-1.77) | 1.29 (1.01-2.66) | 0.041 |

Model 1 was adjusted for eGFR at baseline.

Model 2 was further adjusted for age, age-squared, sex, place of residence, education level, smoking, physical activity, drinking, systolic blood pressure, chronic diseases (dyslipidemia, diabetes mellitus, chronic lung disease and stroke) and medications (anti-hypertensive, anti-dyslipidemic, and anti-diabetic).

**Table S5.** Association of sarcopenia status with CKD outcomes in participants with metabolic biomarkers measurements

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | No sarcopenia | Possible sarcopenia | Sarcopenia | *P* trend |
| **Primary outcome (kidney function decline or progression to CKD)** | | | | |
| Multivariable-adjusted\* | 1.00 (Reference) | 1.33 (1.01-1.74) | 1.48 (1.04-2.11) | 0.013 |
| Model adjusted as multivariable model plus | | | | |
| Total Cholesterol | 1.00 (Reference) | 1.31 (1.00-1.71) | 1.50 (1.06-2.11) | 0.012 |
| LDL cholesterol | 1.00 (Reference) | 1.32 (1.00-1.73) | 1.47 (1.03-2.09) | 0.018 |
| HDL cholesterol | 1.00 (Reference) | 1.35 (1.03-1.76) | 1.52 (1.07-2.17) | 0.009 |
| Triglycerides | 1.00 (Reference) | 1.34 (1.02-1.76) | 1.51 (1.05-2.15) | 0.012 |
| All biomarkers | 1.00 (Reference) | 1.33 (1.01-1.74) | 1.49 (1.04-2.13) | 0.014 |
| **Second outcome:**  **kidney function decline** | | | | |
| Multivariable-adjusted\* | 1.00 (Reference) | 1.41 (1.06-1.87) | 1.63 (1.12-2.37) | 0.001 |
| Model adjusted as multivariable model plus | | | | |
| Total Cholesterol | 1.00 (Reference) | 1.40 (1.06-1.86) | 1.64 (1.13-2.39) | 0.004 |
| LDL cholesterol | 1.00 (Reference) | 1.40 (1.05-1.85) | 1.61 (1.11-2.34) | 0.005 |
| HDL cholesterol | 1.00 (Reference) | 1.42 (1.07-1.89) | 1.67 (1.15-2.43) | 0.003 |
| Triglycerides | 1.00 (Reference) | 1.42 (1.07-1.89) | 1.65 (1.13-2.41) | 0.003 |
| All biomarkers | 1.00 (Reference) | 1.41 (1.06-1.87) | 1.64 (1.13-2.39) | 0.004 |
| **Progression to CKD** | | | | |
| Multivariable-adjusted\* | 1.00 (Reference) | 1.10 (0.68-1.77) | 1.25 (1.04-2.25) | 0.037 |
| Model adjusted as multivariable model plus | | | | |
| Total Cholesterol | 1.00 (Reference) | 1.10 (0.68-1.77) | 1.25 (1.02-2.25) | 0.037 |
| LDL cholesterol | 1.00 (Reference) | 1.10 (0.68-1.77) | 1.26 (1.04-2.26) | 0.036 |
| HDL cholesterol | 1.00 (Reference) | 1.10 (0.68-1.77) | 1.22 (1.03-2.27) | 0.039 |
| Triglycerides | 1.00 (Reference) | 1.10 (0.68-1.77) | 1.27 (1.02-2.25) | 0.036 |
| All biomarkers | 1.00 (Reference) | 1.10 (0.68-1.77) | 1.24 (1.04-2.29) | 0.040 |

\*Multivariable-adjusted for eGFR at baseline, age, sex, place of residence, education level, smoking, physical activity, drinking, systolic blood pressure, chronic diseases (dyslipidemia, diabetes mellitus, chronic lung disease and stroke) and medications (anti-hypertensive, anti-dyslipidemic, and anti-diabetic).

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