**Supplement 1. Study subjects’ demographic data among quartile of eGFR change in the subjects whose baseline eGFR were from 60 to 90 mL/min/1.73m2 (a), from 90 to 120 mL/min/1.73m2 (b), and ≥120 mL/min/1.73m2 (c)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **(a) 60≤ eGFR <90 mL/min/1.73m2** | Total | 1st quartile | 2nd quartile | 3rd quartile | 4th quartile | P |
| Number | 7,914 | 1,983 | 1,977 | 1,977 | 1,977 |  |
| eGFR decline (mL/min/1.73m2) | 12.2±6.8 | 3.7±3.9  (<7.88) | 10.1±1.2  (7.88≤ <12.22) | 14.3±1.2  (12.22≤ <16.49) | 20.6±3.7  (16.49≤) | <0.001 |
| Age (years old) | 53.1±10.9 | 52.5±11.0 | 53.5±10.7 | 53.1±11.0 | 53.1±10.9 | 0.04 |
| Sex (male) | 53.00% | 58.50% | 57.60% | 50.30% | 45.30% | <0.001 |
| Body mass index (kg/m2) | 22.7±3.1 | 22.8±3.1 | 22.9±3.1 | 22.5±3.1 | 22.7±3.2 | <0.001 |
| Smoking habit | 39.70% | 41.60% | 41.20% | 37.90% | 37.90% | 0.018 |
| Hypertension | 21.60% | 20.70% | 21.00% | 20.60% | 24.10% | 0.018 |
| Diabetes | 4.20% | 4.20% | 3.40% | 3.80% | 5.50% | 0.009 |
| Dyslipidemia | 38.40% | 39.80% | 41.50% | 38.50% | 33.80% | 0.389 |
| Baseline serum uric acid (mg/dL) | 5.54±1.36 | 5.74±1.36 | 5.66±1.37 | 5.44±1.34 | 5.31±1.34 | <0.001 |
| - Male  Female | 6.31±1.20,  4.66±0.94 | 6.41±1.20,  4.78±0.95 | 6.35±1.21,  4.73±0.95 | 6.21±1.20,  4.66±0.97 | 6.25±1.19,  4.53±0.88 |  |
| Follow-up serum uric acid (mg/dL) | 5.43±1.30 | 5.29±1.26 | 5.45±1.28 | 5.43±1.32 | 5.53±1.35 | <0.001 |
| - Male,  Female | 6.12±1.18,  4.65±0.96 | 5.86±1.13,  4.49±0.95 | 6.08±1.14,  4.60±0.91 | 6.19±1.18,  4.67±0.98 | 6.42±1.20,  4.79±0.95 |  |
| Serum uric acid change (mg/dL) | -0.11±0.80 | -0.45±0.79 | -0.21±0.74 | -0.05±0.70 | 0.22±0.79 | <0.001 |
| Baseline eGFR (mL/min/1.73m2) | 77.7±7.6 | 74.4±7.6 | 75.9±7.5 | 78.6±7.0 | 81.9±6.1 | <0.001 |
| - Male,  Female | 77.0±7.8,  78.5±7.4 | 73.8±7.6,  75.1±7.5 | 75.5±7.5,  76.5±7.5 | 78.4±7.1,  78.8±6.9 | 81.4±6.6,  82.2±5.7 |  |
| Follow-up eGFR (mL/min/1.73m2) | 65.5±18.2 | 70.7±8.4 | 65.8±7.5 | 64.3±6.9 | 61.3±6.8 | <0.001 |
| - Male,  Female | 65.5±8.3,  65.6±8.1 | 70.1±8.3,  71.5±8.4 | 65.4±7.5,  66.3±7.5 | 64.2±7.0,  64.5±6.9 | 60.9±7.4,  61.6±6.3 |  |

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| --- | --- | --- | --- | --- | --- | --- |
| **(b) 90≤ eGFR <120 mL/min/1.73m2** | Total | 1st quartile | 2nd quartile | 3rd quartile | 4th quartile | p |
| Number | 4,336 | 1,084 | 1,085 | 1,084 | 1,083 |  |
| eGFR decline (mL/min/1.73m2) | 20.3±8.6 | 9.5±4.9  (<15.01) | 17.7±1.6  (15.01≤ <20.37) | 23.0±1.6  (20.37≤ <25.76) | 31.0±4.7  (20.76≤) | <0.001 |
| Age (years old) | 46.5±10.1 | 45.8±10.4 | 46.5±10.3 | 46.2±9.7 | 47.5±10.2 | 0.002 |
| Sex (male) | 39.3% | 46.1% | 44.4% | 35.7% | 31.0% | <0.001 |
| Body mass index (kg/m2) | 22.1±3.3 | 22.1±3.4 | 22.1±3.2 | 31.9±3.2 | 22.1±3.2 | 0.286 |
| Smoking habit | 36.6% | 39.3% | 38.2% | 36.5% | 32.2% | 0.004 |
| Hypertension | 14.1% | 13.0% | 14.2% | 13.1% | 16.0% | 0.163 |
| Diabetes | 4.0% | 3.8% | 3.3% | 3.2% | 5.7% | 0.009 |
| Dyslipidemia | 31.5% | 32.1% | 31.5% | 30.9% | 31.5% | 0.948 |
| Baseline serum uric acid (mg/dL) | 4.93±1.33 | 5.12±1.35 | 5.02±1.34 | 4.81±1.25 | 4.77±1.34 | <0.001 |
| - Male  Female | 5.98±1.22,  4.25±0.87 | 5.97±1.21,  4.26±0.86 | 6.01±1.28,  4.23±0.91 | 6.01±1.31,  4.14±0.89 | 6.11±1.61,  4.16±0.98 |  |
| Follow-up serum uric acid (mg/dL) | 4.96±1.30 | 4.88±1.29 | 4.99±1.31 | 4.93±1.25 | 5.06±1.35 | 0.01 |
| - Male,  Female | 5.93±1.22,  4.33±0.91 | 5.86±1.19,  4.26±0.88 | 6.22±1.27,  4.49±0.92 | 6.46±1.41,  4.55±1.05 | 6.29±1.29,  5.05±1.10 |  |
| Serum uric acid change (mg/dL) | 0.04±0.72 | -0.24±0.71 | -0.03±0.67 | 0.12±0.66 | 0.29±0.74 | <0.001 |
| Baseline eGFR (mL/min/1.73m2) | 99.9±7.4 | 97.4±6.3 | 98.0±6.3 | 100.1±7.0 | 104.2±7.7 | <0.001 |
| - Male,  Female | 99.3±7.2,  100.4±7.4 | 98.2±6.5,  98.8±6.8 | 102.6±7.8,  103.5±7.2 | 107.4±7.4,  107.7±7.4 | 112.5±5.8,  110.1±9.1 |  |
| Follow-up eGFR (mL/min/1.73m2) | 79.6±9.1 | 87.8±8.2 | 80.3±6.4 | 77.2±7.0 | 73.2±7.8 | <0.001 |
| - Male,  Female | 80.1±8.9,  79.3±9.3 | 81.9±8.2,  81.6±8.8 | 73.6±7.8,  74.2±7.1 | 70.8±7.7,  71.2±7.4 | 66.2±6.3,  64.9±11.2 |  |

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| --- | --- | --- | --- | --- | --- | --- |
| **(c) eGFR ≥120 mL/min/1.73m2** | Total | 1st quartile | 2nd quartile | 3rd quartile | 4th quartile | p |
| Number | 328 | 82 | 83 | 82 | 81 |  |
| eGFR decline (mL/min/1.73m2) | 34.3±13.2 | 18.9±6.1  (<25.94) | 30.2±2.4  (25.94≤ <33.78) | 37.4±50.8  (33.78≤ <40.93) | 50.8 ±10.6  (40.93<) | <0.001 |
| Age (years old) | 44.7±9.8 | 43.9±10.1 | 43.5±8.6 | 44.5±9.7 | 47.0±10.4 | 0.09 |
| Sex (male) | 31.4% | 32.9% | 34.9% | 29.3% | 28.4% | 0.783 |
| Body mass index (kg/m2) | 21.7±3.4 | 21.8±3.8 | 21.1±2.9 | 22.0±3.5 | 21.9±3.4 | 0.245 |
| Smoking habit | 40.5% | 48.8% | 36.1% | 43.9% | 33.3% | 0.165 |
| Hypertension | 15.2% | 12.2% | 9.6% | 15.9% | 23.5% | 0.077 |
| Diabetes | 8.8% | 6.1% | 7.2% | 11.0% | 11.1% | 0.573 |
| Dyslipidemia | 26.2% | 23.2% | 19.3% | 25.6% | 37.0% | 0.061 |
| Baseline serum uric acid (mg/dL) | 4.50±1.21 | 4.62±1.38 | 4.46±1.12 | 4.49±1.26 | 4.42±1.07 | 0.746 |
| - Male  Female | 5.62±1.26,  3.98±0.75 | 5.97±1.32,  3.96±0.81 | 5.39±1.19  3.96±0.68 | 5.63±1.47,  4.01±0.77 | 5.49±1.00,  3.99±0.76 |  |
| Follow-up serum uric acid (mg/dL) | 4.59±1.23 | 4.38±1.29 | 4.52±1.19 | 4.65±1.18 | 4.81±1.22 | 0.132 |
| - Male,  Female | 5.70±1.19,  4.08±0.85 | 5.59±1.21,  3.78±0.84 | 5.48±1.23,  4.00±0.80 | 5.65±1.27,  4.24±0.86 | 6.18±0.97,  4.27±0.82 |  |
| Serum uric acid change (mg/dL) | 0.09±0.75 | -0.24±0.75 | 0.06±0.58 | 0.16±0.69 | 0.40±0.82 | <0.001 |
| Baseline eGFR (mL/min/1.73m2) | 130.0±10.7 | 127.4±7.8 | 127.2±7.6 | 128.9±8.2 | 136.6±14.9 | <0.001 |
| - Male,  Female | 131.5±13.8,  129.3±8.9 | 129.2±9.48,  126.4±6.7 | 126.6±6.89,  127.6±7.9 | 128.5±9.4,  129.0±7.7 | 143.3±20.8,  133.9±11.0 |  |
| Follow-up eGFR (mL/min/1.73m2) | 95.7±12.8 | 108.5±10.9 | 97.1±7.9 | 91.4±8.2 | 85.8±11.3 | <0.001 |
| - Male,  Female | 97.2±13.8,  95.1±12.3 | 109.6±13.6,  107.9±9.4 | 96.9±6.9,  97.1±8.4 | 90.8±9.3,  91.7±7.7 | 89.5±14.8,  84.3±9.4 |  |

GFR: glomerular filtration rate, BP: blood pressure, p: probability, Data are presented as mean ± standard deviation.

Comparisons among four groups were performed with the one-way analysis of variance (ANOVA).

**Supplement 2. Risk factors for rapid eGFR decline: comparing the highest (4th) quartile with the lowest (1st) quartile of eGFR change in the subjects whose baseline eGFR were from 60 to 90 mL/min/1.73m2 (a), from 90 to 120 mL/min/1.73m2 (b), and ≥120 mL/min/1.73m2 (c)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **(a) 60 ≤ eGFR < 90 mL/min/1.73m2** | |  |  | **Adjusted**\* |  |
|  | |  | Odds ratio | 95% C.I. | P |
| Age | per 1 year increase |  | 1.035 | 1.028-1.042 | <0.001 |
| Sex (male) | male vs female |  | 0.519 | 0.429-0.627 | <0.001 |
| Body mass index | per 1 kg/m2 increase |  | 1.006 | 0.981-1.031 | 0.643 |
| Smoking habits | positive vs negative |  | 0.889 | 0.763-1.037 | 0.134 |
| Hypertension | positive vs negative |  | 1.316 | 1.092-1.586 | 0.004 |
| Diabetes | positive vs negative |  | 1.255 | 0.893-1.764 | 0.191 |
| Dyslipidemia | positive vs negative |  | 1.311 | 1.130-1.521 | <0.001 |
| Baseline eGFR | per 1 mL/min/1.73m2 increase |  | 1.152 | 1.143-1.160 | <0.001 |
| Baseline serum uric acid | per 1 mg/dL increase |  | 1.307 | 1.219-1.402 | <0.001 |
| Serum uric acid change | per 1 mg/dL increase |  | 3.704 | 3.322-4.115 | <0.001 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **(b) 90 ≤ eGFR < 120 mL/min/1.73m2** | |  |  | **Adjusted**\* |  |
|  | |  | Odds ratio | 95% C.I. | p |
| Age | per 1 year increase |  | 1.031 | 1.020-1.043 | <0.001 |
| Sex (male) | male vs female |  | 0.378 | 0.278-0.514 | <0.001 |
| Body mass index | per 1 kg/m2 increase |  | 1.033 | 0.994-1.074 | 0.097 |
| Smoking habits | positive vs negative |  | 0.852 | 0.664-1.092 | 0.206 |
| Hypertesion | positive vs negative |  | 1.014 | 0.729-1.410 | 0.936 |
| Diabetes | positive vs negative |  | 1.235 | 0.731-2.087 | 0.430 |
| Dyslipidemia | positive vs negative |  | 1.072 | 0.840-1.367 | 0.579 |
| Baseline eGFR | per 1 mL/min/1.73m2 increase |  | 1.160 | 1.142-1.178 | <0.001 |
| Baseline serum uric acid | per 1 mg/dL increase |  | 1.308 | 1.167-1.466 | <0.001 |
| Serum uric acid change | per 1 mg/dL increase |  | 3.484 | 3.021-4.255 | <0.001 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **(c)** e**GFR ≥ 120 mL/min/1.73m2** | |  |  | **Adjusted**\* |  |
|  | |  | Odds ratio | 95% C.I. | p |
| Age | per 1 year increase |  | 1.031 | 0.988-1.077 | 0.163 |
| Sex (male) | male vs female |  | 0.084 | 0.018-0.402 | 0.002 |
| Body mass index | per 1 kg/m2 increase |  | 1.004 | 0.876-1.150 | 0.956 |
| Smoking habits | positive vs negative |  | 0.589 | 0.214-1.623 | 0.306 |
| Hypertesion | positive vs negative |  | 2.068 | 0.620-6.901 | 0.237 |
| Diabetes | positive vs negative |  | 1.898 | 0.330-10.920 | 0.473 |
| Dyslipidemia | positive vs negative |  | 3.346 | 1.173-9.540 | 0.024 |
| Baseline eGFR | per 1 mL/min/1.73m2 increase |  | 1.138 | 1.080-1.200 | <0.001 |
| Baseline serum uric acid | per 1 mg/dL increase |  | 1.830 | 1.077-3.110 | 0.026 |
| Serum uric acid change | per 1 mg/dL increase |  | 5.932 | 2.867-12.275 | <0.001 |

GFR: glomerular filtration rate, C.I.: confidence interval, p: probability

\*Data adjusted for age, sex, body mass index, smoking habits, hypertension, diabetes, dyslipidemia, baseline eGFR, baseline serum uric acid, and serum uric acid change.