**Rate of Decline in Kidney Function and Age-of-Onset or Duration of Type 2 Diabetes**

**Supplementary material**

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Table S1. Incidence of ESKD and hazard ratio estimates from a joint-longitudinal survival model during the overall study and trial periods according to age-of-onset or duration of diabetes

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ESKD events | | | Person-years | | | Rates (95% CI)a | | | Hazard ratio (95% CI)b | | | | |
| Age-of onset of diabetes | | | | | | |  | | |  | | | |  |
| Overall study period | | | | | | |  | | |  | | | |
| 0–39 y | | | 46 | | | 8346 | | | 5.51 (4.12, 7.36) | | | 1.49 (1.15, 1.82) | | | |
| 40–49 y | | | 101 | | | 26716 | | | 3.78 (3.11, 4.59) | | | 1.12 (0.87, 1.38) | | | |
| 50–59 y | | | 133 | | | 38864 | | | 3.42 (2.88, 4.05) | | | 1.00 (Reference) | | | |
| 60–69 y | | | 40 | | | 13817 | | | 2.89 ( 2.12, 3.94) | | | 0.80 (0.56, 1.16) | | | |
| ≥70 y | | | 3 | | | 1782 | | | 1.68 (0.54, 5.22) | | | 0.26 (0.11, 1.41) | | | |
| Trial period | | | | | | |  | | |  | | | | |
| 0–39 y | | 40 | | | 4506 | | | 8.87 ( 6.51, 12.10) | | | 1.33 (0.99, 1.69) | | | | |
| 40–49 y | | 86 | | | 14298 | | | 6.01 (4.86, 7.43) | | | 0.98 (0.71, 1.24) | | | | |
| 50–59 y | | 121 | | | 20869 | | | 5.79 ( 4.85, 6.92) | | | 1.00 (Reference) | | | | |
| 60–69 y | | 37 | | | 7627 | | | 4.85 (3.51, 6.69) | | | 0.98 (0.60, 1.35) | | | | |
| ≥70 y | | 3 | | | 1074 | | | 2.79 (0.90, 8.65) | | | 0.61 (0.46, 1.76) | | | | |
| Duration of diabetes | | | |  | | |  | | |  | | |  | |
| Overall study period | | | |  | | |  | | |  | | |
| 0–4 y | 53 | | | 14741 | | | 3.59 (2.74, 4.70) | | | 1.00 (reference) | | | | |
| 5–9 y | 95 | | | 20034 | | | 4.74 (3.87, 5.79) | | | 1.28 0.95, 1.61) | | | | |
| 10–14 y | 60 | | | 16021 | | | 3.74 (2.90, 4.82) | | | 1.06 (0.70, 1.42) | | | | |
| 15–19 y | 53 | | | 9297 | | | 5.70 (4.35, 7.46) | | | 1.52 (1.14, 1.91) | | | | |
| ≥20 y | 59 | | | 9331 | | | 6.32 (4.89, 8.16) | | | 1.68 (1.31, 2.06) | | | | |
| Trial period | | | |  | | |  | | |  | | | | |
| 0–4 y | 49 | | | 13070 | | | 3.74 (2.83, 4.96) | | | Reference | | | | |
| 5–9 y | 88 | | | 17718 | | | 4.96 (4.03, 6.12) | | | 1.33 (0.94, 1.89) | | | | |
| 10–14 y | 48 | | | 14144 | | | 3.39 (2.55, 4.50) | | | 0.94 (0.62, 1.38) | | | | |
| 15–19 y | 48 | | | 8249 | | | 5.81 (4.38, 7.72) | | | 1.63 (1.09, 2.44) | | | | |
| ≥20 y | 54 | | | 8368 | | | 6.45 (4.94, 8.42) | | | 1.76 (1.19, 2.62) | | | | |

a: Rates per 1000 person-years

b: Adjusted for age, sex, race and education.

Abbreviations: ESKD, end-stage kidney disease; y, year-olds.

Table S2. Annual change in eGFR according to age-of-onset or duration of diabetes among those with an eGFR less than 120 ml/min/1.73 m2 at baseline

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | N | Absolute eGFR change (mL/min/1.73 m2 per yr)a | Difference in absolute eGFR change (95% CI) | Percentage eGFR change (% per yr)a | Difference in percentage eGFR change (95% CI) | | |
| Age-of-onset of diabetes | | |  |  |  | |  |
| Model 1 | |  |  |  |  | |
| 0–39 y | 932 | -2.02 (2.46) | -0.39 (-0.59, -0.18) | -2.48 (2.66) | -0.49 (-0.67, -0.31) | | |
| 40–49 y | 2889 | -1.77 (2.05) | -0.14 (-0.25, -0.02) | -2.12 (2.08) | -0.13 (-0.22, -0.03) | | |
| 50–59 y | 4244 | -1.63 (1.88) | Reference | -1.99 (1.90) | Reference | | |
| 60–69 y | 1559 | -1.68 (1.86) | -0.05 (-0.18, 0.08) | -2.21 (2.25) | -0.22 (-0.34, -0.08) | | |
| ≥70 y | 220 | -1.88 (2.00) | -0.25 (-0.61, 0.09) | -2.75 (2.29) | -0.76 (-1.06, -0.44) | | |
| Model 2 | |  |  |  |  | | |
| 0–39 y | 932 | -1.99 (2.45) | -0.38 (-0.58, -0.17) | -2.37 (2.64) | -0.44 (-0.62, -0.26) | | |
| 40–49 y | 2889 | -1.74 (2.06) | -0.14 (-0.25, -0.01) | -2.05 (2.12) | -0.12 (-0.21, -0.02) | | |
| 50–59 y | 4244 | -1.60 (1.89) | Reference | -1.93 (1.95) | Reference | | |
| 60–69 y | 1559 | -1.61 (1.88) | -0.01 (-0.14, 0.12) | -2.09 (2.08) | -0.15 (-0.27, -0.03) | | |
| ≥70 y | 220 | -1.77 (2.15) | -0.17 (-0.53, 0.20) | -2.55 (2.56) | -0.62 (-0.96, -0.27) | | |
| Duration of diabetes | | |  |  |  |  | |
| Model 1 |  |  |  |  |  |
| 0–4 y | 2096 | -1.80 (2.27) | Reference | -2.12 (2.20) | Reference | | |
| 5–9 y | 2828 | -1.97 (2.24) | -0.17 (-0.33, -0.01) | -2.40 (2.21) | -0.28 (-0.40, -0.15) | | |
| 10–14 y | 2227 | -2.14 (2.26) | -0.33 (-0.51, -0.16) | -2.64 (2.27) | -0.51 (-0.64, -0.38) | | |
| 15–19 y | 1304 | -2.19 (2.61) | -0.39 (-0.60, -0.17) | -2.76 (2.78) | -0.63 (-0.81, -0.46) | | |
| ≥20 y | 1395 | -2.24 (2.60) | -0.44 (-0.65, -0.22) | -2.96 (2.84) | -0.84 (-1.01, -0.66) | | |
| Model 2 |  |  |  |  |  | | |
| 0–4 y | 2092 | -1.66 (2.21) | Reference | -1.94 (2.12) | Reference | | |
| 5–9 y | 2815 | -1.79 (2.20) | -0.13 (0.29, 0.02) | -2.17 (2.17) | -0.22 (-0.34, -0.11) | | |
| 10–14 y | 2218 | -1.98 (2.26) | -0.32 (-0.48, -0.15) | -2.43 (2.27) | -0.48 (-0.57, -0.39) | | |
| 15–19 y | 1300 | -2.00 (2.56) | -0.34 (-0.55, -0.13) | -2.51 (2.72) | -0.56 (-0.73, -0.39) | | |
| ≥20 y | 1390 | -2.04 (2.58) | -0.38 (-0.59, -0.17) | -2.67 (2.79) | -0.72 (-0.89, -0.54) | | |

a: Data are mean (standard deviation).

**Model 1:** adjusted for age, sex, race and education. **Model 2:** Model 1 + smoking, family history of cardiovascular disease (CVD), CVD history at baseline, diabetes duration, body mass index, blood pressure levels, use of renin-angiotensin-aldosterone system blockers, glycated haemoglobin level, serum lipid levels, and baseline urine albumin/creatinine, ratio. Baseline eGFR is not included in the covariate set, as it is already present in the joint longitudinal-survival model specification.

Abbreviations: eGFR, estimated glomerular filtration rate; y, year-olds.

Table S3. Annual change in eGFR during the trial period according to age-of-onset or duration of diabetes

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | N | Absolute eGFR change (mL/min/1.73 m2 per yr)a | Difference in absolute eGFR change (95% CI) | Percentage eGFR change (% per yr)a | Difference in percentage eGFR change (95% CI) | |
| Age-of-onset of diabetes | | |  |  |  |  |
| Model 1 |  |  |  |  |  |
| 0–39 y | 944 | -2.43 (2.97) | -0.48 (-0.72, -0.23) | -2.93 (3.13) | -0.53 (-0.74, -0.32) | |
| 40–49 y | 2926 | -2.09 (2.42) | -0.14 (-.27, 0.01) | -2.51 (2.42) | -0.11 (-0.22, 0.001) | |
| 50–59 y | 4261 | -1.95 (2.24) | Reference | -2.40 (2.24) | Reference | |
| 60–69 y | 1560 | -1.98 (2.18) | -0.03 (-0.18, 0.13) | -2.60 (2.33) | -0.20 (-0.33, -0.06) | |
| ≥70 y | 220 | -1.86 (2.11) | 0.09 (-0.29, 0.47) | -2.74 (2.40) | -0.34 (-0.66, -0.02) | |
| Model 2 |  |  |  |  |  | |
| 0–39 y | 944 | -2.26 (2.91) | -0.45 (-0.68,-0.19) | -2.65 (3.14) | -0.47 (-0.68, -0.26) | |
| 40–49 y | 2926 | -1.95 (2.44) | -0.14 (-0.27, 0.01) | -2.29 (2.53) | -0.11 (-0.22, 0.005) | |
| 50–59 y | 4261 | -1.81 (2.22) | Reference | -2.18 (2.32) | Reference | |
| 60–69 y | 1560 | -1.82 (2.17) | -0.01 (-0.16, 0.16) | -2.33 (2.44) | -0.15 (-0.29, -0.01) | |
| ≥70 y | 220 | -1.70 (2.22) | 0.11 (-0.28, 0.51) | -2.42 (2.71) | -0.24 (-0.61, 0.11) | |
| Duration of diabetes | | |  |  |  |  |
| Model 1 |  |  |  |  |  |
| 0–4 y | 2114 | -1.53 (1.86) | Reference | -1.82 (1.81) | Reference | |
| 5–9 y | 2848 | -1.65 (1.94) | -0.11 (-0.25, 0.01) | -2.01 (1.95) | -0.19 (-0.29, 0.08) | |
| 10–14 y | 2246 | -1.80 (1.91) | -0.27 (-0.41, -0.12) | -2.21 (1.94) | -0.39 (-0.50, -0.27) | |
| 15–19 y | 1311 | -1.82 (2.19) | -0.29 (-0.46, -0.11) | -2.31 (2.36) | -0.49 (-0.64, -0.34) | |
| ≥20 y | 1398 | -1.90 (2.17) | -0.37(-0.54, -0.18) | -2.53 (2.42) | -0.71 (-0.86, -0.56) | |
| Model 2 |  |  |  |  |  | |
| 0–4 y | 2110 | -1.51 (1.80) | Reference | -1.78 (1.74) | Reference | |
| 5–9 y | 2832 | -1.62 (1.89) | -0.11 (-0.24, 0.02) | -1.95 (1.89) | -0.17 (-0.27, 0.06) | |
| 10–14 y | 2236 | -1.77 (1.92) | -0.26 (-0.40, -0.12) | -2.17 (1.96) | -0.39 (-0.49, -0.27) | |
| 15–19 y | 1307 | -1.76 (2.15) | -0.25 (-0.42, -0.08) | -2.22 (2.32) | -0.44 (-0.58, -0.29) | |
| ≥20 y | 1393 | -1.82 (2.17) | -0.31 (-0.48, -0.14) | -2.40 (2.40) | -0.62 (-0.76, -0.47) | |

a: Data are mean (standard deviation).

Model 1: adjusted for age, sex, race and education. Model 2: Model 1 + smoking, family history of cardiovascular disease (CVD), CVD history at baseline, diabetes duration, body mass index, blood pressure levels, use of renin-angiotensin-aldosterone system blockers, glycated haemoglobin level, serum lipid levels, and baseline urine albumin/creatinine, ratio. Baseline eGFR is not included in the covariate set, as it is already present in joint longitudinal-survival model specification.

Abbreviations: eGFR, estimated glomerular filtration rate; y, year-olds.