**SUPPLEMENTARY MATERIAL
Supplemental Table S1**.Association between different measures of glycemic exposure and micro- and macrovascular complications adjusted for covariatesa

|  | Diabetic foot | Retinopathy | Renal complications | CAD | CER |
| --- | --- | --- | --- | --- | --- |
| HbA1c at index |  |  |  |  |  |
|  <53 mmol/mol | 1 (ref.) | ref. | ref. | ref. | ref. |
|  53-<64 mmol/mol | 1.01 (0.94to 1.09) | 1.05 (0.98 to 1.13) | 1.02 (0.97 to 1.08) | 1.09 (0.99 to 1.20) | 1.02 (0.91 to 1.14) |
|  ≥64 mmol/mol | 1.08 (0.99 to 1.19) | 1.05 (0.96 to 1.15) | 1.10 (1.02 to 1.18) | 1.18 (1.04 to 1.34) | 1.00 (0.86 to 1.16) |
| Time-dependent HbA1c |  |  |  |  |  |
|  <53 mmol/mol | ref. | ref. | ref. | ref. | ref. |
|  53-<64 mmol/mol | 1.09 (1.00 to 1.19) | 1.19 (1.10 to 1.30) | 1.04 (0.98 to 1.11) | 1.07 (0.96 to 1.20) | 0.88 (0.77 to 1.00) |
|  ≥64 mmol/mol | 1.36 (1.21 to 1.52) | 1.55 (1.40 to 1.73) | 1.20 (1.10 to 1.31) | 1.14 (0.97 to 1.33) | 1.02 (0.85 to 1.22) |
| EMA |  |  |  |  |  |
|  <53 mmol/mol | ref. | ref. | ref. | ref. | ref. |
|  53-<64 mmol/mol | 1.05 (0.96 to 1.14) | 1.29 (1.18 to 1.41) | 1.00 (0.94 to 1.07) | 1.02 (0.91 to 1.14) | 1.06 (0.93 to 1.21) |
|  ≥64 mmol/mol | 1.47 (1.32 to 1.64) | 1.81 (1.63 to 2.02) | 1.15 (1.06 to 1.26) | 1.29 (1.10 to 1.50) | 1.15 (0.95 to 1.38) |
| GBYs |  |  |  |  |  |
|  No burden | ref. | ref. | ref. | ref. | ref. |
|  0 < GBY ≤ 1 | 1.30 (1.17 to 1.45) | 1.41 (1.26 to 1.58) | 1.20 (1.12 to 1.30) | 1.15 (1.00 to 1.33) | 1.20 (1.02 to 1.41) |
|  1 < GBY ≤ 3 | 1.46 (1.25 to 1.69) | 1.93 (1.67 to 2.24) | 1.39 (1.25 to 1.55) | 1.20 (0.98 to 1.46) | 1.39 (1.11 to 1.73) |
|  > 3 GBYs | 2.15 (1.82 to 2.54) | 2.60 (2.19 to 3.07) | 1.61 (1.41 to 1.83) | 1.55 (1.23 to 1.95) | 1.52 (1.16 to 1.98) |

CAD=coronary artery disease; CER=cerebrovascular disease; CI=confidence interval; GBY=glycemic burden year; HR=hazard ratio.

aData are HR (95% CI).

**Supplemental Table S2**.Association between covariates and micro- and macrovascular complications adjusted for different measures for glycemic exposure

|  | HbA1c atindex | Time- dependent HbA1c | EMA | GBYs |
| --- | --- | --- | --- | --- |
|  | HR (95% CI) diabetic foot adjusted for |
| Age, y | 1.00 (1.00 to 1.01) | 1.03 (1.03 to 1.04) | 1.03 (1.03 to 1.04) | 1.03 (1.03 to 1.04) |
| Gender, female | 1.05 (0.99 to 1.13) | 1.02 (0.96 to 1.09) | 1.02 (0.96 to 1.09) | 1.02 (0.96 to 1.09) |
| Time since first time above threshold, y | - | 1.03 (1.00 to 1.05) | 1.02 (0.99 to 1.05) | 0.98 (0.95 to 1.01) |
| Time since last time above threshold, y | - | 0.99 (0.97 to 1.02) | 0.99 (0.96 to 1.02) | 1.02 (0.99 to 1.05) |
| Year of index | 1.49 (1.46 to 1.53) | 1.04 (1.02 to 1.06) | 1.03 (1.01 to 1.05) | 1.03 (1.02 to 1.05) |
|  | HR (95% CI) retinopathy adjusted for |
| Age, y | 1.01 (1.00 to 1.01) | 1.01 (1.01 to 1.02) | 1.01 (1.01 to 1.02) | 1.01 (1.01 to 1.02) |
| Gender, female | 1.05 (0.99 to 1.12) | 1.04 (0.97 to 1.11) | 1.04 (0.97 to 1.11) | 1.04 (0.97 to 1.11) |
| Time since first time above threshold, y | - | 1.13 (1.10 to 1.16) | 1.11 (1.08 to 1.15) | 1.05 (1.02 to 1.09) |
| Time since last time above threshold, y | - | 0.99 (0.96 to 1.02) | 1.00 (0.97 to 1.03) | 1.02 (0.99 to 1.06) |
| Year of index | 1.57 (1.54 to 1.61) | 0.98 (0.96 to 1.00) | 0.98 (0.96 to 1.00) | 0.98 (0.96 to 1.00) |
|  | HR (95% CI) renal complications adjusted for |
| Age, y | 1.01 (1.01 to 1.01) | 1.05 (1.05 to 1.06) | 1.05 (1.05 to 1.06) | 1.05 (1.05 to 1.06) |
| Gender, female | 1.09 (1.04 to 1.15) | 1.04 (0.99 to 1.09) | 1.04 (0.99 to 1.09) | 1.04 (0.99 to 1.09) |
| Time since first time above threshold, y | - | 1.09 (1.07 to 1.12) | 1.09 (1.07 to 1.12) | 1.05 (1.03 to 1.08) |
| Time since last time above threshold, y | - | 1.06 (1.04 to 1.09) | 1.05 (1.03 to 1.08) | 1.09 (1.06 to 1.11) |
| Year of index | 1.50 (1.47 to 1.52) | 0.98 (0.97 to 1.00) | 0.98 (0.97 to 1.00) | 0.98 (0.97 to 1.00) |
|  | HR (95% CI) CAD adjusted for |
| Age, y | 1.04 (1.03 to 1.04) | 1.04 (1.03 to 1.04) | 1.04 (1.03 to 1.04) | 1.04 (1.03 to 1.04) |
| Gender, female | 1.47 (1.35 to 1.61) | 1.48 (1.35 to 1.62) | 1.48 (1.35 to 1.62) | 1.48 (1.35 to 1.61) |
| Time since first time above threshold, y | - | 1.04 (1.00 to 1.08) | 1.03 (0.99 to 1.07) | 1.01 (0.97 to 1.05) |
| Time since last time above threshold, y | - | 1.00 (0.96 to 1.05) | 1.00 (0.96 to 1.04) | 1.02 (0.98 to 1.06) |
| Year of index | 0.94 (0.92 to 0.97) | 0.95 (0.92 to 0.97) | 0.95 (0.92 to 0.97) | 0.95 (0.92 to 0.97) |
|  | HR (95% CI) CER adjusted for |
| Age, y | 1.01 (1.00 to 1.01) | 1.07 (1.06 to 1.07) | 1.07 (1.06 to 1.07) | 1.07 (1.06 to 1.07) |
| Gender, female | 1.08 (0.98 to 1.20) | 1.15 (1.04 to 1.27) | 1.15 (1.04 to 1.27) | 1.15 (1.04 to 1.27) |
| Time since first time above threshold, y | - | 1.04 (0.99 to 1.08) | 1.03 (0.99 to 1.08) | 1.00 (0.96 to 1.05) |
| Time since last time above threshold, y | - | 0.99 (0.95 to 1.04) | 1.02 (0.97 to 1.06) | 1.04 (1.00 to 1.09) |
| Year of index | 1.47 (1.42 to 1.52) | 1.01 (0.98 to 1.04) | 1.00 (0.98 to 1.03) | 1.00 (0.98 to 1.03) |

CAD=coronary artery disease; CER=cerebrovascular disease; CI=confidence interval; EMA=exponential moving average; GBY=glycemic burden year; HR=hazard ratio.