Supplementary file

**Supplementary Table 1.** International classification of disease (ICD) codes used to identify indicators for stroke and comorbidities used in analyses

|  |  |  |  |
| --- | --- | --- | --- |
|  | ICD-8 | ICD-9 | ICD-10 |
| Hypertension | 400, 401, 402, 403, 404 | 401, 402, 403, 404, 405 | I10, I11, I12, I13, I15 |
| Atrial fibrillation | 427.92 | 427D | I48 |
| Congestive heart disease | 425, 427.0, 427.1 | 425, 428 | I42, I50 |
| Antiphospholipid syndrome |  |  | D68.6 |
| Diabetes | 250 | 250 | E10, E11 |
| Ischaemic stroke | 432, 433, 434 | 433, 434 | I63 |
| Intracerebral haemorrhage | 431.00, 431.08, 431.90, 431.98, 431.99 | 431 | I61 |
| Subarachnoid haemorrhage | 430 | 430 | I60 |
| Unspecified Stroke | 436 | 436 | I64 |

**Supplementary Table 2.** Number of strokes and person-years in the SLE clinical cohorts from Stockholm and Linköping (n=594) and their matched comparators (n=3108). Hazard ratios for any stroke and ischaemic stroke comparing SLE to the general population estimated using Cox regression models.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | General population | SLE Registered in Clinical Cohorts | Model 1Hazard Ratio(95% CI) | Model 2 Hazard Ratio(95% CI) |
|  | **No. Strokes/****person-years** | **Incidence Rate** **(95% CI)** | **No. Strokes/****person-years** | **Incidence Rate** **(95% CI)** |
| Any Stroke | 33 / 16 697 | 2.0 (1.4, 2.8) | 18 / 2903 | 6.2 (3.9, 9.8) | 3.0 (1.7, 5.3) | 2.9 (1.6, 5.3) |
| Ischaemic Stroke | 19 / 16 697 | 1.1 (0.7, 1.8) | 10 / 2903  | 3.4 (1.9, 6.4) | 2.7 (1.3, 5.9) | 2.7 (1.2, 6.0) |

Model 1: Cox regression model adjusted for age and sex. Model 2 adjusted for age, sex, education, history of hypertension, diabetes congestive heart disease and atrial fibrillation.

15 of the strokes occurred in the Stockholm Cohort, 3 of which occurred in individuals with antiphospholipid syndrome (APS). Restricted to the Stockholm cohort only and excluding individuals with APS, the Model 1 HR was 3.0 (1.6, 5.9) and Model 2 HR was 3.3 (1.6, 6.8).

**Supplementary Table 3.** Hazard ratios and 95% confidence intervals for each stroke type estimated using two different cause-specific models (column 1) and the Fine & Grey competing risk regression model (column 2)

|  |  |  |
| --- | --- | --- |
|  | Cause-specific model with censoring on other stroke and death (primary analysis) | Accounting for the competing risk of death and other stroke events (Fine & Grey model) |
|  | Hazard Ratio(95% CI) | Hazard Ratio(95% CI) |
| Ischaemic stroke | 2.2 (1.8, 2.8) | 2.0 (1.6, 2.5) |
| Intracerebral haemorrhage | 1.4 (0.7, 2.9) | 1.2 (0.6, 2.4) |
| Subarachnoid haemorrhage | 1.4 (0.5, 3.9) | 1.3 (0.4, 3.3) |
| Unspecified stroke | 2.7 (1.3, 5.6) | 2.3 (1.1, 4.7) |

All models adjusted for age, sex, education, history of hypertension, congestive heart disease, diabetes and atrial fibrillation.