**Supplemental Digital Content**

**Table 1.** **Factors associated with warfarin use at baseline**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Unadjusted** | ***p*-value** | **Adjusted Model** | ***p*-value** |
| **Parameter** | **Prevalence Ratio (95% CI)** |  | **Prevalence Ratio (95% CI)** |  |
| **CHA2DS2-VASc** **Factors** | | | | |
| Age (per decade) | 1.10 (0.99, 1.24) | 0.083 | 1.05 (0.93, 1.19) | 0.44 |
| Female | 0.57 (0.15, 2.10) | 0.40 | 0.66 (0.18, 2.53) | 0.53 |
| Diabetes | 1.30 (0.99, 1.72) | 0.057 |  |  |
| Hypertension | 1.07 (0.84, 1.37) | 0.57 |  |  |
| Vascular Disease | 1.53 (1.20, 1.96) | 0.007 |  |  |
| Heart Failure | 1.56 (1.21, 2.01) | 0.0006 | 1.54 (1.20, 1.99) | 0.0008 |
| **Other** | | | | |
| Black vs. White | 0.69 (0.53, 0.89) | 0.0042 | 0.80 (0.61, 1.04) | 0.097 |
| Other vs. White | 0.92 (0.39, 2.21) | 0.86 | 1.01 (0.47, 2.20) | 0.97 |
| Total Cholesterol (per 10 mg/dL) | 1.01 (0.98, 1.03) | 0.66 |  |  |
| Low Density Lipoprotein (per 10 mg/dL) | 1.00 (0.97, 1.04) | 0.83 |  |  |
| High Density Lipoprotein (per 10 mg/dL) | 0.96 (0.89, 1.04) | 0.31 |  |  |
| Triglyceride (per doubling) | 1.07 (0.95, 1.20) | 0.29 |  |  |
| Smoking | 0.82 (0.63, 1.07) | 0.14 |  |  |
| Illicit drug use | 0.92 (0.72, 1.18) | 0.51 |  |  |
| Alcoholism | 0.77 (0.58, 1.01) | 0.059 |  |  |
| Body Mass Index (per kg/m2) | 1.05 (1.03, 1.07) | <.0001 | 1.04 (1.02, 1.06) | <.0001 |
| 20-25 vs. <20 | 1.27 (0.80, 2.02) | 0.31 |  |  |
| 25-30 vs. <20 | 1.38 (0.86, 2.20) | 0.18 |  |  |
| >30 vs. <20 | 2.09 (1.30, 3.35) | 0.0022 |  |  |
| Serum Albumin (per 0.5 mg/dL) | 1.17 (1.08, 1.28) | 0.0002 | 1.12 (1.03, 1.22) | 0.00098 |
| 3.5-4.0 vs. <3.5 | 1.45 (1.05, 1.98) | 0.022 |  |  |
| >4.0 vs. <3.5 | 1.55 (1.13, 2.14) | 0.0072 |  |  |
| Proteinuria | 0.93 (0.71, 1.22) | 0.62 |  |  |
| eGFR (per 10 ml/min drop) | 1.02 (0.98, 1.06) | 0.45 |  |  |
| **HIV-Related Factors** | | | | |
| Current CD4 Count (doubling) | 1.13 (1.04, 1.24) | 0.0067 |  |  |
| Nadir CD4 (doubling) | 1.08 (1.01, 1.16) | 0.021 |  |  |
| HIV Viral Load >1000 | 0.71 (0.55, 0.92) | 0.011 |  |  |
| ART use (current) | 1.65 (1.22, 2.24) | 0.0012 | 1.50 (1.11, 2.04) | 0.0093 |
| Hepatitis C | 0.73 (0.55, 0.96) | 0.024 |  |  |
| Hepatitis B | 0.86 (0.60, 1.23) | 0.41 |  |  |

ART = anti-retroviral therapy; CI = confidence interval; eGFR = estimated glomerular filtration rate; HIV = human immunodeficiency virus; vs. = versus.

**Table 2. Sensitivity analysis of unadjusted associations of demographic and baseline clinical characteristics with thromboembolic events (excluding those taking warfarin at baseline)**

|  |  |  |
| --- | --- | --- |
| **Parameter** | **HR (95% CI)** | ***p*-value** |
| **CHA2DS2-VASc** **Factors** | | |
| Age (per decade) | 1.05 (0.72, 1.53) | 0.82 |
| Diabetes | 1.37 (0.51, 3.67) | 0.53 |
| Hypertension | 1.27 (0.57, 2.86) | 0.56 |
| Vascular Disease | 0.44 (0.13, 1.48) | 0.19 |
| Heart Failure | 1.34 (0.53, 3.36) | 0.53 |
| **Other** | | |
| Black vs. White | 1.29 (0.57, 2.91) | 0.55 |
| Other vs. White | na | na |
| Total Cholesterol (/10 mg/dL) | 1.01 (0.93, 1.09) | 0.88 |
| Low Density Lipoprotein (/10 mg/dL) | 1.07 (0.97, 1.17) | 0.19 |
| High Density Lipoprotein (/10 mg/dL) | 0.77 (0.62, 0.96) | 0.02 |
| Triglyceride (doubling) | 1.16 (0.82, 1.63) | 0.41 |
| Smoking | 0.81 (0.34, 1.95) | 0.64 |
| Illicit Drug Use | 0.68 (0.29, 1.59) | 0.38 |
| Alcoholism | 1.21 (0.54, 2.75) | 0.64 |
| Body Mass Index (kg/m2) | 1.07 (1.01, 1.13) | 0.02 |
| 20-25 vs. <20 | 1.09 (0.22, 5.36) | 0.91 |
| 25-30 vs. <20 | 3.06 (0.70, 13.36) | 0.14 |
| >30 vs. <20 | 2.29 (0.43, 12.23) | 0.33 |
| Serum albumin | 1.12 (0.85, 1.48) | 0.41 |
| 3.5-4.0 vs. <3.5 | 1.27 (0.47, 3.40) | 0.64 |
| >4.0 vs. <3.5 | 1.46 (0.53, 4.03) | 0.47 |
| Proteinuria | 0.88 (0.35, 2.20) | 0.79 |
| eGFR (per 10 ml/min decrease) | 0.98 (0.86, 1.10) | 0.72 |
| **HIV-Related Factors** | | |
| Current CD4 (doubling) | 0.92 (0.80, 1.07) | 0.28 |
| Nadir CD4 (doubling) | 0.94 (0.75, 1.20) | 0.64 |
| HIV Viral Load (tenfold) | 1.24 (0.94, 1.64) | 0.14 |
| ART use (current) | 0.98 (0.42, 2.28) | 0.96 |
| Hepatitis C | 0.44 (0.15, 1.28) | 0.13 |
| Hepatitis B | 0.25 (0.03, 1.85) | 0.17 |

ART = antiretroviral therapy; CI = confidence interval; eGFR = estimated glomerular filtration rate; HIV = human immunodeficiency virus; na = not applicable; vs. = versus.

**Table 3. Associations of demographic and baseline clinical characteristics with thromboembolic events (including hemorrhagic strokes)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Event rate (95% CI)** | **Unadjusted** | | **Adjusted** | |
| **Parameter** | **Level** | **N (%)** | **(per 1000 PY)** | **HR (95% CI)** | ***p*-value** | **HR (95% CI)** | ***p*-value** |
| **CHA2DS2-VASc** **Factors** | | | | | | | |
| Age | per decade |  |  | 1.05 (0.79, 1.41) | 0.72 |  |  |
| Gender | Female | 0 | 0 | na |  |  |  |
|  | Male | 36 (4.0%) | 8.5 (6.1, 11.8) |  |  |  |  |
| Diabetes | Yes | 5 (2.6%) | 7.2 (3.0, 17.2) | 0.75 (0.29, 1.92) | 0.55 |  |  |
|  | No | 31 (4.3%) | 8.5 (6.0, 12.1) | reference |  |  |  |
| Hypertension | Yes | 22 (4.7%) | 9.4 (6.2, 14.3) | 1.38 (0.71, 2.69) | 0.35 |  |  |
|  | No | 14 (3.1%) | 7.0 (4.2, 11.9) | reference |  |  |  |
| Vascular Disease | Yes | 6 (2.2%) | 5.5 (2.5, 12.2) | 0.55 (0.23, 1.31) | 0.18 |  |  |
| No | 30 (4.7%) | 9.3 (6.5, 13.3) | reference |  |  |  |
| Heart Failure | Yes | 11 (5.1%) | 13.6 (7.5, 24.6) | 1.54 (0.76, 3.11) | 0.23 |  |  |
|  | No | 25 (3.6%) | 7.1 (4.8, 10.5) | reference |  |  |  |
| **Other** | | | | | | | |
| Race | Black | 22 (5.3%) | 10.5 (6.9, 15.9) | 1.75 (0.88, 3.48) | 0.11 | 2.17 (1.07, 4.42) | 0.032 |
|  | Other | 1 (5.9%) | 22.1 (3.0, 150.0) | 2.91 (0.35, 24.2) | 0.32 | 2.66 (0.32, 21.9) | 0.36 |
|  | White | 13 (2.7%) | 5.9 (3.4, 10.2) | reference |  |  |  |
| Total Cholesterol | Per 10 mg/dL |  |  | 0.98 (0.91, 1.06) | 0.60 |  |  |
| Low Density Lipoprotein | Per 10 mg/dL |  |  | 1.02 (0.93, 1.11) | 0.71 |  |  |
| High Density Lipoprotein | Per 10 mg/dL |  |  | 0.73 (0.60, 0.90) | 0.003 | 0.69 (0.55, 0.87) | 0.001 |
| Triglycerides | Per doubling |  |  | 0.85 (0.60, 1.20) | 0.36 |  |  |
| Smoking | Yes | 11 (3.2%) | 8.6 (4.8, 15.5) | 0.95 (0.47, 1.93) | 0.90 |  |  |
|  | No | 25 (4.4%) | 8.2 (5.5, 12.1) | reference |  |  |  |
| Illicit drug use | Yes | 13 (3.3%) | 7.7 (4.5, 13.3) | 0.81 (0.41, 1.60) | 0.55 |  |  |
|  | No | 23 (4.5%) | 8.7 (5.8, 13.1) | reference |  |  |  |
| Alcoholism | Yes | 13 (4.1%) | 10.0 (5.8, 17.2) | 1.22 (0.62, 2.40) | 0.56 |  |  |
|  | No | 23 (3.8%) | 7.6 (5.0, 11.4) | reference |  |  |  |
| Body Mass Index | Per kg/m2 |  |  | 1.05 (1.00, 1.10) | 0.042 |  |  |
| <20 | 2 (1.6%) | 4.2 (1.1, 16.9) | reference |  |  |  |
|  | 20-25 | 12 (3.4%) | 7.0 (4.0, 12.3) | 2.19 (0.50, 9.6) | 0.30 |  |  |
|  | 25-30 | 16 (5.7%) | 11.3 (6.9, 18.4) | 3.87 (0.91, 16.5) | 0.067 |  |  |
|  | >30 | 6 (3.8%) | 8.3 (3.7, 18.4) | 2.79 (0.57, 13.6) | 0.20 |  |  |
| Serum Albumin | Per 0.5 mg/dL decrease | |  | 1.07 (0.87, 1.33) | 0.51 |  |  |
|  | <3.5 | 9 | 7.6 (4.0, 14.7) | reference |  |  |  |
|  | 3.5-4.0 | 17 | 9.9 (6.1, 15.9) | 1.67 (0.74, 3.75) | 0.21 |  |  |
|  | >4.0 | 10 | 7.0 (3.8, 13.0) | 1.25 (0.51, 3.08) | 0.63 |  |  |
| Proteinuria | Yes | 8 (2.8%) | 8.4 (4.2, 16.7) | 0.77 (0.35, 1.67) | 0.51 |  |  |
|  | No | 28 (4.5%) | 8.3 (5.7, 12.0) | reference |  |  |  |
| eGFR | per 10 ml/min decrease | |  | 0.96 (0.87, 1.07) | 0.49 |  |  |
| **HIV-Related Factors** | | | | | | | |
| Current CD4 | Per doubling |  |  | 0.91 (0.80, 1.02) | 0.10 |  |  |
| Nadir CD4 | Per doubling |  |  | 0.92 (0.79, 1.07) | 0.29 |  |  |
| HIV Viral Load | Per 10-fold increase |  | 1.14 (0.90, 1.43) | 0.28 |  |  |  |
| ART use (current) | Yes | 24 (3.9%) | 8.9 (6.0, 13.3) | 0.71 (0.36, 1.39) | 0.31 |  |  |
|  | No | 12 (4.1%) | 7.3 (4.1, 12.8) | reference |  |  |  |
| Hepatitis C | Yes | 7 (2.2%) | 5.7 (2.7, 11.9) | 0.57 (0.25, 1.30) | 0.18 |  |  |
|  | No | 29 (4.9%) | 9.3 (6.5, 13.4) | reference |  |  |  |
| Hepatitis B | Yes | 5 (3.4%) | 8.3 (3.4, 19.9) | 0.94 (0.37, 2.42) | 0.90 |  |  |
|  | No | 31 (4.0%) | 8.3 (5.8, 11.8) | reference |  |  |  |

There were 5 hemorrhagic strokes in addition to the 34 TE events in the primary analyses, one of which was also coded as an ischemic stroke. ART = antiretroviral therapy; CI =confidence interval; eGFR = estimated glomerular filtration rate; HIV = human immunodeficiency virus; HR = hazard ratio; na = not applicable; PY = person years.

**Table 4. Association of warfarin use with thromboembolic events, with and without adjustment for CHA2DS2-VASc** **score (including hemorrhagic strokes)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Parameter** | **Level** | **Unadjusted**  **HR (95% CI)** | ***p*-value** | **Multivariable Adjusted Marginal Structural Model**  **HR (95% CI)** | ***p*-value** |
| Baseline warfarin use | User vs. non-user | 2.14 (1.07, 4.26) | 0.031 | 2.49 (1.12, 5.52) | 0.025 |
| Time-updated warfarin use | Yes vs. no | 1.15 (0.52, 2.53) | 0.73 | 1.17 (0.48, 2.84) | 0.73 |
| Current warfarin durationa | Per year of exposure | 1.86 (0.48, 7.17) | 0.37 | 1.15 (0.22, 5.91) | 0.87 |

There were 5 hemorrhagic strokes in addition to the 34 TE events in the primary analyses, one of which was also coded as an ischemic stroke. Multivariable adjusted model controls for high density lipoprotein, race, heart failure, body mass index, and serum albumin.aDefined as duration of use among current warfarin users. CI = confidence interval; HR = hazard ratio; vs. = versus.