**Table 1 (supplementary).** Incidence of all fractures and osteoporotic fractures by HIV and age categories

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | | | | | **95% CI** | |
|  | | **Fractures**  **(except face,**  **skull, digits)** | **Person**  **years** | **IR per 1000**  **PYR** | **LL** | **UL** |
| **Age\*HIV** | 40-49 HIV- | 76 | 8481.9 | 9 | 7.2 | 11.2 |
| 50-59 HIV- | 63 | 7374.7 | 8.5 | 6.7 | 10.9 |
| ≥ 60 HIV- | 58 | 3852.8 | 15.1 | 11.6 | 19.5 |
| 40-49 HIV+ | 60 | 7372.1 | 8.1 | 6.3 | 10.5 |
| 50-59 HIV+ | 96 | 5273.1 | 18.2 | 14.9 | 22.2 |
| ≥ 60 HIV+ | 26 | 1602.4 | 16.2 | 11.1 | 23.8 |
|  | | | | | **95% CI** | |
|  |  | **Osteoporotic fractures** | **Person**  **years** | **IR per 1000**  **PYR** | **LL** | **UL** |
| **Age\*HIV** | 40-49 HIV- | 25 | 8750.1 | 2.9 | 1.9 | 4.2 |
| 50-59 HIV- | 23 | 7842.9 | 2.9 | 2 | 4.4 |
| ≥ 60 HIV- | 22 | 4302.3 | 5.1 | 3.4 | 7.8 |
| 40-49 HIV+ | 20 | 7609.8 | 2.6 | 1.7 | 4.1 |
| 50-59 HIV+ | 36 | 5708.7 | 6.3 | 4.6 | 8.8 |
| ≥ 60 HIV+ | 14 | 1836.2 | 7.6 | 4.5 | 12.9 |

Incidence rate (IR) per 1000 person year (PYR) of all fractures and osteoporotic fractures stratified by age categories and HIV status.

**Table 2 (supplementary).** Unadjusted Incidence Rate Ratio of all fractures and osteoporotic fractures

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **IRR**  **All fractures** | **95% CI** | |  | **IRR**  **Fragility**  **fractures** | **95% CI** | |  |
|  | | **LL** | **UL** | **P-value** | **LL** | **UL** | **P-value** |
| Age group | 40-49 | 1 | 1 | 1 | . | 1 | 1 | 1 | . |
| 50-59 | 1.47 | 1.17 | 1.84 | **0.001** | 1.58 | 1.07 | 2.33 | **0.020** |
| ≥ 60 | 1.79 | 1.37 | 2.36 | **<0.001** | 2.13 | 1.38 | 3.3 | **<0.001** |
| HIV infection | | 1.28 | 1.04 | 1.56 | **0.017** | 1.38 | 0.99 | 1.92 | 0.057 |
| Non-Caucasian | | 0.82 | 0.64 | 1.5 | 0.121 | 0.79 | 0.52 | 1.19 | 0.264 |
| BMI ≥25 | | 0.87 | 0.69 | 1.09 | 0.216 | 0.79 | 0.56 | 1.13 | 0.195 |
| Hypertension | | 1.44 | 1.15 | 1.8 | **0.002** | 1.41 | 0.99 | 2.03 | 0.059 |
| Diabetes | | 1.07 | 0.73 | 1.56 | 0.723 | 0.7 | 0.33 | 1.5 | 0.355 |
| Hepatitis C | | 0.97 | 0.61 | 1.55 | 0.899 | 1.65 | 0.88 | 3.1 | 0.116 |
| eGFR <60 | | 1.79 | 1.18 | 2.71 | **0.006** | 1.55 | 0.76 | 3.17 | 0.225 |
| Current smoking | | 1.02 | 0.81 | 1.29 | 0.867 | 1.22 | 0.84 | 1.77 | 0.305 |
| Moderate-Heavy/Binge drinking | | 1 | 0.78 | 1.27 | 0.987 | 0.87 | 0.57 | 1.31 | 0.499 |

Unadjusted Incidence Rate Ratio (IRR) of all fractures and osteoporotic fractures was estimated using univariable Poisson regression models. Multiple imputation was carried out to fill in missing covariates data.

**Table 3 (supplementary).** Adjusted Incidence Rate Ratio of all fractures and osteoporotic fractures

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Adjusted**  **IRR**  **All fractures** | **95% CI** | |  | **Adjusted**  **IRR**  **Fragility**  **fractures** | **95% CI** | |  |
|  | | **LL** | **UL** | **P-value** | **LL** | **UL** | **P-value** |
| Age \*HIV | HIV- 40-49 | 1 | 1 | 1 | . | 1 | 1 | 1 | . |
| HIV- 50-59 | 0.93 | 0.66 | 1.3 | 0.675 | 1.02 | 0.58 | 1.81 | 0.945 |
| HIV- ≥ 60 | 1.51 | 1.06 | 2.16 | **0.023** | 1.72 | 0.95 | 3.12 | 0.074 |
| HIV+ 40-49 | 0.92 | 0.65 | 1.29 | 0.623 | 0.92 | 0.51 | 1.66 | 0.781 |
| HIV+ 50-59 | 1.92 | 1.41 | 2.61 | <**0.001** | 2.1 | 1.24 | 3.55 | **0.006** |
| HIV+ ≥ 60 | 1.56 | 0.98 | 2.49 | 0.060 | 2.51 | 1.26 | 5 | **0.009** |
| Non-Caucasian | | 0.84 | 0.64 | 1.09 | 0.194 | 0.75 | 0.47 | 1.17 | 0.202 |
| BMI ≥ 25 | | 0.85 | 0.67 | 1.08 | 0.174 | 0.83 | 0.58 | 1.19 | 0.314 |
| Hypertension | | 1.32 | 1.04 | 1.69 | **0.025** | 1.36 | 0.91 | 2.02 | 0.135 |
| Diabetes | | 0.89 | 0.59 | 1.33 | 0.549 | 0.54 | 0.23 | 1.26 | 0.150 |
| Hepatitis C | | 0.92 | 0.56 | 1.51 | 0.744 | 1.66 | 0.84 | 3.29 | 0.147 |
| eGFR < 60 | | 1.44 | 0.93 | 2.24 | 0.105 | 1.18 | 0.56 | 2.49 | 0.663 |
| Current smoking | | 1.1 | 0.86 | 1.41 | 0.456 | 1.3 | 0.87 | 1.93 | 0.198 |
| Moderate-Heavy/Binge drinking | | 1.03 | 0.8 | 1.32 | 0.807 | 0.86 | 0.56 | 1.31 | 0.482 |

Adjusted Incidence Rate Ratio (aIRR) was estimated using Poisson regression model adjusting for age\*HIV status interaction, BMI, race, eGFR, hypertension, diabetes, HCV-infection, tobacco smoking and alcohol use. Multiple imputation was carried out to fill in missing covariates data.

**Table 4 (supplementary):** Adjusted Incidence Rate Ratio of all fractures and fragility fractures in the HIV-infected men.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | **Adjusted**  **IRR**  **All fractures** | **95% CI** | |  | **Adjusted**  **IRR**  **Fragility**  **fractures** | **95% CI** | |  |
|  | | **LL** | **UL** | **P-value** | **LL** | **UL** | **P-value** |
| Age group | 40-49 | 1 | 1 | 1 | . | 1 | 1 | 1 | . |
| 50-59 | 1.55 | 1.09 | 2.2 | 0.015 | 1.69 | 0.93 | 3.05 | 0.083 |
| ≥ 60 | 1.05 | 0.62 | 1.78 | 0.847 | 1.85 | 0.84 | 4.07 | 0.124 |
| Non-Caucasian | | 0.78 | 0.54 | 1.12 | 0.173 | 0.85 | 0.48 | 1.51 | 0.577 |
| BMI ≥ 25 | | 0.72 | 0.52 | 1 | 0.048 | 0.73 | 0.42 | 1.27 | 0.262 |
| Hypertension | | 1.35 | 0.97 | 1.88 | 0.075 | 1.02 | 0.57 | 1.83 | 0.947 |
| Diabetes | | 0.74 | 0.41 | 1.33 | 0.312 | 0.6 | 0.2 | 1.76 | 0.339 |
| Hepatitis C | | 0.8 | 0.41 | 1.53 | 0.495 | 1.45 | 0.59 | 3.54 | 0.412 |
| eGFR < 60 | | 1.48 | 0.87 | 2.52 | 0.145 | 0.79 | 0.28 | 2.19 | 0.646 |
| Current smoking | | 0.97 | 0.68 | 1.37 | 0.85 | 1.04 | 0.59 | 1.83 | 0.883 |
| Moderate-Heavy/Binge drinking | | 1.18 | 0.82 | 1.71 | 0.379 | 0.66 | 0.32 | 1.37 | 0.265 |
| CD4+ < 500 cells/uL | | 1.1 | 0.8 | 1.52 | 0.549 | 0.85 | 0.49 | 1.49 | 0.573 |
| Viremia copy-years/log 10 increase in copy-years/ml | | 1.14 | 1.01 | 1.3 | 0.042 | 1.17 | 0.95 | 1.44 | 0.143 |
| History of AIDS | | 0.98 | 0.66 | 1.44 | 0.905 | 1.2 | 0.66 | 2.16 | 0.552 |
| Cumulative TDF/5 years | | 1.13 | 0.87 | 1.47 | 0.37 | 0.94 | 0.62 | 1.45 | 0.792 |
| Cumulative PI/5 years | | 1.15 | 0.95 | 1.39 | 0.145 | 1.27 | 0.95 | 1.7 | 0.11 |
| Current ART use | | 2.61 | 1.58 | 4.3 | <0.001 | 3.07 | 1.27 | 7.42 | 0.013 |

Adjusted Incidence Rate Ratio of all fractures and osteoporotic fractures in the HIV-infected cohort was estimated using multivariable Poisson regression models with 10 multiply imputed datasets