Supplementary Table 1: Characteristics of pregnant people with HIV diagnosed in 2016-2019 and pregnant people without HIV delivering in 2018 and 2019 in the Western Cape Province public-sector

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Total | No HIV | HIVNo ART | HIVPreconception ART | HIV Pregnancy-initiated ART |
| Total N (row %) | 161,037 | 146,575 (91.0) | 2,563 (1.6) | 4,267 (2.7) | 7,632 (4.7) |
| Age at delivery – median (IQR) | 26.3 (22.1; 31.2) | 26.2 (22.0; 31.2) | 27.6 (23.2; 32.5) | 27.5 (24.2; 31.8) | 26.5 (23.1; 30.8) |
| Multiparity – N (%) | 65,569 (40.7) | 61,105 (41.7) | 873 (34.1) | 1,833 (43.0) | 1,758 (23.0) |
| Hypertensive disorders of pregnancy |
| None - N (%) | 144,525 (89.8) | 131,426 (89.7) | 2,209 (86.2) | 3.914 (91.7) | 6,976 (91.4) |
| dnHDP - N (%) | 12,249 (7.6) | 11,210 (7.7) | 275 (10.7) | 251 (5.9) | 513 (6.7) |
| Pre-existing hypertension only – N (%) | 4,263 (2.7) | 3,939 (2.7) | 79 (3.1) | 102 (2.4) | 143 (1.9) |
| HIV & ART Characteristics |  |  |  |
| Pregnancy CD4 count – median (IQR) (N=9,975) | 400 (266; 560) | NA | 433 (289; 610) | 454 (305; 620) | 376 (254; 526) |
| Duration on ART – median (IQR)  | 28 (18; 78) | NA | NA | 100 (72; 129) | 21 (14; 27) |
| First-line regimen TDF-FTC-EFV throughout† - N (%) | 10,675 (89.7) | NA | NA | 3,649 (85.5) | 7026 (92.1) |
| Any 2nd (or higher) line regimen† - N (%) | 205 (1.7) | NA | NA | 108 (2.5) | 97 (1.3) |

ART – antiretroviral therapy; dnHDP – de novo hypertensive disorders of pregnancy; IQR – interquartile range; NA – not applicable; TDF-FTC-EFV – tenofovir/emtricitabine/efavirenz; † % in people on ART

Supplementary Table 2: Sensitivity analyses of the effect of potential misclassification of de novo hypertensive disorders of pregnancy on prevalence ratios for the primary exposure (HIV and ART classification)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Unadjusted PR(95% CI) | Adjusted PR(95% CI)Model 1[N = 180,553] | Adjusted PR(95% CI)Model 2[N=176,128] | Adjusted PR(95% CI)Model 3[N = 157,507] |
| Original estimates as in Table 3: |  |  |  |  |
| HIV and ART classification |  |  |  |  |
| No HIV  | **Reference** | **Reference** | **Reference** | **Reference** |
| HIV ART-none | 1.28 (1.16; 1.41) | 1.16 (1.06; 1.28) | 1.17 (1.06; 1.29) | 1.29 (1.15; 1.44) |
| HIV ART-preconception  | 0.90 (0.84; 0.95) | 0.79 (0.75; 08.3) | 0.78 (0.74; 0.83) | 0.77 (0.69; 0.87) |
| HIV ART-pregnancy  | 0.92 (0.85; 0.99) | 0.93 (0.87; 0.99) | 0.83 (0.75; 0.92) | 0.84 (0.75; 0.95) |
| Misclassification scenario A: |  |  |  |  |
| HIV and ART classification |  |  |  |  |
| No HIV  | **Reference** | **Reference** | **Reference** | **Reference** |
| HIV ART-none | 1.31 (1.17; 1.47) | 1.21 (1.08; 1.35) | 1.21 (1.08; 1.35) | 1.32 (1.16; 1.50) |
| HIV ART-preconception  | 0.86 (0.81; 0.92) | 0.77 (0.72; 0.82) | 0.77 (0.72; 0.82) | 0.75 (0.65; 0.86) |
| HIV ART-pregnancy  | 0.91 (0.84; 1.00) | 0.92 (0.84; 1.00) | 0.88 (0.78; 0.99) | 0.88 (0.77; 1.01) |
| Misclassification scenario B: |  |  |  |  |
| HIV and ART classification |  |  |  |  |
| No HIV  | **Reference** | **Reference** | **Reference** | **Reference** |
| HIV ART-none | 1.26 (1.15; 1.41) | 1.16 (1.05; 1.28) | 1.16 (1.05; 1.28) | 1.27 (1.13; 1.43) |
| HIV ART-preconception  | 0.89 (0.84; 0.94) | 0.78 (0.74; 0.82) | 0.78 (0.74; 0.82) | 0.74 (0.65; 0.84) |
| HIV ART-pregnancy  | 0.92 (0.85; 0.99) | 0.93(0.85; 1.00) | 0.87 (0.78; 0.96) | 0.87 (0.77; 0.98) |

ART – antiretroviral therapy; CI – confidence interval; dnHDP – de novo hypertensive disorders of pregnancy; PR – prevalence ratio; Scenario A assumes that all people classified as having dnHDP by first antihypertensive prescription <140 days prior to delivery (N=3,271) without a confirming ICD-10 code delivered pre-term and actually had pre-existing hypertension; Scenario B restricts the misclassification in Scenario A to those also with an infant with birth weight <2500g (proxy for preterm delivery) (N=885). Model 1 includes all pregnant people 2018-2019; Model 2 excludes people with HIV if ART started <140 days prior to delivery; Model 3 further excludes people with HIV if diagnosed before 2016

Supplementary Table 3: Sensitivity analyses of the effect of potential misclassification of de novo hypertensive disorders of pregnancy on the association with ART initiation/duration and 2nd (or higher) line regimen

|  |  |  |  |
| --- | --- | --- | --- |
|  | Unadjusted PR(95% CI)N=25,726 | Adjusted PR(95% CI)Model 1N=23,662 | Adjusted PR(95% CI)Model 2N=7,763 |
| Original estimates as in Table 4 |  |  |  |
| ART initiation and duration classification |  |  |  |
| ART-pregnancy | Reference | Reference | Reference |
| ART-preconception <100 weeks | 1.06 (0.90; 1.25) | 1.03 (0.87; 1.22) | 1.00 (0.81; 1.89) |
| ART-preconception >100 weeks | 1.07 (0.96; 1.21) | 0.88 (0.78; 0.98) | 0.83 (0.66; 1.03) |
| Any 2nd (or higher) line (reference: first line) | 1.58 (1.35; 1.85) | 1.49 (1.28; 1.75) | 1.11 (0.65; 1.89) |
| Misclassification scenario A: |  |  |  |
| ART initiation and duration classification |  |  |  |
| ART-pregnancy | Reference | Reference | Reference |
| ART-preconception <100 weeks | 0.93 (0.77; 1.13) | 0.90(0.74; 1.09) | 0.83 (0.65; 1.06) |
| ART-preconception >100 weeks | 0.98 (0.86; 1.12) | 0.84 (0.72; 0.97) | 0.84 (0.66; 1.08) |
| Any 2nd (or higher) line (reference: first line) | 1.56 (1.30; 1.88) | 1.48 (1.23; 1.79) | 0.91 (0.45; 1.81) |
| Misclassification scenario B: |  |  |  |
| ART initiation and duration classification |  |  |  |
| ART-pregnancy | Reference | Reference | Reference |
| ART-preconception <100 weeks | 0.97 (0.82; 1.16) | 0.93 (0.78; 1.11) | 0.98 (0.55; 1.77) |
| ART-preconception >100 weeks | 1.03 (0.92; 1.16) | 0.85 (0.75; 0.96) | 0.89 (0.72; 1.11) |
| Any 2nd (or higher) line (reference: first line) | 1.52 (1.28; 1.79) | 1.42 (1.20; 1.68) | 0.98 (0.55; 1.77) |

ART – antiretroviral therapy; CI – confidence interval; PR – prevalence ratio; Scenario A assumes that all people classified as having dnHDP by first antihypertensive prescription <140 days prior to delivery without a confirmatory ICD-10 code delivered pre-term and actually had pre-existing hypertension; Scenario B restricts the misclassification in Scenario A to those also with an infant with birth weight <2500g (proxy for preterm delivery). Model 1: includes all pregnant people with HIV on ART > 140 days during pregnancy delivering in 2018 and 2019, adjusted for maternal baseline factors (age as a continuous variable in years, multiparity, multi-gestation pregnancy and pre-existing hypertension as binary variables) and 2nd (or higher) line regimen. Models 2: as for model 1 with additional restriction to people diagnosed with HIV in 2016 or later.