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Differences in ART regimen initiation among people with recently acquired HIV: 2015-2021

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CASCADE

PURPOSE

- **Background**
  - Post-2015 guidelines recommend rapid ART initiation upon diagnosis
  - Over time there has been a shift away from NNRTI- and PI-based regimens in favor of INSTI-based ones
  - Equitable access to all treatment options is critical; differing patterns of ART use across groups may exist
- **Purpose:** To examine temporal trends and identify differences by clinical and demographic factors in people diagnosed within 12 months of HIV acquisition

METHODS

- Data were pooled from CASCADE, a multinational study of cohorts from France, Netherlands, Spain, Sweden, Greece, Canada, UK
- All participants have well estimated dates of HIV-1 seroconversion (SC) with HIV-1 test window ≤12 months or other laboratory evidence of SC
- *Eligible:* those initiating ART on or after 1/1/2015, with a regimen including one PI, NNRTI or INSTI
- Regimens were classified as PI, NNRTI, 1st generation INSTI (incl. elvitegravir/raltegravir), 2nd generation INSTI (incl. dolutegravir/bictegravir)
- Multinomial logistic regression was used to assess differences in the probability of initiating ART with one of the four categories
- Calendar time relative to 1/1/2015 was flexibly modelled through a natural cubic spline with two knots at 1/1/2017 and 1/1/2021; we further adjusted for sex at birth, region of origin, acute infection (acute seroconversion illness or HIV negative-positive test interval ≤30 days), probable HIV exposure route, CD4 count and viral load at ART initiation
- *Secondary analysis*: the above analyses were repeated stratifying the INSTI regimens based on the specific drug (raltegravir, elvitegravir, dolutegravir, bictegravir)

CONCLUSIONS

- Second-generation INSTIs represent the predominant class prescribed for first-line ART regimens at present, aligning with current treatment guidelines
- Despite early presentation to care, women and individuals originating from African countries appear less likely to be prescribed ART regimens from this class
- Possibly explained by concerns about:
  - dolutegravir and neural tube defects, resulting in temporary safety warnings and restrictions in prescribing in 2017-2019
  - Differential weight gain on 2nd gen INSTIs (people of African ethnicity, especially women)
- **Limitations:** Not able to examine some clinical variables that could influence the choice of ART such as pregnancy
- Need for qualitative research to under prescriber decision-making in order to understand and address disparities in care.

RESULTS

- 6,850 individuals were included in the analysis; 80% men having sex with men (MSM), 11% women having sex with men (WSM), 70% originated from Europe/North America, 9% from Sub-Saharan Africa
- 3,545 (52%) initiated ART with a 2nd gen INSTI (70% of which were dolutegravir-based), 20% with a 1st gen INSTI and 11% with a PI-based regimen (Fig. 1)
- Approximately 2% initiated ART with dual therapy (primarily dolutegravir/lamivudine)
- ➢ The probability of initiating ART with a 2nd gen INSTI by early 2021 was estimated to be 70% for WSM (95% CI: 66%-74%) compared to 81%-88% for people with the other probable HIV exposure routes (Figure 2, A.)
- ➢ The same probability was estimated to be 69% (95% CI: 65%-74%) for Sub-Saharan Africans compared to around 85% for people of other regions of origin (Figure 2, B.)
- ➢ A move to bictegravir as first-line therapy in people who inject drugs (PWID) was estimated to occur approximately 18 months later than it did for other populations

Figure 1: *Estimated probability of starting ART regimen categories over time.*

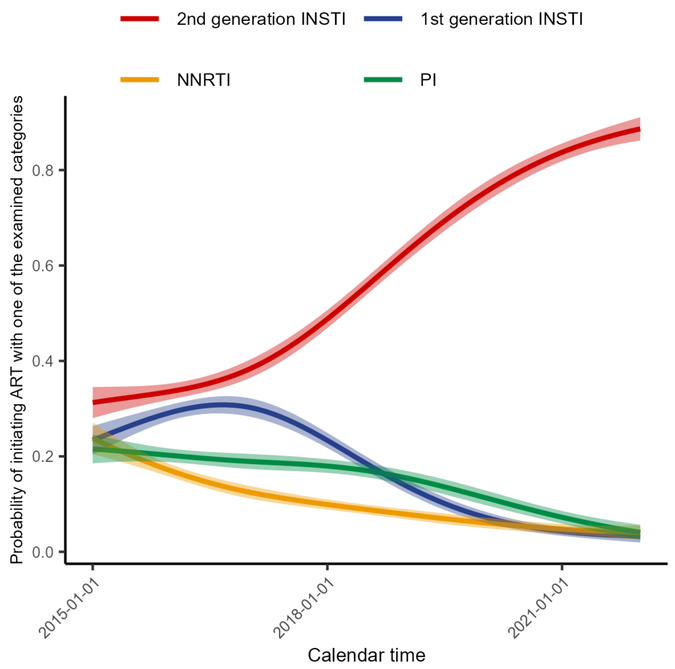
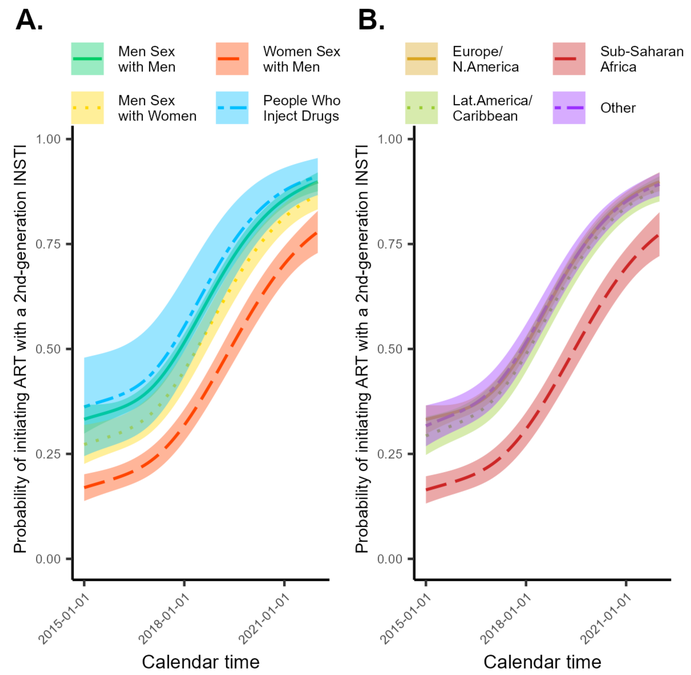


Figure 2: *Estimated probability of initiating ART with a 2nd generation INSTI over time, by probable HIV exposure route (A) or region of origin (B).*



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