Uptake and outcomes of tenofovir alafenamide fumarate based therapy in children and young people living with HIV in the European Pregnancy and Paediatric Infections Cohort Collaboration

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Background

Tenofor alafenamide fumarate (TAF) was originally approved in Europe for children and young people living with HIV aged ≥6 years in 2016, initially as part of fixed-dose combinations (approvals of some TAF-containing products were extended to age ≥2 years in 2022).

Data are limited on TAF uptake and outcomes among children and young people in HIV care in Europe.

Methods

Data source: Individual level data of children/young people in HIV care in cohorts participating in the EPPICC data merger in 2021 (data-cut-offs differed by cohort between 12/2019-05/2021), includes all visits in paediatric care, some cohorts include follow-up time after transition to adult care.

Inclusion criteria for this analysis: Children and young people living with HIV, aged ≥18 years at HIV diagnosis and followed in participating cohorts in Europe with at least 1 participant ever on TAF (11 cohorts across 11 countries).

Uptake of TAF: proportion of participants in follow up for ≥6 months in a calendar year who were on TAF at any point in that year, overall and by current age at end of the calendar year (6 to <12 y, 12 to <18 y, 18 to ≤24 y and ≥24 y). Proportion ever of TAF among all those in follow up since 2016 was also described.

Characteristics at TAF start: participant characteristics and regimen were described, including antiretroviral treatment (ART) and viral load (VL) status at TAF start ("ART-naïve", "ART-experienced/suppressed" (VL<50c/ml), "ART-experienced/unsuppressed" (VL≥50c/ml), and "ART-experienced/VL unknown" (no VL available 3 months before to 1 week after TAF start).

Viral suppression on TAF: among those remaining on TAF, percentage (95% CI) virally suppressed (VL<50c/ml) at 6, 12 and 18 months (+/-3 months), overall and by ART/VL status at TAF start.

Results: Uptake of TAF

• Of 3,318 children and young people in follow-up since 2016, 670 (20%) ever received TAF.

• Among 984 in follow-up at the start of 2020, 6% were age <6 years, 16% 6 to <12, 40% 12 to <18, 19% 18 to ≤24 and 19% ≥24 years.

• Uptake was slowest in the 6 to <12-year age group, but by 2020 just under 20% were on TAF (Figure 1).

• Uptake was highest in Sweden, Italy and Greece (Figure 2).

• Median duration on TAF was 1.2 [IQR 0.6,2.0] years.

Results: Characteristics at start of TAF

• 95% of 670 children and young people ever on TAF had perinatally acquired HIV or were aged <10 years at diagnosis or entry to HIV care; 56% were female; median age at ART initiation was 3.5 [0.6, 8.8] years.

• At start of TAF:
  - median age was 17.6 [14.6, 22.9] years; <1% age <6 years, 10% 6 to <12 years, 42% 12 to <18 years, 27% 18 to <24 years and 20% ≥24 years.
  - 48% started TAF as part of an integrase inhibitor-based regimen, 31% protease inhibitor, 13% Non-Nucleoside Reverse Transcriptase Inhibitor and 7% other/multiple classes; 66% previously used tenofovir disoproxil fumarate (TDF).
  - 3% were ART naïve, 49% ART-experienced and suppressed, 23% ART-experienced and unsuppressed, 24% ART-experienced.
  - among those who were ART-experienced median time since ART start was 13.9 [9.0, 19.4] years.
  - age and CD4 count at TAF start by ART/VL status are shown in Figure 3; those who were ART-experienced and unsuppressed or were ART naïve at TAF start had the lowest CD4 counts.

Results: Viral suppression on TAF

• At 6, 12 and 18 months on TAF, overall viral suppression was >80% and was lowest at all timepoints among those who were treatment-experienced and unsuppressed at TAF start (Figure 4).

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Summary

• One-fifth of children and young people in our pan-European cohort had received TAF, most were adolescents and young adults.

• Over 80% of those who were ART naïve or virally suppressed at TAF start maintained good levels of viral suppression, while two-thirds of those who were ART-experienced and unsuppressed at TAF start were virally suppressed at follow up.