Effectiveness, persistence and safety of E/C/F/TAF, R/F/TAF+3rd agent or R/TAF use in treatment-experienced HIV-1 infected patients – 12 month results from the German TAFNES cohort study

Hilkenbrand Heribert1, Knoechten Heribert1, Kümmerle Tim1, Scholten Stefan1, Schübel Nils1, Haubrich Richard2, Heinzelmann Marion2, Görner Karin2, Steiblmann Hans-Jürgen3

1*Würzburg City Dept Berlin-Germany; 2*Praxis Dr. Knoechten-Aachen Germany; 3*Praxis Dr. Eberhard-Klinn Klinn Germany; 4*Praxis Hertenerstraße Klinn Germany; 5*Gilead Sciences, Inc. Gilead Sciences USA; 6*Gilead Sciences Munich Germany; 7*Gilead Study Center Hamburg Germany

Background
Successful ART has converted HIV-infection into chronic disease. Minimizing side effects, optimizing long-term tolerability of ART and durable virologic suppression are essential requirements for achieving durable healthy aging. In clinical trials, boosted alafenamide (TAF) showed comparable effectiveness and less off-target effects on renal and bone markers than tenofovir disoproxil fumarate (TDF). The 24-month prospective TAFNES cohort study was initiated to provide real world data and evaluate the effectiveness and safety of TAF/TAF-based regimens when used in treatment-naïve and treatment-experienced patients in routine clinical care.

Methods
- Evaluation of month 12 (M12) outcomes of using E/C/F/TAF-based regimens, i.e. E/C/F/TAF (elvitegravir/cobicistat/emeritibacida/TAF), TAF/TAF+3rd agent or R/TAF (rifampicin/TAF/TAF).
- The analysis population consisted of TE patients starting treatment at least 9 months prior to data cut (May 2018) and with either a documented visit within the predefined M12 visit window (between months 9 and 15 after TAF initiation) or a documented premature study/treatment discontinuation.
- Outcome measures included ART persistence (using Kaplan-Meier analysis), virologic effectiveness (HIV-RNA<50 c/ml, modified ITT-analyses (mITT), discontinuation=failure, loss-to-follow-up and missing-excluded), incident serious/non-serious adverse drug reactions (SADR/SARs; i.e. events considered at least possibly related to study drug by the investigator) and health-related quality of life (HRQOL), using validated questionnaires, namely the SF-36 (norm-based scoring, higher scores indicate higher HRQOL), the HIV Symptom Index (HIV-SI; range 0-60, higher scores indicate more bothersome symptoms), and treatment satisfaction (TS, range 0-60, higher scores indicate greater satisfaction).

Results
- Study population: N=434 TE patients were eligible for analysis, 154 patients were switched to E/C/F/TAF, 146 to TAF/TAF+3rd agent (30% dolutegravir, 16% nevirapine, 13% raltegravir, 11% darunavir/ritonavir) and 134 to R/TAF, 95% were switched from TDF-based ART.
- Reasons for switch to (multiple reasons permitted): E/C/F/TAF were simplification (n=127, 29%), patient wish (n=138, 32%), side effects on previous ART (n=185, 43%), and other (n=77, 18%; including aiming to minimize long-term toxicity (n=55, 13%).

Persistence on E/F/TAF and reasons for discontinuation until month 12
ART persistence was high with >90% after 12 months in all groups (Figure 1). Overall, 8% (n=35/434) discontinuation study and/or study drug before M12 visit, after a median time of 26 weeks. Reasons for discontinuation are shown in Table 2.

Health-related quality of life (HRQOL): SF-36, HIV-SI and TS
- At baseline, SF-36 mean mental component scores (+/- standard deviation, SD) were 45.0 (12.5) for E/C/F/TAF, 45.8 (13.3) for TAF/TAF+3rd agent, and 47.2 (13.4) for R/TAF.
- SF-36 mean physical component scores were 53.8 (10.1) for E/C/F/TAF, 48.9 (11.9) for TAF/TAF+3rd agent, and 49.8 (12.8) for R/TAF.
- Mean HIV SI scores were 15.0 (14.2) for E/C/F/TAF, 15.8 (15.3) for TAF/TAF+3rd agent, and 13.1 (12.7) for R/TAF.
- At month 12, changes in SF-36 and HIV-SI were not statistically significant for the total study population nor within the groups.
- At baseline, mean HIV TS scores (SD) were 52.6 (8.8) for the total study population, 50.8 (9.7) for E/C/F/TAF, 54.2 (7.2) for TAF/TAF+3rd agent, and 53.1 (9.8) for R/TAF.
- By month 12, treatment satisfaction (TS) significantly increased in treatment-experienced patients for all treatment groups (Figure 3).

Conclusions
- ART-based regimens showed good persistence of more than 90% after 12 months in this observational cohort of adult treatment-experienced patients and low discontinuation rates due to ADRs (2%) or virologic failure (<1%).
- Significant improvements in treatment satisfaction demonstrate a high degree of patient acceptability of using TAF/TAF as part of single- or multi-tablet regimens.

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