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Uptake of tenofovir-based combination antiretroviral therapy among HIV/HBV co-infected patients in the EuroSIDA study

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Objectives

For HIV/HBV co-infected patients, potent and durable HBV treatment has been available since the approval of tenofovir (TDF) in early 2002. We aimed to investigate factors associated with use of TDF-based cART among HIV/HBV patients in the EuroSIDA study.

Methods

All HBsAg+ patients followed up after March 2002 were included. Changes in the proportion of patients taking HBV active cART over time were described. Factors associated with TDF use among those on cART were investigated using Poisson regression.

Results

A total of 821 HIV/HBV patients were included. At inclusion, the median age was 39 years and 446 (54%) were taking cART. Patients were predominantly male (84%), white (82%) and MSM (45.7%). 620 and 201 were from Western Europe and Eastern Europe, respectively **(table 1)**. Among ART naïve patients starting cART during follow-up (N=219), the proportion starting with CD4+ <350 cells/mm^3 decreased from 79.7% to 57.4% in the periods 2002-2005 to 2010-2013. Use of TDF, among patients taking cART, increased from 9.2% to 74.7% in 2010, after which it plateaued. Compared to Western Europe, use of TDF was low in Eastern Europe until 2005 (9.7% vs. 47.6%), but similar in 2013 (72.1 vs. 75.3%), **figure 1**. Factors associated with taking TDF based cART stratified by early (2002-2005) and late (2010-2013) time periods are shown in **figure 2**. Among patients taking TDF-based cART during follow-up (N=567), 96 (16.9%) stopped taking TDF. The most common reason reported for stopping TDF was renal toxicity (26%), **table 2**. Only seven started adefovir, entecavir or telbivudine after TDF discontinuation.

Conclusions

Although the use of TDF based cART among HIV/HBV patients has increased across Europe, a substantial proportion of patients are still starting cART late and are receiving suboptimal HBV therapy, including amongst those who discontinue TDF as part of their cART regimen.

Table 1

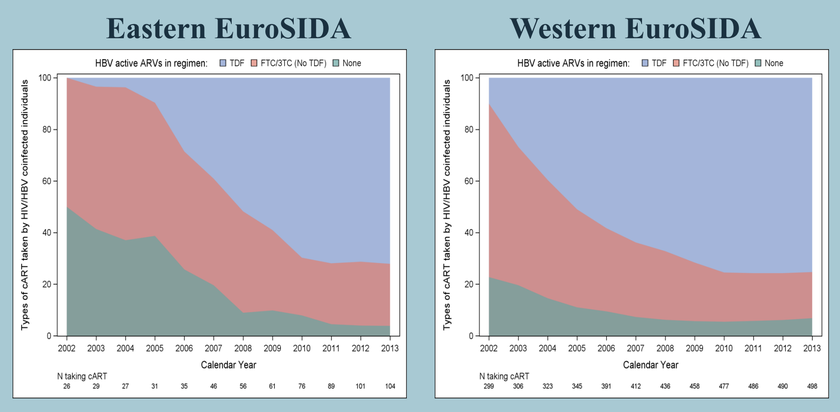
Baseline characteristics of 821 HIV/HBV co-infected individuals

	N (%) or median (IQR)
Age (years)	39 (33 - 45)
Sex (male)	690 (84.0%)
Race (white)	672 (81.9%)
Risk group (injection drug use)	207 (25.2%)
Region of EuroSIDA	
Western Europe + Argentina	620 (75.5%)
Eastern Europe	201 (24.5%)
HBV DNA	
>2000 IU/ml	59 (7.2%)
<2000 IU/ml	124 (15.1%)
HCV status	
Anti-HCV negative	543 (66.1%)
Anti-HCV positive	247 (30.1%)
Anti-HCV positive/HCV-RNA positive	99 (12.1%)
Fibrosis	
F0/F1	143 (17.4%)
F2/F3/F4	22 (2.7%)
On cART	446 (54.3%)
HIV RNA	
<50 copies/ml	295 (35.9%)
>50 copies/ml	395 (48.1%)
CD4 (cells/microliter)	362 (223 - 543)
Baseline date	MAR2002 (MAR2002 - JAN2006)

Number (%) with unknown data: HBV-DNA 638 (77.7), anti-HCV 247 (30.1), fibrosis 656 (79.9), HIV-RNA (16.0)

Figure 1

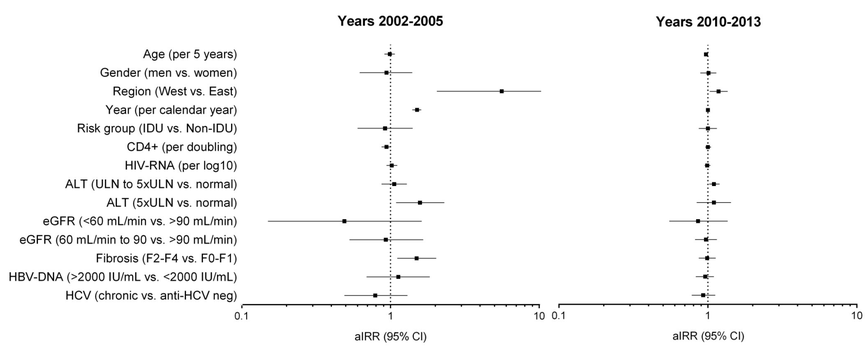
HBV active drugs used in HIV/HBV co-infected people over time in EuroSIDA



cART: combination antiretroviral therapy; ARVs: antiretroviral drugs; TDF: tenofovir; FTC: emtricitabine; 3TC: lamivudine

Figure 2

Factors associated with taking tenofovir-based cART stratified by time periods



The poisson regression model is adjusted for the variables shown. Age, Yearm CD4+, HIV-RNA, ALT, fibrosis and HCV are time-updated.

cART: combination antiretroviral therapy; IDU: injection drug user; ALT: alanine aminotransferase; eGFR: estimated glomerular filtration rate; aIRR: adjusted incidence rate ratio

Table 2

Reasons reported for stopping tenofovir	N (%)
Toxicity, predominantly from kidneys	25 (26.0%)
Unknown	17 (17.7%)
Availability of more effective treatment (not specifically failure or side effect related)	16 (16.7%)
Treatment failure (i.e. virological, immunological, and/or clinical failure)	13 (13.5%)
Toxicity, (other)	12 (12.5%)
Patient's wish/decision	9 (9.4%)
Hypersensitivity reaction	2 (2.1%)
Non-compliance	2 (2.1%)

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