

Abstract supplement

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antiretrovirals were switched to TDF/FTC between May 2015 and May 2016 were included in this analysis. We collected information on the demographic and clinical characteristics before switch and CD4, plasma HIV RNA load (PVL), lipids, serum creatinine, glycosuria, proteinuria and beta-2 microglobulin at baseline and during follow-up. Adverse effects and causes of discontinuation were also recorded.

Results: During the 12-month observation period, 1164 patients switched from TDF and lamivudine ($n = 818$), coformulated abacavir/lamivudine ($n = 229$) and coformulated zidovudine/lamivudine ($n = 117$) to TDF/FTC, without changes made to the third agents, after a mean exposure duration of 60 (SD, 47), 91 (SD, 32) and 40 (SD, 40) weeks, respectively. CD4 and PVL before switch were 613 cells/mm³ (SD, 284) and 1.50 log₁₀ copies/mL (SD, 0.70). After an interval of 240 days (SD, 68), the mean CD4 and PVL remained stable (610 cells/mm³ and 1.38 log₁₀ copies/mL, respectively), so was mean serum creatinine for TDF and lamivudine group (0.93 vs. 0.92 mg/dL) and zidovudine/lamivudine group (0.94 vs. 0.96 mg/dL), but it increased from 0.94 to 1.12 mg/dL for abacavir/lamivudine group. Mean total cholesterol, triglyceride and low-density lipoprotein-cholesterol decreased from 178.0 to 167.2, 178.1 to 134.9, and 105.0 to 99.4 mg/dL for abacavir/lamivudine group, respectively, and 161.4 to 152.3, 150 to 135.1 and 97.1 to 94.3 mg/dL for zidovudine/lamivudine group, respectively. Urine beta-2 microglobulin increased from 1.24 to 1.44, 0.68 to 1.62 and 1.37 to 2.9 mg/L, for TDF and lamivudine, abacavir/lamivudine, and zidovudine/lamivudine group, respectively. TDF/FTC was discontinued in 46 patients (4.0%), due to diarrhoea ($n = 5$), nausea ($n = 6$), allergy ($n = 5$), paresthesias ($n = 5$), increased serum creatinine ($n = 5$), increased PVL and emergence of resistance ($n = 6$) and other miscellaneous causes ($n = 16$).

Conclusions: Coformulated TDF/FTC was generally well tolerated and safe in HIV-positive Taiwanese, with additional lipid-lowering effects in those who had been on abacavir/lamivudine- or zidovudine/lamivudine-containing regimens. Periodic renal monitoring for renal tubular dysfunction is warranted.

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Optimizing viral load testing to improve quality of care and client retention for PLHIVs in HIV clinic in Northern Nigeria: impact and experiences

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Introduction: PLHIVs on antiretroviral (ARV) regimen with plasma viral load above 1000 copies/mL based on two consecutive viral load measurements after 3 months, with adherence support, are said to be in virology failure. Virology failure leads to easy HIV transmission, evitable morbidity and mortality especially if antiretroviral therapy (ART) drugs are switched without initial VL testing. Unfortunately, VL testing is so costly. The few available PCR laboratories and point-of-care (POC) VL machines that are used for the testing are not evenly distributed in the country. Currently over 70% of PLHIVs have not done any VL test in the last one year since enrolled into care. In 2014, MSH ProACT, a USAID-funded programme in Nigeria, launched a PCR laboratory in Usman Danfodiyo University Teaching Hospital Sokoto to provide free VL testing. This is in alignment with PEPFAR and UNAID 90:90:90 strategies. This study was to find out the impact of the PCR laboratory on PLHIVs' quality of care.

Methods: Retrospective study was done one year after the PCR launch. Clinical audit of the VL register and chart review of 268 folders of clients with detectable VL results >20 VL copies were

conducted. Analysis of client retention data was also done. Update training was conducted for clinicians and other healthcare workers (HCWs) working in the ART clinic to optimize VL testing.

Results: The analysis of the VL register showed that 268 out of 583 recorded results (46%) had detectable VL of which 141 (53%) are >1000 copies/mL. Chart review of the 268 folders revealed that 162 were not switched and 106 were switched: 22 (21%) were rightly switched and 84 (79%) were wrongly switched (considering the retrogressive outcome documented). 66 (78%) of these wrong ART switches had >1000 copies of which 28 (42%) were in World Health Organization stages 3 and 4. These wrong switches were made prior to the launch of the PCR laboratory.

Discussion: After the launch, seven (100%) of the subsequent switches were done well. Currently most clients do better without requiring switching post VL testing and adherence counselling. Within a year, client retention improved to 77% as compared with 59% in the previous year. Quality of care and clients' adherence improved.

Conclusions: VL testing improves quality of care for all PLHIVs. If PCR laboratories or POC VL machines are suitably deployed, health system will be strengthened, there will be reduction in wrong switches and, subsequently, reduction in mortality and morbidity among PLHIVs.

TREATMENT STRATEGIES: OTHER

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Knowing the epidemic is the best way to define diagnosis and treatment strategies to reach the 90–90–90 goals: the experience of Portugal in using the ECDC HIV modelling tool

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Introduction: In Portugal, data from the continuous of care show that in 2014 approximately 34,000 persons living with HIV (PLHIV) were in care, 82.8% of which on antiretroviral treatment and 78.4% virologically suppressed. However, updated estimates for HIV prevalence, incidence and PLHIV diagnosed are still missing, making difficult defining appropriate diagnosis and treatment strategies to reach the 90–90–90 goals.

Material and methods: Annual estimates (1983–2014) for the number of PLHIV, undiagnosed fraction, new infections and time to diagnosis were produced using the new software application "ECDC HIV modelling tool," and the data from the national HIV surveillance system. The model was constructed based on the "Incidence Method" [1]. Several cut points were considered to fit the model to the Portuguese HIV epidemic.

Results: Estimates were produced for total HIV-infected population and for main transmission categories: heterosexual, men who have sex with men (MSM), intravenous drug users (IVDU) (Table 1). At the end of 2014, an estimated number of 44,176 individuals were living with HIV in Portugal (prevalence: 0.43%). Of those, 4298 (9.7%) were not aware of their infection.

Conclusions: Current estimates indicate a lower prevalence than previous assessments. Estimated undiagnosed fraction and time to diagnosis vary for different transmission modes reflecting past interventions and current trends of the epidemic. Portugal has now updated data that will allow building the "treatment cascade." According to these results, Portugal has reached the cascade first

Abstract P114–Table 1. Estimates of PLHIV, PLHIV diagnosed and undiagnosed, undiagnosed fraction, new infections and time to diagnosis, global and by transmission categories (2014)

	Global	Heterosexual	MSM	IVDU
PLHIV	44,176 (43,175–45,154)	22,109 (21,416–23,236)	7930 (7532–8440)	13,353 (13,119–13,900)
PLHIV diagnosed	39,877 (39,476–40,295)	19,239 (18,987–19,574)	7071 (6896–7288)	13,193 (13,008–13,513)
PLHIV undiagnosed	4298 (3508–5274)	2870 (2200–3783)	859 (570–1292)	161 (95–665)
Undiagnosed fraction (%)	9.7 (8.0–11.8)	13 (10.3–16.3)	10.8 (7.4–15.5)	1.2 (0.7–4.8)
New infections	528 (36–1088)	414 (47–953)	106 (58–414)	5 (0–281)
Time to diagnosis (years)	4.1 (3.7–4.4)	4.5 (4.0–5.1)	2.8 (2.2–3.4)	3.4 (1.7–5.8)

goal (90% of the PLHIV already diagnosed) with time to diagnosis becoming progressively shorter. In order to reach all 90–90–90 goals, we must now address our efforts to define and apply new and stronger strategies related to linkage/retention in care and to treatment.

Reference

1. Van Sighem A, Nakagawa F, De Angelis D, Quinten C, Bezemer D, de Coul EO, et al. Estimating HIV incidence, time to diagnosis, and the undiagnosed HIV epidemic using routine surveillance data. *Epidemiology*. 2015;26:653–60. doi: <http://dx.doi.org/10.1097/EDE.0000000000000324>

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Drug retention time: a real-life Swedish nationwide cohort study on InfCareHIV 2009–2014

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Introduction: As HIV infection requires lifelong treatment, studying drug retention times and factors influencing treatment durability is essential. The Swedish database InfCareHIV includes high-quality data from more than 99% of all patients diagnosed with HIV infection in Sweden and provides a unique opportunity to examine outcomes in a nationwide real-world cohort.

Methods: Adult patients who started a new therapy defined as a new third agent (all ARVs that are not NRTIs) 2009 to 2014 with more than 100 observations in treatment-naïve or treatment-experienced patients were included. Dolutegravir was excluded due to short follow-up period. Multivariate Cox proportional hazards models were used to estimate hazard ratios for treatment discontinuation.

Results: Two thousand five hundred and forty-one treatment-naïve patients started 2583 episodes of treatments with a third agent. Efavirenz was most commonly used (n = 1096) followed by darunavir (n = 504), atazanavir (n = 386), lopinavir (n = 292), rilpivirine (n = 156) and raltegravir (n = 149). In comparison with efavirenz, patients on rilpivirine were least likely to discontinue treatment (adjusted HR 0.33; 95% CI 0.20–0.54, p < 0.001), while patients on lopinavir were most likely to discontinue treatment (adjusted HR 2.80; 95% CI 2.30–3.40, p < 0.001). Two thousand nine hundred and ninety-one treatment-experienced patients started 4552 episodes of treatments with a third agent.

Darunavir was most commonly used (n = 1285), followed by atazanavir (n = 806), efavirenz (n = 694), raltegravir (n = 622), rilpivirine (n = 592), lopinavir (n = 291) and etravirine (n = 262). Compared to darunavir all other drugs except for rilpivirine had higher risk for discontinuation in the multivariate adjusted analyses: rilpivirine (HR 0.66; 95% CI 0.52–0.83, p < 0.001), atazanavir (HR 1.71; 95% CI 1.48–1.97, p < 0.001), efavirenz (HR 1.86; 95% CI 1.59–2.17, p < 0.001), raltegravir (HR 1.35; 95% CI 1.15–1.58, p < 0.001), lopinavir (HR 3.58; 95% CI 3.02–4.25, p < 0.001) and etravirine (HR 1.61; 95% CI 1.31–1.98, p < 0.001).

Besides the ARV treatment, certain baseline characteristics of patients were independently associated with differences in drug retention time. In naïve patients, the use of other backbone than TDF/FTC or ABC/3TC increased the risk for early treatment discontinuation. In treatment-experienced patients, detectable plasma viral load at the time of switch or being highly treatment experienced increased the risk for early treatment discontinuation.

Conclusions: Treatment durability is dependent on several factors, among others patient characteristics and ART guidelines. The choice of third agent has a strong impact, with significant differences found between drugs.

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Discontinuation of dolutegravir (DTG)-based regimens in clinical practice

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Introduction: Real-life data have shown a higher rate of side effects with dolutegravir (DTG)-based regimens than previously described in clinical trials. In order to confirm these observations, we have reviewed our experience in patients who discontinued DTG for any reason.

Materials and methods: Retrospective analysis of all patients who discontinued DTG in our hospital cohort. Pre-treated and treatment-naïve patients were included. Baseline characteristics at the time of DTG initiation and antiretroviral therapy before and after DTG were recorded. We describe any reason for dolutegravir discontinuation.

Results: Among 2470 HIV-infected patients, 827 (33.5%) patients received DTG (69.4% STR of ABC/3TC/DTG) from September 2014 to May 2016 for a median period of 156.8 days (4–1199). A total of 104 (12.6%) patients discontinued DTG for any reason and were switched to other ARV regimens. Of these 104 patients (60.6% STR of ABC/3TC/DTG), mean age was 49.6 ± 10.5 years, 74 (71.2%) were men, baseline CD4 count was 574 ± 324 cells/mm³, viral load was detectable before starting DTG in 17 (16.3%) and 30 (29%) had previous AIDS. Only seven (6.7%) patients were naïve. There were 41