Patterns of Efavirenz Use as First Line Therapy in the United States: 1999-2015

Angela Bengtson[1], Brian W Pence[1], Ellen F Eaton[2], Jessie K Edwards[1], Joseph J Eron[1], W. C Mathews[3], Katie Mollan[1], Richard D Moore[4], Connall O'Cleirigh[5], Michael J Mugavero[2]
[1]University of North Carolina, Chapel Hill, Chapel Hill, NC, USA, [2]University of Alabama at Birmingham, Birmingham, AL, USA, [3]University of California, San Diego, San Diego, CA, USA, [4]Johns Hopkins, Baltimore, MD, USA, [5]Massachusetts General Hospital, Boston, MA, USA

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Background

- From 1999 to 2014 efavirenz (EFV) was mainstay of first-line ART in the United States, and continues to be recommended globally by the WHO.
- EFV has been associated with important neuropsychiatric side effects.
- **Our analysis examines trends in EFV initiation 1999-2015 and identifies associations with initiating and discontinuing EFV.**

Methods

Data source: CFAR Network of Integrated Clinical System (CNICS) Cohort.

Study Population: Participants who initiated ART from 1999-2015 with complete ART use data and a detectable viral load (≥ 75 copies/mL) (n=8,230).

Measures: Socio-demographic, initial ART regimen, prior ARV use, prior medical record-documented mental health or medical diagnoses, antidepressant prescription, CD4 and viral load information measured at ART initiation in CNICS.

Follow-up: Participants were followed from ART initiation until ART discontinuation, death, loss to care (date >12 months with no HIV appointments), or administrative censoring (October 2014-September 2015), whichever date came first.

Statistical Analysis: (a) Log binomial models and (b) Cox proportional hazard models were used to estimate association between baseline characteristics and (a) initiating or (b) discontinuing EFV.

Results

Table 1. Multivariable associations for **initiating** EFV-containing ART among 8,230 new ART users in CNICS: 1999-2015.

Baseline Characteristics	Multivariable* PR (95% CI)	p-value
Prior mono or dual ARV use		
No	1.00	
Yes	0.78 (0.68, 0.89)	<0.01
Year initiated cART		
1995-2006	1.00	
2007-2015	0.95 (0.90, 0.99)	0.03
Age	--	--
Gender		
Male	1.00	
Female	0.80 (0.74, 0.87)	<0.01
MSM or Other	1.00	
IDU	0.85 (0.79, 0.92)	<0.01
Heterosexual	0.96 (0.89, 1.03)	0.24
Antidepressant use		
No on antidepressants	1.00	
On antidepressants	0.91 (0.84, 0.98)	0.02
Previous mental health diagnosis		
No	1.00	
Yes	0.80 (0.75, 0.86)	<0.01
CD4 count, cells/mm3		
≤ 350	1.00	
>350	0.94 (0.89, 0.99)	0.03

*Model adjusted for all variables in the table and additionally adjust

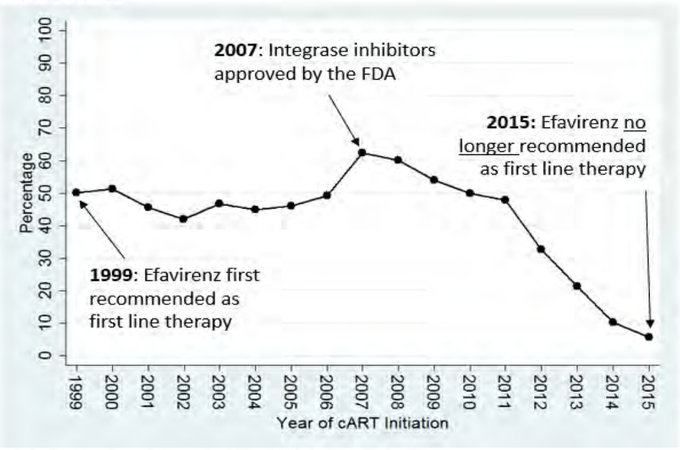
Table 2. Multivariable associations for **discontinuing** EFV-containing ART, among 3,710* persons those who initiated EFV in CNICS: 199-92015.

Baseline Characteristics	Multivariable** HR (95% CI)	p-value
Year initiated cART		
1999-2006	1.00	
2007-2011	1.70 (1.40, 2.05)	<0.01
2012-2015	3.68 (2.93, 4.62)	<0.01
White, non-Hispanic or Other	1.00	
Black, non-Hispanic	1.08 (0.90, 1.29)	0.40
Hispanic	1.00 (0.79, 1.26)	0.99
Previous mental health diagnosis		
No	1.00	
Yes	1.33 (1.11, 1.59)	<0.01

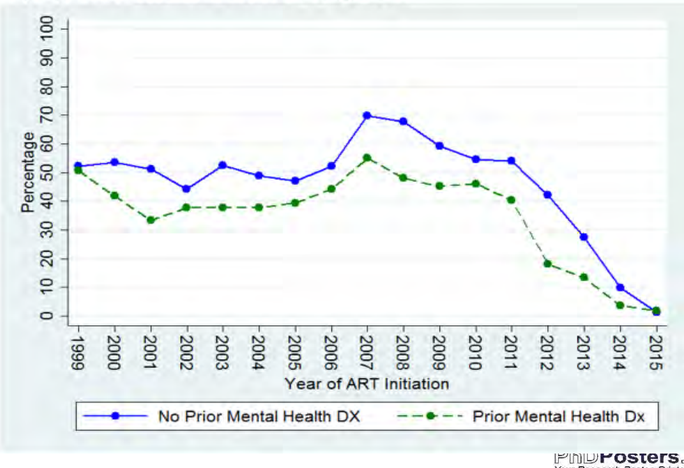
*Of the 3,710 who started EFV-containing ART, 685 (18.5%) switched and 3,025 (81.5) did not **Model adjusted for all variables in the table and site.

Figure 1. Proportion of 8,230 new ART users starting EFV-ART A) Overall and B) by Prior Mental Health Diagnosis Status.

A) Overall



B) By Prior Mental Health Diagnosis



Conclusions

- EFV was widely used between 1999 and 2015, including among participants with a previous mental health diagnosis.
- Mental health issues, substance use, and higher CD4 counts were less likely to initiate EFV. Mental health status was also associated with faster discontinuation of EFV.
- Clinicians should continue to screen and monitor patients with mental health issues when prescribing EFV.

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